



PEDAGOGICAL AND LOGOPEDIC FOUNDATIONS OF DEVELOPING COMMUNICATIVE COMPETENCE IN PRESCHOOL CHILDREN THROUGH DIGITAL GAME TECHNOLOGIES

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ABSTRACT

The rapid diffusion of digital media into early childhood settings requires a theoretically grounded approach to using game technologies for communicative development. This article elucidates the pedagogical and logopedic foundations for integrating digital games into preschool education to foster communicative competence, defined as a dynamic system of linguistic, sociolinguistic, pragmatic, and strategic abilities appropriate to age. Drawing on sociocultural theory, play psychology, and contemporary logopedic practice, we argue that well-designed digital games can serve as mediated, dialogically rich environments where adult scaffolding and peer interaction co-construct speech actions. We describe a design logic that prioritizes semiotic richness, contingent feedback, and multimodal prompts aligned with speech therapy targets such as phonemic awareness, vocabulary expansion, grammatical structuring, and pragmatic turn-taking. A quasi-experimental implementation in typical mixed-ability groups is outlined to illustrate how game-based sessions can be embedded within daily routines and combined with micro-cycles of logopedic correction and reflective pedagogy. The article concludes with implications for curriculum design, assessment, and teacher preparation in digital pedagogy and logopedics.

KEYWORDS

Communicative competence; preschool; digital game technologies; speech therapy; logopedics; dialogic speech; scaffolding; sociocultural approach.

INTRODUCTION

In the preschool period, communicative competence emerges at the intersection of biological maturation, social interaction, and purposeful mediation. Classic work on the social genesis of higher functions situates language growth within guided participation and symbolic play, while contemporary logopedics emphasizes early prevention and correction of speech deviations to protect later literacy. The ubiquity of tablets and interactive boards has created a new layer of semiotic resources in kindergartens. However, the effectiveness of digital games depends less on novelty and more on their pedagogical orchestration. When games elicit narratives, role speech, and contingent feedback, they can amplify the benefits of traditional play; when they fragment attention or reward non-linguistic behaviors, they may suppress initiative and dialogic responsiveness. Consequently, a coherent foundation that integrates pedagogical principles with logopedic aims is essential for responsible adoption.



The study aims to substantiate and demonstrate how digital game technologies, when aligned with pedagogical principles of play-based learning and logopedic correction strategies, can systematically develop communicative competence in preschool children.

The proposed model is grounded in a sociocultural approach that views adult mediation and peer collaboration as central to language growth. Materials included narrative-driven tablet games with adjustable linguistic prompts, sound discrimination modules supporting phonemic awareness, and sandbox environments that allow children to construct stories using avatars and objects. Sessions were organized in small groups to preserve turn-taking and joint attention. Adult roles alternated between co-player, dialogic coach, and speech modeler who reshapes child utterances through expansion, recast, and elicitation. Logopedic micro-cycles targeted articulation placement, syllabic structure, and lexical retrieval, embedded into game quests rather than isolated drills. Assessment combined observational rubrics for dialogic indicators—initiative, topic maintenance, turn regulation, and repair—with speech therapy metrics on articulation accuracy and prosodic control. Parental involvement was ensured through home tasks that reuse the same game narratives in offline role-play to strengthen transfer beyond screens.

The integration of digital games with logopedic practice produced consistent gains in dialogic participation and clarity of expression when several conditions were met. First, narrative coherence mattered more than graphics. Children increased average utterance length and used more cohesive devices when quests required describing plans, negotiating roles, and explaining outcomes to peers. Second, contingent scaffolding amplified progress. When adults paused gameplay to co-construct formulations, children appropriated target structures and later used them spontaneously during free play. Third, multimodal cues supported articulation. Visual mouth models and slowed audio exemplars embedded in reward cycles helped stabilize difficult phonemes, but only when immediately followed by meaningful use in dialogue, such as telling a character what to do next. Fourth, cultural localization strengthened motivation. Stories populated with familiar settings—family gatherings, local markets, neighborhood playgrounds—elicited richer vocabulary and pragmatic politeness forms, suggesting that relevance primes narrative imagination and social language. Fifth, balanced stimulation prevented regressions. Short, predictable sessions with clear openings and closings sustained attention without compromising sensory regulation. Excessive animations or variable ratio rewards distracted from speech goals; replacing them with predictable narrative checkpoints preserved turn-taking discipline.

Quantitatively, observational rubrics showed increased frequency of initiative turns and reduced adult prompting by the third intervention week. Children previously reluctant to enter conversations began to volunteer narrative continuations, while peers displayed more successful repairs when misunderstandings occurred. In logopedic indicators, articulation accuracy improved in targeted phoneme classes alongside better prosodic marking of questions and requests. Importantly, transfer to offline contexts was visible in role-play centers, where children reused game vocabulary and plot structures without devices, indicating internalization of communicative patterns rather than mere on-screen compliance. Teachers reported that the co-player stance changed classroom discourse by legitimizing children's narrative leadership; therapists noted that coupling motor-articulatory practice with immediate dialogic purpose increased retention.

These results must be interpreted with prudence. Benefits diminished when adult mediation was minimal or when devices displaced rather than augmented traditional play. Screen time hygiene remained a non-negotiable boundary, and accessibility features were necessary for children with sensorimotor sensitivities. Professional collaboration proved decisive: educators planned topic webs and routines, logopedists specified phonetic-phonological targets, and families extended narratives at home, creating a coherent communicative ecology that outlived the devices themselves.

Digital game technologies can enhance the development of communicative competence in preschoolers when embedded within a pedagogically principled and logopedically precise framework. Their strength lies in creating scaffolded, culturally meaningful, and dialogically rich situations where children practice linguistic forms and pragmatic strategies with immediate purpose. Sustainable impact requires careful design, disciplined session structure, adult mediation, and alignment between classroom, therapy, and home. Teacher preparation should therefore include digital pedagogy, dialogic techniques, and speech therapy basics, while curricula should specify narrative-based game tasks, assessment rubrics, and hygiene protocols. The ultimate criterion is not the sophistication of software but the quality of dialogue it enables.

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