

Research on English Classroom Teaching Programs in Colleges and Universities Based on Wireless Communication Technology Support in the Context of 5G

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ABSTRACT

The purpose of this article is to investigate how 5G and wireless communication technologies (5G+WCT) might be applied to English language classroom programs in higher education. The paper describes the complimentary roles of 5G and wireless communication technologies in English language teaching, includes student data collecting and standardization as part of the pre-processing, and optimizes the teaching system using an enhanced ant colony algorithm (BACO). Furthermore, the thesis delineates diverse approaches to verify and assess the program's efficacy. Through the creation of cutting-edge instructional strategies and data collection techniques, this study fosters innovation in English language instruction in higher education. The study offers promise for real-world application and is significant for raising student success, instructional quality, and educational efficacy. However, since 5G technology is still developing, the results of this study could not be applicable in the future or would need to be updated.

KEYWORDS:

Wireless Communication Technology, Fifth-Generation (5G), Colleges and Universities, Integrated Classroom Learning Model

As technology continues to advance, more and more people are exploring the most effective methods of teaching foreign languages. In this context, multimedia networks play an increasingly important role in researching and creating new methods of linguistics education. In order to keep up with the dynamic character of contemporary lecture halls, universities need to modify their teaching strategies according to the new standards of the Ministry of National Education (Liu et al., 2021).

In recent years, an increasing number of students are relying on their teachers' advice for effectively using computer networks and multimedia technologies in the classroom. Traditional methods of teaching English to students have heavily relied on the teacher's demonstration (Baratè et al., 2019). The Internet provides a wealth of educational resources that surpass traditional classroom teaching in both breadth and depth (Cheng & Wei, 2021). Online multimodal education increases

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students' desire and ability to learn the target language by stimulating their visual and auditory senses (Huang et al., 2019). Students can reinforce their memory and increase their interest in learning the language by repeating new vocabulary they hear. Students enrolled in online English programs can review what they have previously learned and focus on strengthening weak areas at their leisure (Leung, 2020).

Online English learning programs have benefited from the rise of the Internet, the maturation of distance education commodities, and changes in student motivation. Research on online learner motivation needs to consider the characteristics of the online domain. Distance education students' lack of interest in online English programs has become a new hot topic in second language acquisition research. Mobile edge computing based architecture eliminates time and space constraints and facilitates 5G wireless LMS development (Shu, 2020).

Educational reforms have had a significant impact on teaching practices. A study surveyed university professors and students, testing them using questionnaires, computer analysis, and 5G Internet simulations. This study proposed a method for distributing learning resources that reduces energy consumption and increases the likelihood of resources reaching students. The Best Available Technology Optimization Algorithm (BOA) was used to optimize the transmission process (Sokkhey & Okazaki, 2020). The results of this study will be used to improve English language education at the university level, including increasing ESL students' access to high-quality online resources and recruiting more experienced teachers (Yi & Dan, 2020).

Literature on real-time data services reveals the intrinsic connection between data transmission, collection, management, and delivery. The selection of appropriate communication channels and protocols is crucial when transmitting wirelessly between devices connected to the 5G Internet and cloud computing centers (Cheng et al., 2021).

The purpose of this paper is to explore how 5G and wireless communication technology (5G+WCT) can be applied to English classroom teaching programs in higher education to provide higher quality teaching methods. The study includes collecting and standardizing student data as part of pre-processing, describing the role of 5G and wireless communication technologies as an English language teaching aid, and applying an improved ant colony algorithm (BACO) to optimize the teaching system. In addition, this paper proposes various methods to check and evaluate the effectiveness of the program. By developing innovative teaching methods and collection methods, it promotes the innovative development of English acquisition in higher education.

RELATED WORKS

Yusuf et al. examine the benefits of effective utilization of mobile technologies and inquiry-based teaching methods in Nigerian universities. The authors explore the techniques that guide undergraduate students to learn with digital support from mobile devices and wireless communication during their classroom activities and outside the classroom with the use of PDF and WAP technology (Yusuf et al., 2020). This research focused on blended learning and collaborative learning to develop English communication skills of the university students in an English Teaching Program. Mahawan et al. study the effect of blended learning with collaborative learning upon English communication skills of English teaching program students. The statistics employed were Means, Standard Deviation (SD), and t-test (Mahawan et al., 2020). Its objective is to help educators use social media to customize the classroom for all students. Syafi' studies Google Classroom as a learning platform for teaching writing. Awareness of the positive potentials of this learning style will allow Google Classroom to introduce a mixed learning approach in the classroom. The argument continues with Google Classroom presentation and the idea of mixed education using the platform (Syafi'i, 2020). Several computer-based programs and mobile-based applications can be utilized in teaching English. Alam et al. investigate the prospects of such measures in the context of BSMRSTU (Bangabandhu Sheikh Mujibur Rahman Science and Technology University). Participants were selected from the students

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