

## **The Linguistic Impact of Remote Learning: A Study of Language Development during the Pandemic**

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### **Abstract**

The COVID-19 pandemic precipitated unprecedented changes, shifting face-to-face instruction to remote learning in early childhood settings and restructuring the linguistic ecology of children within households. Many experienced limitations in access to highly interactive peer and teacher discourse. This article synthesises interdisciplinary evidence concerning language development within the context of remote learning during the pandemic era, with a particular focus on early childhood and early childhood special education. Drawing on perspectives from developmental psychology, sociocultural theory, the philosophy of language, and a literary-critical analysis of narrative and dialogic exchange, the paper explores how emergency remote learning altered (i) the quantity and quality of linguistic input, (ii) pragmatic development opportunities afforded through reciprocal interaction, (iii) emergent literacy practices mediated by caregivers and digital texts, and (iv) disparities in access and support for children with additional needs. Empirical evidence reveals a tendency towards heterogeneity, with some cohorts of children exhibiting measurably vulnerable morphosyntactic skills and limited school-language exposure, while others demonstrated stable or even compensatory outcomes when high-quality early childhood provision, caregiver interactions, and structured literacy supports were available. The analysis argues that the defining linguistic risk of remote learning stemmed not from the technology itself, but from the loss of dialogic conditions—including timely turn-taking, contingent feedback, and the collective ability to attend—which are essential for language to become socially meaningful and developmentally generative.

### **Keywords**

Remote learning, language development, early childhood education, emergent literacy, pragmatics, screen-mediated interaction, tele practice, and the COVID-19 pandemic were key factors.

## Introduction

The global pandemic represented a historical disruption in the communicative environment for children. Widespread school and early-years closures limited children's access to uninterrupted educator talk, peer dialogue, classroom practices, and literacy-based interactions facilitated by trained practitioners. Consequently, the vocabulary of decontextualisation, narrative sequence, explanation, and early academic discourse, typically practiced by children, was effectively displaced into homes where resources, time, and linguistic capital were unequally distributed. Remote learning programs varied considerably, encompassing synchronous video classes, asynchronous worksheets, phone calls, radio/television instruction, messaging applications, and activities provided by caregivers. Establishing a definitive causal narrative regarding language loss or gain is challenging, necessitating an analysis of underlying mechanisms rather than simplistic conclusions.

Another complex issue lies in differentiating between planned online education and emergency responses. Remote learning during the pandemic frequently constituted emergency remote instruction—a rapid, short-term adaptation intended to maintain contact and continuity during crisis circumstances, and often lacking pedagogical redesign, accessibility audits, or adequate training. The compatibility of this emergency online provision with developmental requirements was particularly debated in early-childhood education, where language acquisition is closely linked to play, embodiment, and responsive interaction. Nevertheless, the pandemic spurred innovation, with educator-caregiver collaboration strengthened in certain settings, telepractice becoming the predominant form of speech-language therapy, and families increasingly prioritising home-based language rituals, shared reading, and storytelling. Consequently, an analysis of the linguistic effects of remote learning must embrace divergence, acknowledging potential stability of compensation in one area or context at the expense of others within a single interpretive framework.

The research questions are as follows: How can remote learning restructure language-learning environments for children during the pandemic? Which linguistic areas are most vulnerable to these changes (vocabulary, morphology, syntax, phonological awareness, and pragmatics)? What protective factors moderate outcomes, particularly for young children

vulnerable to language difficulties? Specifically, what factors act as protective factors—the quality of caregiver interaction, early-childhood provision, instructional design, and telepractice supports?

This critical review synthesises research on early childhood (c. 0–6 years) language and literacy, considering the disruption caused by pandemic conditions, including remote learning, limited childcare access, and altered home practices. The synthesis prioritises studies with clear sampling frames, well-defined measures (such as vocabulary inventories, literacy screeners, teacher/parent reports, and observational/survey designs), and a clear connection to the pandemic’s impact on young children’s language development. It provides a broad overview of existing research and its implications. It provides a broad overview of existing research and its implications, and contrasts this broader landscape with specific empirical research on caregiver-child activities and vocabulary, remote learning experiences in vulnerable populations, early-childhood surveys of remote instruction, and qualitative surveys of teacher attitudes toward language change in preschool settings.

The theoretical framework is interdisciplinary. Developmental and sociocultural explanations of language learning propose that language development is an interactive accomplishment, resulting from social interaction, contingent feedback, and engagement in culturally organised practices such as reading, playing games, naming games, and collaborative problem-solving. One prominent formulation highlights that developmental functions are initially created between individuals and then within the child, and it is arguably the case that reduced social interaction may influence linguistic pathways (Vygotsky, 56). This interactive focus is also intensified within the philosophy of language, particularly through the concept of “language-games”; children acquire meaning by participating in the patterns of word use within the context of their lived experiences, rather than receiving decontextualised definitions (Wittgenstein, 5). Consequently, these perspectives assert that remote learning is language-consequential because it alters the circumstances of dialogic engagement—specifically, timing, reciprocity, shared attention, and the pragmatics of turn-taking.

Foregrounding of language as a story medium, voice and dialogic encounter is anticipated in the literary criticism and narrative theory. Narrative competence (sequencing, perspective-

taking, genre awareness, interpretive talk about characters and events) is not just an add-on to vocabulary in early childhood, but a primary way in which children are training decontextualised language and social cognition. Narrative development might also change to caregiver in person or screen-based narrative development when remote learning replaces classroom storytelling and peer talk. This is not necessarily an act of degrading language, but it transforms the textures of the language, children listen to what types of voices, ask questions in ways and stories that may or may not initiate discussion.

Among the most salient contextual discoveries is that school closures related to the pandemic were prolonged and unevenly distributed, significantly shaping the realistic goals of remote learning due to disparities in digital connectivity. Analysis of a one-year period of disruption revealed that substantial groups of primaries to upper secondary students experienced limited face-to-face education, and nations with extended closures typically exhibited a reduced proportion of fixed internet access at home (UNICEF 1–2). Remote learning in these contexts frequently relied on non-interactive modalities, such as television and radio, thereby restricting contingent dialogue. While internet-based learning was available, even in limited areas, early childhood educators reported that remote provision, particularly in the initial stages, was often implemented with inadequate preparation and required subsequent improvements in infrastructure and time planning improved (McKenna et al. 1, 9-10). The central argument is that remote learning did not merely transfer language learning to the internet; instead, it decentralised communicative labour between teachers and peers and substituted the interactive quality and opportunities between families and screens.

The empirical evidence across nations indicates a relationship between parental actions during the lockdown and vocabulary development in children. A multinational study involving 836 children found that children with more reading caregivers and less passive screen time exhibited greater vocabulary development (Kartushina et al. 4). The authors frame language as a form of knowledge acquired through exposure, necessitating consistent interaction for children to learn (Kartushina et al. 5). This finding complicates simplified narratives suggesting a uniform delay due to the lockdown. Instead, it implies that increased caregiver talk, particularly through reading aloud, can safeguard or even improve language outcomes under conditions of remote learning or home confinement. Meanwhile, the implication of the discovery is to be careful,

because, when it happens that passive screen viewing takes the place of talk, it could also diminish just the kind of contingent, responsive language experience in the course of which vocabulary is solidified into useful sense.

The focus on the quality of interaction aligns with general developmental findings that language performance is determined not only by the number of heard words but also by the quality of interaction, including joint attention, routine-based dialogue, and related turn-taking. In a sample of low-income children from a large longitudinal study, the quality of early parent-child communication explained significant variance in subsequent expressive language, and was found to be stronger than raw word counts (Hirsh-Pasek et al., 2012). This is particularly relevant during the pandemic's remote learning period, as the home environment became the primary setting for language development, often under conditions of economic insecurity, caregiver burden, and emotional stress. Consequently, in areas where caregivers maintained a high level of interaction, children's language development was likely robust; conversely, in areas characterised by stress and scarcity, linguistic weaknesses were expected to escalate.

Remote learning frequently utilised literacy packets, electronic storybooks, and asynchronous language activities provided by caregivers. The linguistic effectiveness of these materials depends not only on their distribution but also on whether they foster dialogue, repeat key words and concepts, and encourage children to retell and clarify. A meta-analysis of book-reading interventions revealed consistent strategies associated with vocabulary growth, including rereading, explicit definition, dialogue-based questioning, retelling, and post-reading activities (Wasik, Hindman, and Snell, 39). These strategies are relevant because they transform exposure to books into an interactive process, turning the act of reading into a space for responsive conversation and meaning-making. Within the context of remote learning, the focus was on supporting caregivers' ability to operationalise dialogic principles of reading during times of stress and competing demands.

In certain circumstances, digital storybooks can enhance vocabulary and comprehension; however, their implications depend on design characteristics and the extent to which interaction is substituted or enhanced. Small, positive effects have been reported on story comprehension and expressive vocabulary in technology-enhanced storybooks compared to traditional

conditions, but technological interactive features can be detrimental to learning, impacting framing narrative and linguistic content (Takacs, Swart, and Bus 698–739). During remote learning, screen-based design can facilitate early literacy when used to present stories and dialogue, yet when employed as attention-capture devices, reducing conversational turns, they can undermine language learning. Consequently, the pandemic prompted a pedagogical question that had long been considered and now demanded urgent attention: whether a digital text would encourage a child to speak, retell, and question, or simply observe.

The most explicit arguments regarding linguistic threats in remote learning center on the deprivation of sustained teacher-child contact and formal instruction. The authors explain learning loss, as evidenced in one of their studies examining school closures and phonemic awareness, by citing the denial of intensive student-teacher interaction and inadequate support within online classroom settings. Although the study's conditions differ from those of an early-childhood context, its underlying mechanism remains applicable: phonological awareness is highly sensitive to systematic, responsive instruction and feedback. When remote learning is reduced to low intensity—characterised by shorter sessions, less live instruction, and reduced feedback—children are deprived of the opportunity to manipulate sounds and receive corrective scaffolding. Notably, early childhood educators themselves cite these issues as developmentally inappropriate and a lack of opportunity to develop socio-emotional skills, thereby restricting pragmatic language acquisition.

Among the most compelling counterarguments is evidence suggesting that not all cohorts experienced significant adverse effects on standardised language and literacy indicators. A quasi-experimental study of a state-funded pre-K program found that the absence of in-person pre-K in spring 2020 did not result in meaningful differences on a kindergarten readiness screener; in fact, several subdomains were higher in the COVID cohort (Hadley et al. 1, 7). This observation does not refute learning-loss histories but rather cautions against measurement specificity and area-based assessments. The emphasis on social communication, narrative competence, or morphosyntactic sophistication may be less important than constrained skills—such as letter knowledge and basic code-based measures—to standardised screeners. Consequently, the vulnerability to language during the pandemic era may be poorly identified through tests that prioritise alphabetic principles over dialogic fluency.

The pandemic's linguistic effects were not uniformly distributed. Connectivity, caregiver time, and institutional support influenced the extent of remote learning's success. A policy-based study examining the role of early childhood provision revealed that increased access to early childhood education and care during pandemic disruption correlated with greater vocabulary development among less advantaged children, suggesting that structured early-years provision can function as an equity lever rather than a luxury (Davies, Hendry, and Gonzalez-Gomez). However, this potential was undermined by disruptions including closures, quarantine, and unequal access. Consequently, remote learning risked exacerbating existing inequalities: children with access to language-rich and language-resource-rich home environments could leverage increased time at home for interactive language practices, while children in overcrowded, stressful, or digitally vulnerable circumstances experienced reduced exposure to educational language and increased passive screen time.

In the case of children with other vulnerabilities, distance education altered not only schooling but also access to special language services. A study of children born very preterm—a population at high risk of school readiness disadvantages—identified disparities in remote-learning experiences, including patterns of instructional type and parent-supplied activities. Some preterm preschoolers were less involved or spent less time on reading activities and learning apps than their full-term counterparts (Vrantsidis et al.). These results suggest that vulnerability is not entirely environmental; differing family circumstances, such as caregiver capacity, child attention or regulation requirements, and access to customised supports, can influence how the same remote-learning infrastructure is utilised.

Telepractice has experienced rapid growth as a compensatory intervention for speech-language therapy and other forms of support. Surveys indicated that parents and students generally held a positive attitude toward telepractice's effectiveness, although they still rated it as less effective than on-site provision (Lam, Lee, and Tong). A scoping review of telepractice during the COVID-19 era revealed that it was discussed as both a solution and a challenge, with concerns regarding timely adoption, ongoing doubts about equity, implementation, and the conditions under which remote therapy can be as relational as face-to-face therapy (Guglani et al.). Consequently, in early childhood special education, the linguistic focus extends beyond simply considering outcomes; it centers on modality: at what point does remote therapy maintain

contingent feedback and collaborative interaction, and at what point does it degenerate into a limited substitute, constrained by bandwidth, attention, and the limitations of display-based interaction.

The logical approach to the coherent introduction of remote learning during the pandemic involves shifting the focus to remote learning, language development, and remote learning functionality. The fact rather points out a picture of a mechanism-based, situation-specific one. The key factor is the preservation or loss of dialogic conditions: the mutually timed, embodied, social, and socially significant interactions through which children learn to use language in flexible, pragmatic, and narratively coherent forms. In this case, sociocultural theory and philosophy of language meet. In case of the language development as a process in which the social relations are first to emerge and are subsequently internalised (Vygotsky 56), the downward shift of peer talk, classroom routines and teacher responsiveness are likely to have linguistic consequences, particularly in those areas which depend on conversational turn-taking, perspective-taking and decontextualised explanation. When language is learned through language-games embedded within forms of life (Wittgenstein, 5), remote learning transforms these forms of life; screens introduce new norms of turn-taking (muting, waiting, latency), novel genres (chat messages, emojis, and short video instructions), and limitations on embodiment and mutual attention.

Literary analysis suggests this represents a re-voicing of childhood discourse. At school, children engage with a polyphony of voices—teachers, peers, shared stories, and group games. Remote learning has the potential to diminish this polyphony, reducing it to voices primarily from homes and media, potentially enriched by languages negotiated with less dialogue. The critical question is not whether children hear language, but whether they practice language as responsive speech—through questioning, argumentation, explanation, storytelling, and the correction of misconceptions. Reading aloud a story in a classroom can be a social activity, facilitated by group attention and peer reactions; however, reading a story on a device can be linguistically sophisticated but a closed interaction. Therefore, dialogue remains the most effective intervention strategy: rereading, questioning, and retelling practices transform narrative into a conversation rather than simply delivering content (Wasik, Hindman, and Snell, 39).

The discrepancy between results suggesting weaknesses in some language abilities and those indicating consistent performance on screeners suggests a second interpretive consideration: assessment decisions can influence the apparent “impact” of these findings. Studies with limited negative effects at kindergarten entry may reflect more easily influenced early literacy and language signals, potentially attributable to home practice and caregiver input. Simultaneously, morphosyntactic subtleties, pragmatic proficiency, and narrative structure—capabilities closely linked to dialogic communication—can exhibit less apparent modifications that may be overlooked by standard screeners. This aligns with the broader scoping review’s conclusion that most studies converge on declines in social communication, vocabulary, morphosyntax, literacy, and school-language exposure, while also emphasising variability over time and across socioeconomic conditions (Zuniga-Montanez et al., 569–587). 569-587). It does not mean that the policy should be more testing, but rather to improve testing methods: assessments that do not merely capture what children will be capable of labelling or decoding, but how they will maintain conversation, interpret stories, and otherwise deploy language in social situations.

In the context of early childhood special education, equitable access to language-rich interactions represents a key ethical consideration. Remote learning can be linguistically productive when designed relationally, utilising short synchronous lessons that prioritise turn-taking, caregiver coaching, readily available augmentative and alternative communication (AAC) facilities, and selected stories that encourage retelling and elaboration. McKenna teacher surveys indicated that remote learning improved with enhanced infrastructure, including devices and internet connectivity, as well as increased time for planning and access to wrap-around services (McKenna et al. 9-10). However, even with improved infrastructure, it does not guarantee dialogic quality; rather, it creates the potential for it. Telepractice extends beyond videoconferencing and necessitates pedagogical approaches that foster co-presence, engagement with young children, and a commitment to shared activity through caregiver collaboration. Parents’ and students’ relatively positive ratings of efficacy and preference for on-site provision should be interpreted as expressions of pragmatic awareness, not as a rejection. The relational density of in-person therapy is difficult to replicate remotely; nevertheless, continuity, access,

and caregiver roles can be strengthened when the paradigm is centered on interaction rather than content delivery.

## Conclusion

The linguistic effects of online learning during the COVID-19 period can be characterised as ecological and dialogic. Remote learning shifted the environment of language learning for children away from peer-rich, educator-mediated settings toward home-based interactions and screen-mediated content. Research indicates that this transition yielded mixed effects: reduced dialogic conditions, including low-intensity live interaction, passive screen exposure replacing conversation, and decreased caregiver capacity or connectivity due to socioeconomic factors, were associated with increased language vulnerability. Conversely, language outcomes were frequently maintained under conditions of joint reading and discussion facilitated by caregivers, accessible early-childhood provision, and enhanced remote-learning infrastructure and support. Ultimately, language acquisition is predicated on involvement, not merely exposure. Future disruption policies and pedagogies should prioritise dialogic design, incorporating routines that augment conversational turns, caregiver-mediated storytelling scaffolds, readily available telepractice models for early-childhood special education, and assessments of pragmatics and narrative skills, alongside constrained literacy measures.

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