CONCEPTUAL REVIEW ARTICLE

Midadolescents' Language Learning at School: Toward More Just and Scientifically Rigorous Practices in Research and Education

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Abstract: Which theoretical and empirical insights can inform language-in-education research that advances equitable and high-quality learning at school? In this three-part article, I first draw from various sources to foreground the urgent need to counteract

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linguicism and epistemic injustices and to commit to more just and rigorous scientific practices in research and education. Based on findings from my own research, I then argue that more just and rigorous practices need to attend to midadolescents' individual differences in language learning. In response, I present insights from recent innovative evidence-based pedagogical frameworks and tools that reveal promising paths forward. I close by calling for research with a dual focus on equity and rigor that supports moving away from "pedagogies of silence," which silence marginalized students' voices, damaging their identities and obstructing their learning, towards "pedagogies of voices," which affirm all learners' voices while amplifying their language repertoires and their critical learning.

Keywords language development; language learning; adolescence; literacy; multilingualism; language instruction; equity

Introduction

Which language-in-education research can contribute to deep understandings and transformative progress toward equity and excellence in research and educational practices today? Which theoretical proposals and empirical findings provide insights to guide research that contributes to equitable and high-quality learning, especially for students historically ill-served by educational systems around the world? In this article, I reflect on these questions confronting researchers interested in studying language learning with the goal of transforming youth education in ways that maximize learning and contribute to the construction of more equitable and inclusive communities. Following Halliday (1980), I understand language learning as encompassing *learning language(s)* (i.e., development of learners' first and additional languages), *learning through language(s)* (i.e., expansion of language resources for reading, writing, and learning, even for fluent speakers), and *learning about language*. Here, I focus on school-relevant language learning during midadolescence, where most of my work has taken place.

Research on how best to support midadolescents' language learning is crucial for schools. In today's linguistically demanding and mobile world, schools are under pressure to equip students with more advanced communication and literacy resources than ever before. Expanding language resources and flexibility is indeed central in preparing students for a world where knowledge is updated at ever greater speed, collaboration across differences is ubiquitously required to find solutions to complex problems, and distance communication is ever more prevalent in learning, working, relating to others, and organizing civically and politically (Ochs & Kremer-

Sadlik, 2015). Yet, immense inequities in learning opportunities, including language-based inequities, persist around the world. Joining many others from the field, I see language-in-education researchers as potentially key players in advancing the scientific understanding and evidence-based actions needed to transform classrooms and schools into more just, high-quality learning communities (e.g., Gebhard, 2019; Kibler et al., 2021; Schleppegrell, 2020).

In this article, I first present theoretical tools and evidence from various sources to demonstrate the urgent need to counteract linguicism and epistemic injustices and to commit to more just and rigorous scientific practices in research and education today. I then devote most of the article to reviewing recent developmental and pedagogical research on midadolescents' school-relevant language for learning across disciplines, drawing mostly from my own research and selectively highlighting links to others' work. I close the article by arguing that the reviewed evidence calls for moving away from "pedagogies of silence" (Oliveira, 2022, p. 1; Oliveira, 2021), which intentionally or unintentionally silence marginalized students' voices, damaging their identities and obstructing learning, toward "pedagogies of voices" (Uccelli & Boix-Mansilla, 2020, p. 1), which affirm the voices of all learners while amplifying their language repertoires and their critical learning. I argue that this calls for a multilingual habitus (Benson, 2013) and for collaborative work that positions students, educators, and researchers as perennial language learners in research and practice. This article is far from comprehensive or conclusive. Instead, I seek here to inform and invite an ongoing conversation related to big questions about the why, the how, and the so-what of school-relevant language research.

Linguicism, Epistemic Injustice, and Scientific Rigor in Language-in-Education Research and Practice
Counteracting Linguicism

To open the discussion of what kind of language-in-education research can contribute to deep understandings and transformative progress toward equity and excellence in research and educational practices today, I begin with reflections from my own recent teaching:

> As we open our course on language and equity, codesigned and cotaught with advanced PhD student Gladys Aguilar, we start our online seminar-type class at the Harvard Graduate School of Education by inviting our new community of 15 master's students to share the stories of

their names. We each get a chance to share a slide we've prepared in advance and some oral highlights about our names. These highlights become naturally intertwined with sharing about our identities, our languages, our families, and the places we call home. This first activity helps us start to get to know each other, begin to listen and learn from each voice, and take the first step toward building a sense of belonging and trust in a community in which we anticipate having safe yet brave conversations about colonialism, imperialism, slavery, oppression, and their intersection with language, identity, and education. This simple activity also helps foreground the universal and the particular. Amidst our many differences—our multiple home languages and native language varieties, our ethnicities, nationalities, citizenship statuses, abilities, ages, socioeconomic, gender, sexual, spiritual, and disciplinary backgrounds—we all share the experience of having a name; and yet, what we know about how we were named, why and how, and what our names mean to each of us are all deeply rooted in the specifics of an individual's experience, a family network of relationships, and communities' particular cultural traditions shaped by local and global histories. Listening to each person, then, becomes for each of us simultaneously a mirror to our own universal human experience and a portal into someone else's particular worlds. We take part in this activity through the common language that connects us all, English, flexibly interspersed with resources from other languages whenever speakers opt to draw from their multilingual repertoires to better communicate their stories and perspectives. Our next activity will involve constructing a linguistic-self map in which each will visually illustrate some characteristic resources from the languages, language varieties, and ways of using languages we use in each of our multiple communities: family, friends, school, career, shared-interest. These linguistic maps will highlight the value of each of our overlapping yet distinct ways of using language and will help spark the discussion of what it means to be multilingual.

Why do I share a vignette about university students in an article on school-age language learning? I share this because the young adult students in this seminar teach me much about how students' languages continue to be unwelcomed in school today. I am moved and angered when one of our bilingual Latina students tells me: "Immediately after our first class, I called my mom to tell her how excited I am about this course in which I get to share my ex-

periences, my languages, and my story. In my entire life, I have never experienced a class where I get to share my story and this makes me so happy." This comment does not highlight anything special about this course, but instead reveals what continues to happen in schools today despite years of research demonstrating the vital importance of building on students' funds of knowledge, funds of language, and cultural identities (Cummins, 2014; Moll, 2019; Valenzuela, 1999). In this same year, 2021, another student shares that she still suffers when remembering being discouraged from running for class president in fifth grade because, according to her teacher, "Who would listen seriously to you with that way of speaking?" "That way of speaking" presumably referred to this girl's use of African American Vernacular English. Frustration is evident in another student's voice when describing how two younger siblings were repeatedly punished for speaking their heritage home language at school in California. Among other class members' painful memories is that shared by a student adopted as a child by a North American family. She went back to Chile to connect with her Spanish-speaking biological relatives and their Mapuche roots only to discover how much her ancestral language and people are discriminated against by Spanish speakers, much like speakers of other indigenous languages throughout South America. These students, now thriving at an elite academic institution, achieved success while enduring personal suffering and despite schools devaluing their home languages and cultures and scarring their multilingual/multicultural learner identities. They come to education searching for answers on how to deeply transform learning spaces so that younger generations do not have to endure their pain. Students who self-identified as monolingual or monodialectal in this course shared that, despite having attended linguistically and culturally diverse schools, they never learned directly from classroom peers what it was like to grow up as a speaker from a minoritized language community.

The experiences of my students are well documented in research. Important theoretical tools illuminate experiences of language-related exclusion that continue to be unacceptably prevalent in schools today. I briefly discuss some of these key constructs below: linguicism (Skutnabb-Kangas, 1988), raciolinguistics (Alim et al., 2016; Flores & Rosa, 2015, 2022), and linguistic profiling (Baugh, 2018). Linguicism or language-based discrimination refers to "ideologies, structures and practices used to legitimate, effectuate, regulate and reproduce an unequal division of power and resources (both material and immaterial) between groups which are defined on the basis of language" (Skutnabb-Kangas, 1988, p. 13). Linguicism occurs in educational systems around the world in which children's home languages or language varieties

are not welcome and are recurrently devalued and/or corrected as deviations from a dominant norm (Benson, 2013; DeGraff, 2019). In educational, legal, social, and other spaces, foreign accents versus native ones, varieties associated with ethnicity (e.g., Chicano English, African American Vernacular English), regional varieties (e.g., Southern American English, Midwestern American English), or generational phenomena (e.g., vocal fry, upspeak) regularly trigger stereotypes that lead to different levels of trust or respect with consequences for language users' life opportunities and wellbeing (Baugh, 2018; Kinzler, 2020). Shockingly, about 370 million children in low- and middle-income countries are not being taught in the language that they know and understand, with devastating consequences for their learning opportunities and learner identities (Crawford & Marin, 2021).

Extending the analysis of linguicism through the lens of language ideologies (Hult & Hornberger, 2016; Woolard & Schieffelin, 1994), raciolinguistics explains how speakers from minoritized racial groups are often discriminated against by listening subjects who transpose their racial prejudices to language judgments in ways that conflate language and race. Racialized speakers' language practices, then, are devalued and qualified as deficient, even when speakers display high levels of language proficiency (Alim et al., 2016; Flores & Rosa, 2015, 2022). Baugh's (2018) extensive research on linguistic profiling documents actions that deny goods or services (e.g., housing, jobs) based on negative stereotypes inferred from a person's speech by association with various markers of marginalized social identities, including not only race, but also age, gender, and geographical origin.

Language-based discrimination is entrenched in educational systems around the world, with children's minoritized home languages or language varieties too often not welcome in schools, their language practices devalued, and they and their communities deemed linguistically deficient. Moreover, schools play a prominent role in miseducating the world about language (Smitherman, 2017). At the same time, extensive evidence shows that schools can positively transform learning experiences for learners from minoritized multilingual/multidialectal communities when affirming and leveraging learners' home languages, cultures, and funds of knowledge (Cummins, 2014; Moll, 2019).

Thus, an urgent shift is required: from education driven by a *monolingual habitus* (Gogolin, 2002), a worldview that functions on the inaccurate assumption that monolingualism is the norm and linguistic diversity is a problem or an anomaly, to educational contexts that embrace a *multilingual habitus* (Benson, 2013), a worldview that acknowledges multilingualism and multidialectalism

as prevalent around the world, counteracts linguicism and all forms of language injustice, and guarantees each learner's right to speak and be listened to (Hornberger & Skilton-Sylvester, 2000).

Fighting Epistemic Injustices

Most language-in-education researchers agree that understanding language learning requires examining language in relation to social power, that is, "a practically socially situated capacity to control others' actions, where this capacity may be exercised (actively or passively) by particular social agents, or alternatively, it may operate purely structurally" (Fricker, 2007, p. 13). It is worth reflecting on social power and justice in relation to knowledge.

Epistemic injustice is defined as the act of doing wrong to someone specifically "in their capacity as a subject of knowledge" (Fricker, 2007, p. 5). Epistemic injustice and linguicism overlap, but not totally, as not all cases of epistemic injustice necessarily involve language-based discrimination, and not all cases of linguicism involve devaluing subjects as knowers. Still, language plays a prominent role in epistemic injustice because instances of epistemic injustice are related to the language resources a user has or lacks, how these resources are perceived, and what knowledge-building opportunities these resources enable or prevent. Fricker (2007) usefully distinguishes two types of epistemic injustice: testimonial and hermeneutical.

Testimonial injustice occurs when prejudice about a speaker's social identities (e.g., in terms of language, gender, or race) results in assigning reduced credibility to this speaker's words. A glaring case of testimonial injustice occurred in the legal system with key witness Rachel Jeantel's testimony about what happened to her unarmed 17-year-old friend Trayvon Martin (as she spoke to him on the phone) when he was shot to death in Florida in 2012. Jeantel's use of African American Vernacular English led to numerous prejudicial and ignorant public comments and to a lack of credibility being assigned to her words during the trial (Rickford & King, 2016). At school, too often the voices of students from minoritized language communities are silenced and disregarded, whereas others' voices are attentively listened to. Many teachers—with the best intentions in teaching language—focus on correcting children's nonstandard forms while neglecting the ideas and questions these forms convey. In these instances, the only tool children have for expressing their knowledge and understanding is devalued, often damaging self-perception of their capacity as learners and knowers (Fricker, 2007). In fact, when we hear non-standard varieties different from our own, we

tend to focus on form instead of meaning; this tendency requires urgent and continuous undoing in educators' training and reflective practices.

Hermeneutical injustice refers to "a gap in collective interpretive resources [that] puts someone at an unfair disadvantage when it comes to making sense of their social experiences" (Fricker, 2007, p. 1). When learners are discriminated against because of their language, but neither the learners nor their teacher or school community have the concept of linguicism and complementary interpretative resources to comprehend what happened and to communicate the experience to others, hermeneutical injustice takes place. Among the many tools humans use to make sense of experience, language is uncontroversially a central one; therefore, having the language resources to understand the word and the world, as Freire famously put it (e.g., 1970/2000), becomes essential for personal development, as well as to confront injustices more broadly.

Testimonial injustice highlights the urgent need to counteract linguicism to protect and promote students' self-perceptions of their capacities as learners and knowers at school and of their capacities as potential contributors to later scholarly endeavors. Hermeneutical injustice emphasizes the need to expand language resources as interpretative tools for self-reflection and sense-making, and as critical allies in the fight for justice. Expanding language resources becomes crucial, then, in supporting the naming of what was previously unnamed, in comprehending what was previously incomprehensible, and in communicating previously unnamed and unintelligible experiences and phenomena to others.

Insights from linguicism and epistemic injustice raise an urgent call for action and highlight the need to reconceptualize language learning not merely as the acquisition of cognitive skills, but as participation in context-specific cultural practices linked to identities and emotions and affected by historico-political factors, including colonialism, imperialism, slavery, and oppression, that result in social power differentials across languages (Bourdieu, 1991; Suárez-Orozco et al., 2018). This comprehensive definition is needed not only to counteract language-based injustices in research and practice, but also to inform a more just and rigorous science base and to promote students' equitable socialization into scientific practices. I turn to this point now.

Committing to More Just and Rigorous Scientific Practices

I argue here that a commitment to counteracting linguicism and epistemic injustices in language-in-education research should come hand-in-hand with a central commitment to scientific reasoning and evidence-based discussion, not only as guides for researchers but also as key learning goals for students at

school. A call for scientific reasoning, evidence-based discussion, and scientific rigor might seem like a truism in a research journal like *Language Learning*. Yet, in our posttruth times of high distrust, intense polarization, and unqualified claims, it is important to acknowledge and reaffirm the scientific, evidence-based principles that guide our work. Current times indeed call for affirming a commitment to practicing and promoting a scientific attitude of "caring about evidence and being willing to change theories on the basis of new evidence" (McIntyre, 2019, p. 48).

Among always imperfect efforts to specify the nature of science, I follow Hoyningen-Huene (2013) in using the term *science* in the "broadest possible sense" to refer to the natural sciences, social sciences, and humanities, and in understanding scientific knowledge as distinguished "from other forms of knowledge, in particular from everyday knowledge, primarily by being more systematic" (p. 25). Systematicity entails great care in articulating explanations linked with data and comprises at least nine dimensions: "descriptions, explanations, predictions, defense of knowledge claims, critical discourse, epistemic connectedness, ideal of completeness, knowledge generation, and representation of knowledge" (Hoyningen-Huene, 2013, p. 35). Critical discourse in this framework refers to the social institutions and structures of scientific communities as systematically engaged in self-critical oversight of science quality. Far from assuming that all scientific endeavors are inherently valuable, scientific communities need to be vigilant about flaws that may arise from various sources (dishonesty, bias, negligence), applying constant scrutiny to ensure that science lives up to the norms of ethics and systematicity (Ioannidis, 2005; Marsden & Morgan-Short, 2023).

In the quest to produce systematic and more just work, the mistakes of past research show that systematicity is necessary but not sufficient, however. Minoritized communities can be systematically excluded and their experiences systematically misrepresented if there is a lack of commitment to additional epistemological dispositions about what it means to responsibly generate knowledge and understanding. Prominent criticisms from feminist epistemologists (Wigginton & Lafrance, 2019) highlight the biases and overgeneralizations of research based exclusively on male samples. More recently, the ethnocentrism of psychological research has been unveiled by work showing how human psychological processes misinterpreted as universal were based almost exclusively on samples from Western, educated, industrialized, rich, and democratic (WEIRD) societies (Henrich et al., 2010). Language-in-education researchers are well aware of overgeneralizations of findings based on small samples and of a priori deficit perspectives in research design and

interpretation (Avinieri et al., 2015). Often the perspectives of those from marginalized language communities who will be most affected by the results of a research project are not incorporated (Gutiérrez & Penuel, 2014).

In a world filled with understandable frustration with the status quo and impatience to promote change, however, youth, educators, and researchers may be tempted by cynical attitudes toward scientific research or may even be ready to discard all prior science as imperialistic and biased. Although new critical stances and valid strong criticism are sorely needed, cynical stances run the immense risk of throwing the baby out with the bathwater and thereby missing important lessons from always imperfect yet insightful research, and even discrediting the field. Prejudiced evidence-free assertions about language learning abound and continue to lead to harmful consequences (for a review of misconceptions about multilingualism, see Ortega, 2019). Language-in-education researchers can be key players in defending the value of science, rejecting pseudoscientific claims from across the ideological spectrum, and proactively promoting the scientific attitude while upholding science to its highest standards of rigor and justice.

I argue that, together with affirming learners' languages and identities, it is equally important to socialize youth into the systematic, evidence-based, scientific practices of knowledge construction, reasoning, and argumentation in order to offer them the tools to access past and future knowledge in the social sciences, natural sciences, and humanities. Students need to be equipped with the tools to both learn from and criticize scientific texts, recognizing biased practices and the ideologies that permeate texts, theories, and empirical research due to the positionalities that people bring to their work (Janks, 2009). Simultaneously, it is of the utmost importance for the wellbeing of individuals and societies to prepare learners to engage in critical evidence-based argumentation, to equip them with the hermeneutical resources to better understand themselves in the world, and to socialize them into the analytical disciplinary tools that will enable them to reject the kinds of evidence-free claims that are currently putting the world's social, biological, and political health at serious risk (Lee, 2020; McIntyre, 2019).

In summary, attending to equity in language-in-education research today is a must because larger societal systems of historically entrenched inequities, linked to or perpetuated through language policies and practices, are being reproduced and reinforced in schools. Dismantling systemic inequity calls for the restructuring of schools and classroom instruction. This requires a central commitment in language-in-education research to generating a rigorous evidence base ever more attuned to justice, including

the counteracting of linguicism and epistemic injustices. Engaging students in critical scientific learning, evidence-based reasoning, and knowlege construction is a key component of this commitment. But why is this call for socializing youth into scientific knowledge and reasoning relevant in an article on midadolescents' language learning? Because, as I discuss next, scientific learning and reasoning have linguistic correlates, that is, language resources and practices that students need to learn in order to access scientific knowledge along with the hermeneutical tools necessary to understand, communicate, contest, and reinvent scientific knowledge and society's status quo.

Research on Midadolescents' Language for Scientific Learning Across Content Areas

On the basis of evidence from my own work and that of others on midadolescents' school-relevant language learning, I argue that, without understanding and leveraging the immense variability in the language resources that students bring to school and without attending to the language resources that all students need for content-area reading, writing, and learning, schools run the risk of maintaining and even exacerbating the inequalities present in the larger society. My work is part of a line of research that seeks to contribute to an educationally relevant theory of language learning (Grøver et al., 2019). Over the years, a community of mentors, colleagues, students, and former students has sought to generate theoretical proposals and empirical findings motivated and informed by problems and insights from practice, by examining learning in context, and by documenting and testing transformative practices and learning environments across languages and communities in different parts of the world. Below, after presenting an educationally relevant understanding of language learning, I draw from my own work, as the example I know best of an equity-driven language-in-education research program that reveals midadolescents' areas of growth in language for learning across school content areas.

School-Relevant Language as Context-Driven Sociocultural Practices

Converging evidence from more than three decades of research across various lines of linguistics—including systemic functional linguistics (Halliday, 2004/2006), corpus linguistics (Biber & Conrad, 2009), developmental linguistics (Berman, 2009), developmental pragmatics (Ninio & Snow, 1996), and anthropological linguistics (Heath, 1983, 2012)—widely documents that particular social contexts are associated with with recurrent and predictable patterns of use of language resources. These registers, that is, constellations

of lexicogrammatical features characteristic of particular social contexts (Halliday, 2004/2006), serve as conventionalized yet flexible solutions for accomplishing particular pragmatic purposes and for signaling membership to particular communities. For instance, in texting a friend versus writing a school science essay, language users draw from overlapping but distinctive and predictable constellations of language resources to accomplish their purposes and to signal their identities within particular communities (e.g., omitting words and using textisms such as *4ever* when texting a friend vs. using technical vocabulary and transition markers when writing a science essay).

Evidence from functional linguistics also supports the tenet that there is no such thing as fully mastering a language. Instead, language learning entails mastering an expanding variety of culturally and pragmatically patterned ways of using language with increasing flexibility; as such, language learning can continue throughout life as one learns to navigate new social contexts (Ravid & Tolchinsky, 2002). As students enter school, they encounter a novel social context with its own culturally patterned ways of using language (Heath, 1983). Over the years, students need to continue to learn unfamiliar language resources linked to new tasks driven by a variety of disciplinary learning purposes (e.g., to analyze a novel, to explain a scientific concept, to argue about a controversial social issue). Within this framing, content-area learning—for all learners, whether multilingual, multidialectal, or monolingual—entails not only gaining new knowledge and understandings, but also learning new language resources and gaining greater awareness of how language choices relate to social contexts.

Developmental progress in school-relevant language production has been characterized as moving from personal genres (e.g., narratives, recounts) to factual genres (e.g., procedures, reports) to analytical genres (e.g., explanation, argumentation; Schleppegrell, 2004). Indeed, whereas narratives are encountered from early on in school, new text types and purposes begin to be ubiquitous from the upper elementary grades. Prominently, analytical discourses— discourses that use analysis to define, explain, or argue—become the main cultural tools that mediate content-area learning and teaching in middle school and beyond. In their crosslinguistic cross-sectional study of oral and written discourse development, Berman and Nir-Sagiv (2007) document that, whereas proficiency in narrative discourse production is displayed by around age 10, proficiency in analytical discourses constitutes a later developmental accomplishment. Analytical writing development continues into the university years, with developing writers moving gradually from texts focused on defending

their own opinions to texts that display evidence-based stepwise argumentation (Vilar & Tolchinsky, 2022).

As midadolescents face the new demands of content-area reading, writing, and learning, they enter an important developmental period for the expansion of school-relevant lexical, grammatical, and discourse resources characteristic of analytical discourses across disciplines. Content-area analytical discourses (i.e., expository, explanatory, and argumentative discourses) comprise culturally specific and purpose-specific traditions of discourse that have evolved historically in response to the communicative, scientific, identity, and community-building needs of the disciplines from which they derive. As such, learning in the content areas entails understanding the specific communicative expectations for a content area and expanding the language resources that support precise, concise, and cohesive communication about increasingly abstract ideas conveyed alongside more nuanced viewpoints (Bailey, 2007; Berman, 2009; Fang & Schleppegrell, 2008; Nagy & Townsend, 2012; Nippold, 2007; Schleppegrell, 2004). One of many language-based challenges for educational excellence and equity is that the communicative expectations and demands of school learning (e.g., communicating concisely, marking logical connections explicitly) are often hidden and remain invisible for students, teachers, and researchers (Schleppegrell, 2004).

Thus, adolescence is a particularly important period for expanding school-relevant language resources and awareness. This expansion, as I discuss later, does not occur naturally. Instead, it requires scaffolding and active participation in cognitively demanding yet language-supported practices that invite adolescents into engaged and welcoming learning communities (Walqui & Van Lier, 2010). Extensive research has revealed discipline-specific language patterns (e.g., the language of science or history; Fang & Schleppegrell, 2008). In my work, I have focused instead on high-utility, cross-disciplinary language learning throughout the middle-school years.

Core Analytical Language Skills: Identifying High-Utility Language Resources

I synthesize here key findings from my own research on midadolescents' cross-disciplinary language, which culminated in the core analytical language skills (CALS) framework, as only one example in a broader research field focused on school-relevant language learning. The construct my research group and I proposed was originally named core academic language skills. In this article, however, I am relabeling it as core analytical language skills for school literacy for two reasons. First, the new name more precisely specifies the purpose

and discourse type (i.e., analytical) for which the construct was delineated. Second, the term "academic language" is no longer present in the new name. Whereas I value the research that has self-identified as focused on academic language learning (including my own), I have come to recognize the history of oppression and discrimination that is associated with the term "academic language" (Flores, 2020) and the categorical hierarchical misinterpretation of this term that often leads to deficit-oriented harmful practices. Thus, I have opted to avoid this term as a step toward equity and improved understanding across research and practice.

Importantly, the central question driving the CALS research is not about specific groups (monolingual vs. multilingual speakers; English proficient speakers vs. English learners), but about the language resources relevant for particular purposes and for learning tasks prevalent in school learning. We have intentionally moved away from describing what some groups lack. Instead, building on functional linguistics (e.g., Berman, 2009; Schleppegrell, 2020), we have identified the language resources of high utility for engaging in prevalent learning tasks across school content areas. Our work places the onus of responsibility on educational systems, schools, educators, curriculum designers, policy makers, and researchers to create the optimal learning contexts and practices for all students to succeed as language and content learners. At the same time, our work seeks to support educational actors by revealing language learning areas of growth that are often undetected and overlooked in education.

My collaborators and I have conducted research in partnership with schools for more than a decade as part of a larger effort to better understand why so many schools fail to provide optimal conditions for adolescents to become skilled text comprehenders (Uccelli, Barr, et al., 2015). We sought to begin by understanding which language resources used recurrently in analytical school texts might pose difficulties for midadolescents across content areas. First, we hypothesized that many midadolescents in the upper elementary school grades and in the transition to secondary school (Grades 4–8 in the United States; approximately ages 9–14) might not have learned the high-utility language resources characteristic of content-area analytical discourses. Second, we hypothesized that individual differences in these learned language resources would help to explain the difficulties encountered in comprehending and producing analytical school texts.

We had to start by asking what might be new in the language characteristic of analytical content-area texts that midadolescent learners might not already have mastered as fluent language users. What is new beginning around

fourth grade is that students shift from reading mostly narratives to reading-to-learn (and writing-to-learn) analytical texts (i.e., argumentative, explanatory, and expository texts) in the content areas. To capture the language demands of such a shift, my colleagues and I embarked on comprehensive research syntheses across branches of functional and developmental linguistics (e.g., Berman, 2009; Biber & Conrad, 2009; Schleppegrell, 2004), analyzed school textbooks and assessments, and conducted a series of pilot studies with students in Grades 4–8, with the goal of compiling a repertoire of language resources used prevalently in analytical texts in school, and in scientific disciplines more broadly (Barr et al., 2019; Uccelli, Phillips Galloway, et al., 2015).

Clearly, readers who cannot understand the language of texts would not comprehend them; yet why might fluent speakers encounter difficulties with language that they can read aloud? Answering this question requires reframing the reading process as an encounter of different sociocultural language repertoires. When a reader who is still unfamiliar with the ideas and the language of content areas engages in constructing meaning from a content-area text, multiple sociocultural language histories are likely to intersect with one another. More often than not, especially at school, the language of the reader and that of the text are the result of different sociocultural histories. In other words, the reader and the text (or the text's author) are likely to be associated with distinct speech communities with different sociocultural discourse practices (and when a teacher mediates the interaction between student and text, a third interacting component is added by the teacher's own language enculturation and framing of the reading task). For instance, in reading a biology text, students bring to the reading situation the language resources and practices learned throughout their own language and literacy enculturation histories, as well as their own purposes for engaging with that text. The biology text, in turn, reflects the patterned ways of using language characteristic of texts driven by similar purposes within the scientific community. Within this view, adolescents' learning to read entails them learning the often unfamiliar language resources of analytical texts, but equally, if not more importantly, entails teachers creating the conditions for adolescents to invest in critically adopting, rather than resisting, the new learner identities linked with these discourses (Phillips Galloway, McClain, & Uccelli, 2020).

Through research conducted in close collaboration with Chris Barr, Emily Phillips Galloway, and Alejandra Meneses, and in partnership with local schools and teams, we operationalized CALS. We arrived at this cross-disciplinary measurable construct of school-relevant cross-disciplinary language proficiency via a reciprocally informative process in which theory,

extensive research syntheses, extensive focus groups with students, and pilot quantitative studies informed the CALS operationalization and instrument, which involved an iterative process of item design and refinement. As part of this research, we have developed and validated theoretically grounded and psychometrically robust instruments originally designed in English (Barr et al., 2019; Uccelli, Barr, et al., 2015), but subsequently developed and validated from scratch in Spanish (Meneses, Uccelli, et al., 2018) and Portuguese (Cardoso et al., 2020). We collected data from thousands of students in Grades 4–8 (nearly 7,000 in the USA; about 2,300 in Spanish-speaking Latin American countries; about 3,000 in Brazil) to quantitatively test our hypotheses and to learn qualitatively from students' and educators' understandings of the language for school learning.

The CALS construct comprises seven deeply theorized and empirically tested sets of resources: *Organizing Text* (understanding the components of analytical discourses, e.g., thesis, claim, conclusion), *Connecting Ideas* (understanding logical connectives, e.g., *consequently*), *Tracking Participants* (understanding referential chains), *Interpreting Writers' Viewpoints* (understanding epistemic stance markers, e.g., *it is unlikely*), *Understanding Metalinguistic Vocabulary* (understanding vocabulary that refers to discourse or thinking processes, e.g., *contradict*, *generalization*), *Unpacking Dense Information* (understanding complex words and sentences, e.g., nominalizations, center-embedded structures), and *Identifying Analytical Discourse* (e.g., identifying dictionary-like definitions when contrasted with less analytical alternatives). CALS comprise resources that are not frequently used in colloquial conversations, because the shared resources involved in such conversations are typically acquired earlier in development. For example, whereas the logical connective *nevertheless* is included in the CALS construct, the connective *but* is not, despite being ubiquitous in analytical content-area texts. CALS are not meant to capture school-relevant language exhaustively, but to offer a helpful map of the language resources that today support content-area reading and writing along with participation in civic engagement, health, politics, and other public discourses (LeVine et al., 2012).

High-Utility Language Resources as Gateways to School Learning: Main Findings

It is crucial to foreground that CALS do not emerge from a prescriptive linguistics approach driven by correctness; instead, CALS were distilled from descriptive research on authentic language uses in texts across discplines. To be clear, CALS research does not focus on what some call academic gibberish

or unnecessarily intricate structures that obscure communication, but on language resources that routinely support communication, literacy, and learning in the content areas. Whereas misuses and abuses of the language of scientific discourse abound inside and outside educational contexts, these misuses, as Fairclough (2008) points out, do not invalidate the functionality of school-relevant resources. When not used to manipulate, hide, or deny access, school-relevant language resources are genuinely helpful in communicating more clearly about shared scientific reasoning, knowledge, and learning, and in critically examining language uses. Moreover, CALS are crucial to support learners' access to the accumulated and emerging hermeneutical resources stored in texts, and essential to support independent learning, analysis, self-growth, and criticism of the status quo.

Our CALS research shows consistent results across several studies that reveal the need to attend to language learning throughout the middle-school years. Our research program has focused on students in Grades 4–8 (i.e., ages 9–14 approximately) in the United States and Latin America. First, we have found striking individual differences in learners' CALS in all three languages investigated (English, Spanish, and Portuguese). Within each language studied, learners' CALS predicted their reading comprehension over and above word-recognition skills, vocabulary, and sociodemographic characteristics (Barr et al., 2019; Uccelli, Phillips Galloway, et al., 2015). These findings reveal that for numerous students the language of content-area texts functions as a gatekeeper, which highlights the need for pedagogical attention to language to support students' advances in reading to learn (Phillips Galloway & Uccelli, 2019; Uccelli, Phillips Galloway, et al., 2015). Of special note is that our research has focused mostly on fluent monolingual students. Despite including small proportions of English-learning students, our samples were comprised mostly of students in the United States designated as English-proficient or of monolingual students in Latin America. Thus, these findings highlight that all midadolescents continue to be language learners at school.

A second finding of high relevance for educational practice is that across the three languages so far studied, CALS, as measured by our CALS instruments, capture a constellation of skillsets that are distinguishable, yet develop concurrently as part of a unitary construct. Most likely, students learn these resources concurrently when participating in content-area analytical reading, writing, discussing, and learning at school. This foregrounds that the multiple skillsets comprised by the CALS construct are best learned through scaffolded participation in situated content-area practices, not as isolated skills (Barr et al., 2019; Meneses, Uccelli, et al., 2018).

A third finding concerns cross-linguistic relations and has been documented so far only for Spanish–English bilingual learners attending dual language immersion programs in the United States. We have found that Spanish CALS contributed to English reading comprehension even after accounting for English CALS, English proficiency designation, English word reading fluency, and sociodemographic background (Aguilar et al., 2020; Phillips Galloway, Uccelli, et al., 2020). To my knowledge, these are the first studies that document an impact of Spanish school-relevant language on reading comprehension, even after accounting for the contribution of English proficiency.

A fourth important finding is that in both English and Spanish, CALS predict learners' analytical writing quality (Figueroa et al., 2018; Phillips Galloway & Uccelli, 2019; Uccelli, Deng, et al., 2019). Importantly, however, language production needs to be studied as the fluid, hybrid, and dynamic discourse that it is for all language users. Whereas assessing the high-utility language features that support reading in content-area discourses was a productive approach in our CALS work, I call for language production research that examines language users' full repertoires of resources for self-expression. Understanding the fluidity of language production is essential for researchers and educators so that scaffolding is designed and tested to support the precision of ideas and understanding through language, rather than the mastery of language forms isolated from context (Uccelli, Phillips Galloway, & Qin, et al., 2020).

Finally, we have evidence that language skills relevant for reading to learn are malleable; in other words, they are expandable with the provision of scaffolding by teachers (and curricula) that welcome and leverage all students' voices to expand their language resources and for teachers also to learn from students (Jones et al., 2019; Meneses, Hugo, & Uccelli, 2021; Phillips-Galloway et al., 2021).

Factors Associated With High-Utility Language Resources: Emerging Findings

Although CALS-focused research has provided important insights from the field, I do not want to give the impression that these findings offer (as a helpful reviewer put it) "neat solutions on what is a messy reality." The complexity of language learning discussed throughout is suggestive of the complex research that lies ahead. CALS are not meant as exhaustive or as universal cross-disciplinary skills; they are not categorically distinct from other ways of using language; they are only a theoretical abstraction that sheds light on an important instructional area, yet in reality these skills are learned and used together with disciplinary and everyday language resources. Many unanswered

questions for theory and practice emerge from the insights that CALS-focused research has contributed to date. Below I give a few examples.

Research on CALS precursors has offered correlational evidence documenting that 30-month-old children who produced more there-and-then talk (i.e., narrative, fantasy, or explanation utterances) in extended conversations with their parents displayed, on average, higher CALS 10 years later at age 12. These results held even after accounting for the contribution of socioeconomic status, parental there-and-then talk, child amount of talk, child vocabulary, child syntactic comprehension, and parent vocabulary richness at child age 30 months. Compared to the contribution of each of the other language measures, the proportion of child there-and-then talk made a greater contribution to CALS scores (Uccelli, Demir-Lira, et al., 2019). We interpret these findings not as deterministic or associated with fixed individual traits, but as the result of home language environments that are likely to remain fairly stable throughout a child's development. Recently, Romeo et al. (2018) offered an explanatory link between language environment and young children's verbal skills. They found that a higher number of conversational turns between children and adults (captured via recordings of real-world home language use for two consecutive days) were associated with greater neural activation in Broca's area in children, independently from socioeconomic status, IQ, and amount of talk. Further research on precursors and mechanisms supportive of school-relevant language development is needed. Relatedly, intervention research designed to promote school-relevant language development via culturally relevant, socioemotionally connected, language-rich practices is urgently needed. The *Food for Thought* intervention for Latinx kindergartners offers an inspiring example by using culturally relevant practices to support engaged, extended family conversations around food routines (Leyva et al., 2021).

Emerging CALS-based findings corroborate the understanding of language learning as a constant interplay between recycling and creativity (Bakhtin, 1981). Borrowing the ideas of a text verbatim is commonly perceived as inappropriate, even as plagiarism. In an analysis of middle-schoolers' written science summaries (Qin & Uccelli, 2021), however, we found that strategic textual borrowing of selected linguistic chunks from experts' source texts was predictive of higher quality summaries; this association was stronger for students with higher receptive CALS. These findings call for more research that seeks to understand textual borrowing from a developmental perspective in relation to students' school-relevant language learning. Relatedly, studying instructional activities designed to scaffold the borrowing of others' ways of using language by supporting amplification, critical self-appropriation, and

reinvention of school-relevant language resources, seems promising. This is a complex endeavor still in need of much research.

In exploring school-level processes in Colombian public schools, higher levels of reported school belonging and lower levels of bullying emerged as predictors of midadolescents' Spanish CALS (Barrera-Osorio et al., 2020). This finding calls for more research on school-level and interpersonal processes as related to school-relevant language learning, an area as yet minimally studied. Additionally, more research on which CALS aspects are similar or different across languages/cultures promises to be insightful (Uccelli, 2019).

Pedagogical Implications of CALS Research

Our CALS-informed pedagogical vision calls for redefining the language learning goal at school from narrowly focusing on mastering the language of schooling to embracing instead critical-rhetorical flexibility as the learning goal for all: students, educators, and researchers (Uccelli, Phillips Galloway, Aguilar, & Allen, 2020). Critical-rhetorical flexibility refers to the ability to use language flexibly and effectively to navigate an expanding variety of social contexts (Ravid & Tolchinsky, 2002), alongside learners' increasing critical reflective awareness of which language choices they embrace, depart from, or reinvent to accomplish particular purposes in specific social contexts (Uccelli, Phillips Galloway, Qin, et al., 2020). Thus, all—students, educators, researchers—are positioned as perennial learners of ever-expanding, fluid, and dynamic ways of using languages. Relatedly, CALS reflect the language of today's scientific texts and schooling. If (or when) the discourses of science and schooling change, as disciplines' needs, standards, and communicative channels evolve or as language users push for innovation, these language skillsets will need to be revised.

Far from being in competition with disciplinary approaches, CALS research is intimately and complementarily related to them. By delineating the cross-disciplinary linguistic challenges of school texts and revealing striking individual differences in midadolescents' school-relevant language proficiency, researchers, educators, and curriculum developers are equipped with knowledge to design more equitable instruction. To approaches focused on discipline-specific language learning (e.g., Schleppegrell, 2020), CALS add a delineated repertoire of high-utility resources to be scaffolded across situated disciplinary practices, helping make visible for teachers, students, and researchers the hidden communicative expectations of scientific discourses across content areas (i.e., precision, conciseness, explicit logical connections,

a reflective stance, and stepwise logical discourse organization) and the resources that linguistically realize these expectations.

Importantly, CALS-focused research, as research grounded in critical functional approaches (e.g., Gebhard, 2019; Moore & Schleppegrell, 2020), does not emerge, as stated above, from prescriptive approaches; thus, it is not meant to prescribe the language to be used at school, let alone constrain students' languages for expression, thinking, and learning. Moreover, school-relevant language should not be misinterpreted as prerequisite to participating in content-rich, cognitively demanding learning. It is precisely by participating in content-area practices that the language resources that characterize disciplinary discourses are learned as pragmatic solutions to communicate specific meanings, not as prescribed conventional forms (Walqui & Van Lier, 2010). For reading, students will often need to be supported to negotiate, analyze, and understand a way of using language that may differ in many respects from the language they use regularly; yet, this does not imply that this is the only language to be used when speaking or writing as part of content-area learning. That, in fact, would be an impossible task. Undeniably, expanding language resources provide language users with more options to support precise understanding and communication. For instance, a speaker who knows exclusively *but* and *so* to express contrast and causal relations will have more resources for more precise communication and understanding if they learn *in contrast*, *nevertheless*, *consequently*, and *otherwise*. Yet, discourses and texts can be judged to be precise and pragmatically effective only in relation to specific audiences and purposes. The precision expected in scientific and educational discourses is the precision of ideas; scaffolding specific language forms is relevant to the extent that these forms support the precision of self-expression and understandings. Bunch and Martin (2021) aptly describe this when they call for a focus on the language of ideas to foreground that all learners need to draw on the resources they already know as they grapple to understand unfamiliar content.

A major instructional challenge is to create opportunities for students to adopt identities as scholars in order to invest in learning content and language that are intertwined with complex historico-political social power disparities. Evidence from linguistically minoritized adolescents' own voices revealed high awareness of the sociopolitical status associated with the language of school, which, painfully but not surprisingly, they had internalized as "more correct," "better," "smarter" than their own home language varieties (Phillips Galloway et al., 2015). Breaking traditional language and/or cultural divisions (e.g., Spanish at home; English at school) through continuities between families' and schools' goals and practices (e.g., supporting home

language in equity-committed high-quality Spanish–English dual language programs) emerges as promising in supporting the learning engagement of students from historically oppressed language communities (Uccelli & Aguilar, 2018). Relatedly, innovative work in Catalunya by Flecha and Soler (2013) shows how a community "turned difficulties into possibilities" (p. 451) by inviting Roma parents into the classroom to support their children's dialogic learning. Building on work on critical language awareness (Alim, 2010; Gebhard, 2019) and purposefully scaffolding students' own emerging metalanguage, Phillips Galloway and Meston (2022) found that learners who were supported to functionally and critically access new understandings and hermeneutical resources flexibly reflected upon and expanded their own identities, and appropriated CALS to argue for their own social justice causes.

When our research team shares CALS assessment results with teachers, the teachers feel empowered to empower their students to learn, reflect on, and flexibly use these previously unfamiliar resources through intentional and engaging instruction. In the absence of this evidence, educators often assume that learners who struggle with school reading need reading strategies or special education services, situating reading challenges within learners. In contrast, work on CALS highlights that learning to be a proficient reader and learner in middle-school content areas entails having plenty of opportunities to internalize and appropriate new culturally specific ways of using language linked with identities that can be embraced or resisted. The challenges that students experience therefore become linked to the instructional contexts and to the opportunities for learning culturally and pragmatically patterned ways of using language in these settings. CALS-supported discussion-based activities often lead teachers to learn from their students' ideas, reasoning, and out-of-school language resources. As teachers shift from correcting to affirming and amplifying language while listening to their students' voices anew, all—students and their teachers—get to expand their critical-rhetorical flexibility.

In summary, aligned with prior research in documenting the continuous growth in school-relevant language throughout adolescence (Berman, 2009; Derewianka & Christie, 2008; Schleppegrell, 2004), CALS findings reveal substantial differences in midadolescents' cross-disciplinary language resources and show that these differences help to explain individual differences in school-based reading comprehension and analytical writing for monolingual and multilingual learners. The findings call for language-conscious education as crucial in achieving equity and high-quality learning for all

(Meneses et al., 2020). A CALS-informed pedagogical vision entails inviting and empowering students not merely to abide by the conventions of school discourse, but to expand their language repertoires while creatively appropriating traditions of discourse through reflective choices, drawing on their multilingual/multidialectal resources to make sense of texts and to better communicate their own meanings.

Innovative Classroom Pedagogies: Promising Directions

How can research advance the double task of embracing a multilingual/multidialectal habitus that counteracts linguicism and epistemic injustices in school, while expanding learners' engagement with and knowledge of the school-relevant language resources needed to actively and critically participate in rigorous scientific learning and knowledge construction? This path requires language-focused educationally relevant research with a dual focus on equity and rigor. Accumulated evidence points, in my view, to at least two complementary lenses in designing and testing rigorous equity-driven pedagogies. One involves creating the conditions to disrupt power inequities to ensure a multilingual/multidialectal habitus and inclusive participatory structures as foundational to learning. Within this larger context, a second lens requires tools to scaffold access to and critical appropriation of the language resources characteristic of analytical discourses in ways that support engagement and deep understanding of scientific knowledge and practices. As illustrative of a larger field of inquiry, I describe below insights from promising pedagogical frameworks and school-relevant language-conscious tools, and then delineate some research insights and pending questions.

Critical Dialogic Education and Culturally Sustaining Pedagogy

The most recent research highlights the promise of transforming secondary-school classrooms into collaborative communities that engage in deep comprehension, disciplinary learning, and critique through discussion (Pearson et al., 2020; Wilkinson et al., 2017). Building on these findings and on insights from long-term work with multilingual learners (Walqui & Bunch, 2020), the critical dialogic education (CDE) framework proposed by Kibler, Valdés, and Walqui (2021) adds a critical perspective to discussion-based pedagogies. Designed to respond to linguistically minoritized students' strengths and needs, CDE is aimed at promoting learners' language practices for school success, while supporting them to challenge "linguistic and racialized norms and expectations" (Kibler et al., 2021, p. 1). This approach recognizes that even discussion-based approaches can silence linguistically marginalized students, who often feel

uncomfortable using the language valued as normative by teachers or insecure about participating as legitimate contributors in discussions where correct answers are expected. CDE curricular materials and activities are designed to disrupt power dynamics and counteract factors that lead to exclusion in order to empower students' voices inside the classroom and beyond. Rejecting the traditional teaching of isolated language forms through rigid sequences, CDE focuses on students' authentic language use in cognitively demanding, yet adequately scaffolded, learning tasks as the main learning mechanism (Valdés, 2018). Collaborative open-ended tasks are designed so that learners' experiential, cultural, and multilingual/multidialectal resources support access to and engagement with complex content and reasoning. Linguistically minoritized students are explicitly positioned as worthy conversational partners and held accountable to high expectations (Alvarez et al., 2021).

Moving away from "accuracy, repetition, and simplicity," CDE prioritizes "fluency, exploration, and complexity" (Kibler et al., 2021, p. 14). Poetry Inside Out (PiO) offers an illustrative case (Park et al., 2015). In PiO, English-learning students are asked to translate a poem into English from a language in which no student is proficient, without an authoritative or correct version as end goal. Learners' multilingual resources and awareness have much to contribute to this collaborative, open-ended, problem-solving translation challenge. Afterwards, students produce their own artistic creations (poems, songs, plays) expressing their own meanings, emotions, and identities. Finally, adopting a youth participatory action research approach, PiO integrates students, teachers, and researchers as coconstructors of knowledge, empowering youth as language innovators of scientific discourse as they introduce novel terms to analyze PiO practices.

In another framework, culturally sustaining pedagogy (CSP), Paris and Alim build on Ladson-Billings's (2014) influential theory of culturally relevant pedagogy, Moll's (2019) funds of knowledge, Gutiérrez's (2008) third space, and Lee's (2020) cultural modeling, seeking to actively sustain youth's pluralism of languages, literacies, and cultures, fostering plural and fluid identities and cultural dexterity, and encouraging students' critique of hegemonic practices (Paris, 2012; Paris & Alim, 2017). As one example, Alim (2007), building on a tradition of using hip-hop in the classroom and with the explicit goal of counteracting linguicism, engaged secondary school students in discussing "Who are the producers and consumers of knowledge? What are the relationships between language, culture, reality, power, and knowledge?" from the perspective of the Hip Hop Nation Speech Community. As Alim pointed out, "It is one thing to view the culture of our students as a resource for teaching

about other subjects, and it is quite another to see our students as the sources, investigators, and archivers of varied and rich bodies of knowledge rooted in their cultural-linguistic reality" (p. 17). Other key shared features of CSP approaches, identified by Paris (2021, p. 367), are "community accountability," which refers to positioning students, families, and elders as key collaborators in learning contexts, and "working to be in good relationship with the land."

Evidence from CDE and CSP studies sheds light on the classroom conditions that promote marginalized students' agency in reasoning with others and in leveraging their multilingual and multicultural resources while building connections with others through meaningful and equitable productive talk.

Critical Language-Focused Approaches

Language-based approaches focused on the demands of analytical discourse offer insightful tools to scaffold midadolescents' expansion of school-relevant language resources and critical-rhetorical flexibility in support of scientific learning and reasoning. Approaches based on systemic functional linguistics offer innovative tools and emerging promising evidence of their supportive role in preparing midadolescents for school reading and writing (Gebhard, 2019; Moore & Schleppegrell, 2020). Recent science-and-language interventions show how midadolescents can be engaged through intriguing scientific dilemmas that invite hypothesis generation and collaborative problem solving, even when dilemmas are not directly related to students' own cultures (Meneses, Hugo, et al., 2018; Moore & Schleppegrell, 2020). Among many tools developed to date, one illustrative example is Moore and Schleppegrell's (2020) linguistic scale to support midadolescents' understanding of writers' stance, specifically the understanding of language resources that mark the certainty of writers and the strength of the evidence they present in analytical texts. Working with Arabic-speaking English-learning adolescents, these authors reported students' engaging in more nuanced oral and written argumentation after their understanding of this crucial aspect of the scientific attitude was scaffolded through the use of a scale in which they recorded how likely a scientific phenomenon was. Similar scales (e.g., from possible to certain; from negative to positive attitudes) have been shown to be supportive of language-focused practices that support content-area reading, writing, and learning (Gebhard, 2019). A promising science-and-language-learning intervention designed for Spanish monolingual fourth-grade public-school students in Chile showed significant improvements in scientific explanations written by students who participated in the treatment group compared to the control group. This inter-

vention integrated the most up-to-date evidence-based practices on teaching science with targeted scaffolding of the discourse and grammatical resources characteristic of scientific explanations (Meneses, Hugo, et al., 2018).

Many other specific practices are worth mentioning. Translanguaging pedagogies, for instance, propose the scaffolding of multilingual learners' use of their full language repertoires for learning, without isolating bilinguals' languages (Cenoz & Gorter, 2013). So far, translanguaging pedagogies include a wide range of practices, including spontaneous pedagogical practices that affirm students' voices (e.g., Zavala, 2015), cognate awareness interventions with proven successful results (Arteagoitia & Howard, 2015), emerging innovative interventions that scaffold translation for learning (https://www.translateproject.com), and approaches that promote students' trilingual resources and crosslinguistic awareness for learning (Cenoz & Gorter, 2022). Research is still needed to systematically delineate and investigate a taxonomy of pedagogical translanguaging practices in order to understand which ones are promising for which learners, for what purposes, and under which conditions. The limitations and risks of pedagogical translanguaging approaches, including the risk in reducing learning space for nondominant languages, also need to be studied (Cenoz & Gorter, 2022). These pedagogical frameworks and practices open spaces to investigate their impact on students' language, intellectual, and social learning, as well as to inspire novel approaches that build upon their insights to continue to innovate and flexibly adapt to the needs and strengths of particular populations and learning goals.

Research Insights and Pending Questions

A few research insights, each of which brings new pending questions, can be highlighted from the accumulated developmental and pedagogical research.

1. Drawing from the work of scholars recent and past, an urgent call to action entails counteracting linguicism and epistemic injustices in schools and society.

It is of utmost importance to debunk false beliefs about linguistic diversity and make linguicism widely visible, socially condemned, and unacceptable in classrooms, schools, research, and society. Even micro language interactions reflect and construct interlocutors' societal positions, reproducing societal power relations, with serious consequences for individuals' learning and development opportunities in life (Bourdieu, 1991). Research shows that by elementary school, children already rate speakers of standard varieties as of higher status than those of nonstandard varieties; however, they exhibit more

variability in ratings of solidarity (e.g., friendliness and likability), which are seemingly affected by multiple experiential factors (McCullough et al., 2019). Better understanding factors associated with developmental and individual differences in language attitudes and ideologies, and investigating what is entailed in counteracting linguicism at school, are key if schools are to support teachers and prepare students to participate in and help build harmonious, linguistically diverse communities inside and outside of school.

2. School-relevant language learning requires recurrent opportunities to use language for authentic and engaging learning purposes.

Many adolescents who struggle with literacy in school engage in effective complex out-of-school reading and writing, suggesting that their struggles stem from the fact that school literacies differ from and do not leverage nor sustain out-of-school youth practices (Alim, 2007; Moje, 2015). Furthermore, how challenging it is to learn language resources for particular purposes depends not only on the nature of the learning task and the engagement with it, but also on the accumulation of prior opportunities to learn and use language for similar purposes. For some English-as-world-language learners, the resources found in disciplinary texts are more accessible than many resources in colloquial conversations, in which they have minimally participated in their formal academic classes (Qin & Uccelli, 2016). Evidence suggests, then, that school-relevant language learning is not intrinsically more complex or difficult, but instead dependent on the opportunities for meaningful, active participation in using language repeatedly and engagingly for school-relevant, disciplinarily situated learning tasks. Classroom discussion interventions offer a promising avenue to promote midadolescents' language and sociocognitive development, which in turn supports school-relevant reading comprehension and writing (Al-Adeimi & O'Connor, 2021; Jones et al., 2019). However, more in-depth research is needed to determine which discussion formats and which balance of authentic uses versus explicit instruction, or of engaged listening versus active participation, are most productive for which learning goals under which conditions.

3. Language resources that support content-area practices are learned more effectively in the context of discussing, reading, and writing about topics with demanding reasoning skills and driven by conceptual learning goals.

Perhaps counterintuitively, scaffolding students' language resources in the service of understanding demanding content is one of the best ways to support language learning, granted that instruction provided scaffolding for language

demands (Bunch & Martin, 2020). One robust finding is clear: Teachers cannot and should not wait for their students to develop proficiency in the language of content areas before they ask them to participate in content-area reading, writing, and discussion. It is, in fact, by participating in these disciplinary practices, involving demanding, yet scaffolded higher order thinking skills and attention to language, that students learn those specific ways of using language. Further research is needed to determine how educators can best scaffold adolescents' talk while responding to linguistically heterogeneous classrooms and which pedagogical tools can best support and advance such scaffolding.

4. Identities play a salient role in learning.

Literacy research reveals that a major challenge at school is to engage students to invest in disciplinary identities, which need to be intentionally scaffolded while out-of-school identities are amplified rather than devalued (Lee, 2020; Moje, 2015; Phillips Galloway et al., 2015; Skerrett, 2015). Effective initiatives for affirming learners' identities include incorporating funds of knowledge and home languages, engaging students in the critical examination of historical and contemporary inequities, and including the histories of minoritized communities in educational curricula (Alim, 2007; Moll, 2019). However, affirming language identities requires more than just including students' home languages in the curriculum (Valdés, 1997). Oliveira and Becker (2020), for instance, found in a study of a Portuguese–English dual immersion program that Brazilian immigrant children did not receive the instructional attention and scaffolding enjoyed by their English-dominant peers. This differential treatment resulted in an ironically inequitable environment in which "Brazilian immigrant children elevated the status of the language… but were not themselves afforded a similarly high status" (p. 572). The field will benefit from further research that examines classroom interactions as affected by contextual concentric circles, including local and national policies, and contemporary and historical power and language relations.

Concluding Thoughts

Drawing on the evidence reviewed in this article, I argue that moving toward pedagogies of voices entails at least six interrelated shifts (see Table 1). The first is a shift toward pedagogies that commit to promoting a scientific attitude and evidence-based reasoning and prepare learners for active participation in the construction of more just and rigorous scientific knowledge. From a

Table 1 Six shifts that characterize pedagogies of voices

Pedagogies of voices…
promote a *scientific attitude and evidence-based reasoning* and equip learners with the tools for accessing scientific knowledge and for participating in more just and rigorous scientific practices
promote a *multilingual/multidialectal habitus* that actively counteracts linguicism and epistemic injustices
acknowledge *power differentials across languages*, understanding language learning as a cognitive process and sociocultural phenomenon linked with identities and emotions and deeply affected by historico-political factors
position students, families, educators, and researchers as *perennial language learners*
attend to the *language demands of scientific learning* while welcoming students' languages as learning resources and holding all students to high expectations
are driven by the language learning goal of expanding *critical-rhetorical flexibility*

language perspective, this entails affirming and leveraging learners' voices, as well as equipping them with the language resources needed to access discipline-specific hermeneutical tools to understand, contest, and reinvent the world and themselves in it. Schools are language-mediated sociocultural contexts in which content-area learning involves also learning culturally patterned ways of using language and adopting new identities affected by historico-political factors. Midadolescent school-relevant language learning is not a universal or naturally unfolding developmental process; instead, it is an enculturation process that requires scaffolding and authentic participation in real-life uses of the languages for scientific learning. I call on researchers and educators not to shy away from revealing what students need to learn in order to be prepared for full participation in today's linguistically demanding world. Identifying areas of language learning need is a core component of asset-oriented approaches that help educators to support all students in expanding their language repertoires, precisely as part of recognizing them as highly capable multilingual, multidialectal, multiregister, creative, critical, and flexible learners of content and language.

A second profound shift requires moving away from a monolingual habitus (Gogolin, 2002) that privileges monolingualism and views linguistic diversity as a problem or anomaly to an education that actively promotes a multilingual/multidialectal habitus (Benson, 2013), a worldview that acknowledges multilingualism and multidialectalism as prevalent around the world, counteracts linguicism and epistemic injustices, and guarantees all learners the right

to speak and be listened to (Hornberger & Skilton-Sylvester, 2000). A closely related third shift requires reconceptualizing language learning as a cognitive process and sociocultural phenomenon that involves emotions and identities deeply affected by local, global, and historico-political factors. Such a comprehensive definition demands recognizing power differentials across languages in understanding and supporting learning and teaching.

Finally, pedagogies of voices driven by a multilingual habitus redefine the goal of language learning as broader than mastering the language of school. Instead, students, teachers, and researchers are all positioned as perennial language learners who continuously expand their critical rhetorical flexibility. Importantly, language use, even within the confines of a single language, is always the orchestration of a multiplicity of voices that involves linguistic innovation and recycling of others' language in an ever-changing combination of stability and creativity in which traditions of discourse are recycled, mixed, repurposed, and reinvented (Bakhtin, 1981). Learners need explicit scaffolding to learn the language demands of scientific learning while they are engaged in conceptual learning and held accountable to high learning expectations; importantly, newly learned discourses do not need to result in abandoning primary ones (Delpit & Dowdy, 2002). Transformational educational contexts and practices invite learners to invest in the expansion of their linguistic capital while taking on new identities as language users in communities that embrace, value, and understand multilingual and multicultural, fluidly hybrid selves and societies (Bakhtin, 1981; Bourdieu, 1991; Darvin & Norton, 2021; Paris & Alim, 2017). Certainly, a wider social change is needed, but for language-in-education researchers this change can start at school.

I close the article by submitting additional action-oriented questions that follow from the research strands reviewed:

- Across grades and content areas, which practices and contexts offer optimal learning conditions that lead to embracing a multilingual and multidialectal habitus and to expanding the language resources that support scientific reasoning and evidence-based discussions driven by the goals of fostering conceptual understanding and critical rhetorical flexibility?
- Which school requirements and expectations might reflect arbitrary benchmarks imposed by traditions set by historically dominant sectors and in need of reconsideration today? Which requirements and goals, in contrast, still serve important functions in socializing students and equipping them with resources to contribute to their meaningful individual lives and to the construction of harmonious societies?

- How can educators successfully invite students to take on new identities as language learners of content-area analytical discourses in such a way that their expanded conceptual understandings and language awareness will empower them to critically reflect about themselves in society, to question, and to take action toward constructing a more just world for all?
- How can educators overcome discontinuities between school and out-of-school worlds, so that schools and communities work harmoniously and constructively together to support learners' full human potential and meaningful learning and to support educators and researchers as continuous learners of students' languages and cultures?
- Which language learning processes and educational practices need to be understood as local and context-dependent, and which might lend themselves to generalization across contexts?

Few educational researchers today would disagree that educational contexts and practices need to be profoundly transformed. At the time of writing this article, the world continues to confront the serious health threat posed by COVID-19, which has exposed and exacerbated an accumulation of other, related crises—economic, racial, educational, political, environmental—and thus made the deep inequities across the globe more visible than ever. This time of global suffering has led to deep questioning about what has been and what could be and thus offers a unique opportunity for change within this disruption. In a world in need of profound systemic changes, language-in-education researchers have the potential to contribute to that transformation in meaningful ways while striving to balance the values of scientific rigor and social justice.

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