

Innovative Interactive Models in Primary School English Classrooms in the Context of Information Technology

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Abstract: The integration of information technology (IT) into primary education has reshaped English language teaching, shifting from traditional teacher-centered methods to interactive, student-centered models. This study examines innovative IT-supported interaction models—such as flipped classrooms, gamified learning, virtual collaboration, and AI-assisted instruction—in primary English classrooms. It explores their theoretical foundations, practical applications, benefits, and challenges. Case studies and empirical evidence show that well-designed digital interactions can enhance learner autonomy, communicative competence, and overall learning outcomes. The paper concludes with strategies for effectively implementing and sustaining interactive English teaching models in the digital age.

Keywords: Interactive teaching; primary English; information technology; digital tools; student engagement; classroom innovation

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1 Introduction

Advancements in information technology have transformed language education, especially in primary English teaching. Digital tools are replacing traditional lecture-based methods with interactive, learner-centered approaches that foster engagement and deeper learning. This paper explores how innovative IT-enhanced models can improve classroom interaction and language acquisition in primary schools. Drawing on theory, practice, and research, it provides a framework for integrating technology into English instruction to support educational modernization.

2 Theoretical Foundations of Classroom Interaction

Classroom interaction is central to second language acquisition (SLA). Vygotsky's sociocultural theory highlights the role of social interaction and scaffolding in cognitive and language development. Similarly, interactionist theories—such as Long's Interaction Hypothesis and Swain's Output Hypothesis—emphasize that meaningful communication enhances input comprehension, output production, and overall language learning.

In primary education, interactive learning is especially important due to children's developmental traits: they are naturally curious, social, and learn best through active, contextualized experiences. Integrating digital platforms into interaction models addresses these needs, making English learning more engaging, adaptive, and effective.

3 IT-Supported Interactive Teaching Models

The application of information technology in English classrooms has given rise to a variety of innovative interaction models. This section introduces four representative approaches and analyzes their core mechanisms and educational value.

3.1 Flipped Classrooms

The flipped classroom model reverses the traditional learning process by allowing students to access instructional content (e.g., videos, readings, animations) outside the classroom, while using class time for active learning tasks such as discussions, presentations, and peer collaboration. In primary English teaching, this model facilitates greater time for interactive speaking and listening activities in class. Teachers act as facilitators, guiding students through communicative exercises that deepen understanding and foster practical language use.

3.2 Gamified Learning Environments

Gamification incorporates game elements—such as points, levels, challenges, and leaderboards—into the learning process to motivate and engage students. Educational platforms like Kahoot, Quizlet, and Wordwall are widely used in primary English classrooms to reinforce vocabulary, grammar, and pronunciation. Gamified interaction fosters competitiveness and cooperation among students, while providing immediate feedback to support formative assessment.

3.3 Virtual Collaboration and Online Discussion

Digital platforms such as Google Classroom, Padlet, and Edmodo enable synchronous and asynchronous communication among students and teachers. In English classrooms, virtual collaboration promotes written interaction, storytelling, peer review, and multilingual exposure. Students can record short videos, share writing drafts, and receive feedback from peers or teachers, extending the learning space beyond physical boundaries.

3.4 AI-Assisted Teaching and Assessment

Artificial intelligence (AI) technologies, including voice recognition, natural language processing, and adaptive learning systems, provide personalized learning experiences in English education. Applications such as Duolingo, TalkAI, and iFlytek's AI writing assistants allow for individualized pronunciation practice, automatic writing correction, and language proficiency tracking. AI-based feedback systems can significantly improve students' oral and written communication skills by offering real-time, targeted suggestions.

4 Benefits and Challenges of IT-Based Interactive Models

While IT-enhanced interactive models offer a wide range of pedagogical benefits in primary English education, they are also accompanied by notable practical and ethical challenges that educators and institutions must proactively address.

From a pedagogical perspective, the most prominent benefit is the enhancement of student engagement. The integration of visual and auditory stimuli, interactive games, and multimedia content aligns well with the cognitive and behavioral characteristics of young learners, thereby increasing motivation and participation. Additionally, these models contribute to the improvement of language skills by providing students with repeated, contextualized practice that reinforces vocabulary, grammar, and pronunciation. Interactive classroom activities, supported by digital tools, encourage authentic communication, thus enhancing both speaking and listening proficiency. Furthermore, IT-based models support the development of learner autonomy. Self-paced learning platforms and personalized feedback mechanisms empower students to take greater responsibility for their learning processes, fostering independent study habits at an early age. Another key advantage lies in real-time assessment and feedback. Digital tools offer immediate performance analysis, enabling teachers to make timely, data-driven instructional adjustments that better support individual student progress.

Despite these advantages, the implementation of IT-supported interactive models is not without challenges. One significant issue is the level of teacher readiness. Not all educators possess the technical expertise or pedagogical training necessary to effectively integrate digital tools into interactive instruction, which can hinder the potential impact of these innovations. Additionally, the digital divide remains a serious concern, as unequal access to devices and reliable internet connectivity may exacerbate educational disparities, particularly in rural or under-resourced areas. There is also the risk of distraction and overreliance on technology. Without careful instructional design, students may become overly focused on superficial features of digital tools, detracting from meaningful language learning. Finally, issues surrounding data privacy and ethics must not be overlooked. The increasing use of educational platforms that collect and store student data necessitates strict adherence to data protection policies and responsible information management to safeguard learners' rights. Together, these challenges underscore the need for thoughtful planning, inclusive access strategies, and continuous evaluation in the adoption of IT-based interactive models.

5 Case Studies and Classroom Observations

To validate the theoretical and conceptual findings of this study, a series of case studies were carried out in three primary schools located in both urban and semi-urban areas. In each school, one of the interactive models—flipped

classroom, gamified learning, or AI-assisted teaching—was implemented over a six-week period. Data were collected through classroom observations, teacher interviews, and student surveys. The results revealed several consistent trends across different contexts. Students participating in gamified learning environments exhibited notably higher vocabulary retention and showed a greater willingness to speak in class, suggesting that competitive and playful elements can boost language output. The integration of AI tools led to significant improvements in students' pronunciation and noticeably reduced anxiety during speaking tasks, especially among more introverted learners. In the flipped classroom settings, teachers reported enhanced time efficiency, as more classroom time could be dedicated to interactive speaking and problem-solving activities, while students demonstrated increased autonomy and responsibility in preparing for lessons. Despite these benefits, several challenges were observed, including occasional technical malfunctions, uneven levels of student engagement during home-based learning, and a clear need for ongoing teacher training to maximize the effectiveness of these models. These findings support the argument that, when thoughtfully implemented and supported, IT-enhanced interactive models can meaningfully improve the effectiveness and quality of English instruction in primary schools.

6 Recommendations and Implications

To ensure the sustainable and effective use of interactive models in primary English classrooms, several key strategies are recommended. First, ongoing professional development is vital to equip teachers with the technical and pedagogical skills needed to integrate digital tools effectively. Second, interactive approaches must align with curriculum standards and learning goals to ensure instructional coherence. Third, schools should address equity issues by providing necessary digital infrastructure and support, particularly for disadvantaged students. Fourth, parental involvement should be encouraged through clear communication and guidance to support at-home learning. Finally, continuous evaluation—through classroom research, student feedback, and performance data—is essential to monitor effectiveness and guide improvement. Collectively, these strategies offer a practical framework for advancing IT-supported English education while addressing associated challenges.

7 Conclusion

The informatization of education presents a valuable opportunity to reshape the way English is taught in primary schools. Innovative interactive models, powered by information technology, have the potential to make learning more dynamic, inclusive, and effective. By fostering engagement, supporting individualized learning, and promoting communicative competence, these models address many of the limitations of traditional instruction. However, to fully realize their potential, thoughtful implementation, teacher empowerment, and systemic support are essential. Future research should continue exploring the evolving intersection of technology, pedagogy, and primary language education to ensure that every child has access to meaningful and transformative English learning experiences.

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