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LOGOPEDIC AND PEDAGOGICAL MECHANISMS OF DEVELOPING DIALOGIC SPEECH IN PRESCHOOL CHILDREN IN THE DIGITAL EDUCATIONAL ENVIRONMENT

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ABSTRACT

This article substantiates an integrated system of logopedic and pedagogical mechanisms for developing dialogic speech in preschool children within a digital educational environment. Building on socio-cultural and interactionist theories, we argue that digital tools can amplify adult–child and peer–peer dialogue when they are embedded in logopedic micro-techniques and coherent pedagogical design. The paper clarifies how articulation placement, phonemic cueing, rhythmic pacing, and semantic–pragmatic scaffolding can be operationalized through multimedia feedback, adaptive tasks, and dialogic storytelling applications. A practice-oriented model is proposed that aligns therapist–teacher co-planning, multimodal prompts, scripted micro-dialogues, and parent tele-coaching. We describe a feasible twelve-week implementation framework and an evaluation strategy combining conversational analysis, turn-taking metrics, and standardized language measures. The article concludes with practical recommendations on combining digital resources with evidence-based logopedic techniques and dialogic pedagogy while safeguarding children's well-being and equity of access.

KEYWORDS: Dialogic speech; preschool; speech therapy; logopedics; digital environment; scaffolding; dialogic reading; telepractice; multimodal feedback.

INTRODUCTION

Dialogic speech in early childhood is a developmental outcome emerging from socially situated, meaningful exchanges with responsive partners. In preschool settings, dialogic competence encompasses coordinated turn-taking, contingent responses, pragmatic appropriateness, and growing syntactic and lexical resources. Socio-cultural approaches emphasize adult mediation and shared activity, while interactionist research details how feedback, joint attention, and conversational routines structure children's progress. The current proliferation of tablets, interactive whiteboards, and child-friendly applications has created a digital layer around those interactions. Digital tools can either fragment attention or, if designed and orchestrated pedagogically, provide salient auditory–visual cues, immediate feedback, and contextualized rehearsal opportunities that are difficult to deliver at scale in purely analog formats. The challenge is not simply to "add technology," but to embed concrete logopedic micro-mechanisms—articulation, phonology, prosody, and semantic–pragmatic mapping—within tasks that sustain

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reciprocity and meaning-making. This article elaborates such an integration and outlines conditions for effective, ethical implementation.

The aim is to justify and describe an integrated system of logopedic and pedagogical mechanisms for developing dialogic speech in preschool children in a digital educational environment, and to propose a practically applicable implementation and evaluation framework for preschool institutions and combined therapy–education teams.

The proposed framework was elaborated for a mixed-ability preschool group of children aged five to six. Materials include a suite of tablet applications enabling dialogic storytelling, phonemic discrimination, and articulation modeling; an interactive whiteboard for whole-group dialogic reading; head-mounted or tabletop microphones for high-quality audio capture; and a secure telecommunication platform for parent coaching and therapist–teacher conferencing. Central logopedic techniques comprise explicit articulation placement with slow-motion, close-up modeling; phonemic cueing with minimal pairs; rhythmic pacing using metronome-like visual timers; and syllable-to-word chaining with immediate replay. Pedagogical design uses dialogic reading scripts with open wh-prompts, recasts that expand child utterances, and planned peer dialogues around problem-solving play scenarios. A twelve-week cycle is suggested with three center-based sessions per week (twenty minutes small-group therapy integrated into classroom routines and one whole-group dialogic reading) and a weekly ten-minute tele-coaching segment for families. Evaluation combines conversational analysis of recorded interactions, turn counts per minute, mean length of utterance, type–token ratio, and task-embedded probes of pragmatic appropriateness. Standardized screening (where available) is administered pre- and post-cycle to triangulate functional measures.

Experience with the model indicates that digital supports are most effective when they intensify rather than replace human mediation. Visual overlays and slowed video of articulatory gestures enhance the salience of place and manner of articulation, allowing children to self-monitor through instant replay. Adaptive phonemic games that escalate from discrimination to production, paired with therapist recasts, lead to more accurate consonant clusters and smoother transitions from syllable to word level. In dialogic storytelling applications, scripted micro-dialogues embedded in meaningful narratives increase the proportion of contingent responses and reduce perseveration. When teachers consistently label conversational moves—asking for clarification, agreeing, disagreeing politely—children begin to appropriate the metalanguage of dialogue, which in turn raises the pragmatic adequacy of their contributions.

Quantitatively, typical cohorts show growth in turn frequency during structured play and reading sessions, along with increases in mean length of utterance and lexical diversity. Gains are strongest when on-screen prompts are quickly transferred to off-screen, face-to-face routines; for example, a visual timer that regulates digital turn-taking becomes a tangible sand timer during block play. The quality of adult modeling emerges as a decisive factor: clear prosody, slowed rate, and high semantic contingency drive better generalization than mere repetition. Parent tele-coaching extends practice opportunities at home and aligns feedback strategies across settings; short, focused demonstrations and goal cards facilitate adherence.

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Potential risks include overreliance on screens that crowds out unstructured peer interaction and physical play, or the unintended reinforcement of solitary, stimulus-response patterns. These risks are mitigated by strict time limits, prioritizing co-present social use of devices, and embedding digital tasks within broader projects that culminate in real-world collaboration. Equity concerns—hardware availability, language variety, and accessibility for children with motor or hearing differences—require flexible device policies, multimodal input and output, and optional augmentative and alternative communication supports. Ethical safeguards include data minimization, secure storage of recordings, and transparent caregiver consent.

Developing dialogic speech in preschoolers within a digital environment is most successful when technology is subordinated to interactional quality and evidence-based logopedic techniques. A coherent system that couples precise articulatory and phonological work with dialogic pedagogy, structured scripts, and attentive recasting produces measurable improvements in turn-taking, utterance complexity, and pragmatic appropriateness. The proposed twelve-week cycle, with its blend of center-based sessions, dialogic reading, and tele-coaching, offers a feasible pathway for integrated therapist–teacher teams. Future work should refine adaptive algorithms that respond to the child's conversational moves in real time and extend evaluation to long-term generalization in spontaneous peer interactions.

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