

Research on the Integration of Information and Communication Technology into Junior Middle School EFL Classroom

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Abstract: The present study adopts the classroom observation method to observe and analyze 15 junior middle school English exemplary lessons using the SAMR model as the analytical framework, aiming to investigate the status quo of the integration of information and communication technology and junior high school EFL classroom. The present study found that there have been varying degrees of technological integration behaviors in middle school English classrooms, but overall, they have not reached a deep level of integration, and there are problems with information technology applications remaining at a lower level, the structure of English classrooms not undergoing substantial changes, and the use of information technology in middle school English classrooms being neglected. It is recommended that middle school English teachers deepen their digital awareness and strengthen the design of digital teaching in their courses. The use of information technology in the classrooms should always adhere to the essential requirement of student development, and pay attention to the cultivation of students' thinking abilities such as reflection, evaluation, and summary supported by information technology.

Keywords: Information communication; Communication technology; English classroom research

1. Introduction

The deep integration of information technology and education is the core concept of the era of educational informatization. The deep integration of classroom teaching and information technology is an important way for foreign language teaching reform and a key factor in improving teaching quality in the new era. Whether it is the overall goals and requirements of educational informatization proposed in the Action Plan for Education Informatization 2.0, the digital empowerment action proposed in the Action Plan for Deepening the Reform of Basic Education Curriculum and Teaching, or the digital awareness and application proposed in the Teacher Digital Literacy, all demonstrate the importance of deep integration of information technology and education and teaching. What is the current situation of information technology application in middle school classrooms? How to develop the deep applications of information technology in order to further strengthen the integration of information technology and foreign language education? This study uses Dr. Ruben's SAMR model as the analytical framework to observe and analyze the 15 lesson examples of the 16th National Junior High School English Teacher Teaching Basic Skills Competition. It investigates the current application status of information technology in junior high school English classrooms and provides insights for the deep integration of information technology and junior high school English classrooms.

2. SAMR Model

The SAMR model, devised by Dr. Ruben, categorizes the integration of information technology into teaching into four levels: substitution, augmentation, modification, and redefinition. Substitution merely replaces traditional tools with technology, offering no significant improvement. Augmentation provides better functionality compared to traditional tools, such as using mobile apps for vocabulary memorization. Modification changes learning activities, breaking physical barriers, like asynchronous discussions on forums. Redefinition creates entirely new learning experiences, like MOOCs, revolutionizing traditional teaching methods. This study applies the SAMR model to analyze the integration of information technology in 15 exemplary middle school English classes,

offering insights into deepening this integration.

3. Research Design

3.1 Research Questions

- (1) What are the methods of integrating ICT into junior high school EFL classrooms?
- (2) What is the status quo of the integration between ICT and junior high school EFL classrooms?

3.2 Research Methodology

Classroom observation and time sampling track ICT usage in 15 junior high EFL lessons. Teachers' ICT use is categorized into SAMR levels: Substitution (S), Augmentation (A), Modification (M), Redefinition (R). Behaviors are recorded every 5 seconds, coded based on SAMR. New ICT behaviors receive unique codes. Duration exceeding 5 seconds is coded consistently.

3.3 Data Analysis

Through classroom observation and recording transcripts of high-quality junior high school exemplary EFL classes from across the country in 2022, the present study collected the frequency and proportion of each ICT-integrated application and conducted both qualitative and quantitative analyses to investigate the ways and extent to which ICT is integrated into junior high school English classrooms today.

4. Results and Discussion

4.1 Quantitative Analysis of ICT Integrated Applications

Based on the statistical data, it is evident that there are varying degrees of ICT integrated applications in junior high school EFL classrooms. Among them, the most frequent level of ICT integrated application is at the substitution level, followed by the augmentation level. There are relatively fewer instances of modification level ICT integrated applications, and no instances of redefinition level ICT integrated applications. As shown in Figure 1, the frequency of ICT integrated applications decreases significantly as the SAMR model levels increase. Overall, teachers' ICT integrated application levels in junior high school EFL classrooms mainly concentrate on the substitution and augmentation levels, with very few instances at the modification and redefinition levels.

As regards of the types of teacher information technology application in exemplary lessons. Teachers primarily use information technology to present graphics and text fill-ins, supplemented by videos, audios, and other digital resources to facilitate classroom progress. Additionally, countdowns, markers, projections, and multimedia-based classroom games are commonly used by junior high school English teachers to clarify knowledge points for students and meet the needs of teaching activities. This indicates that current English teachers can utilize digital and technological resources to organize teaching activities systematically, thereby enhancing student engagement and proactive communication.

Teacher dominance in technology application in high-quality classes. As indicated in Table 1, apart from multimedia-based classroom games, the use of information technology types such as graphic and text presentations, text fill-ins, video and audio playback, etc., is predominantly led by teachers, with students having limited opportunities to use ICT tools.

4.2 Qualitative Analysis of ICT Integrated Applications

To further explore the extent of ICT integration in junior high school EFL classrooms, the present study selected a typical lesson for analysis, focusing on the teacher's use of information technology during the class. Through case analysis, it was found that current junior high school English teachers tend to utilize information technology at lower levels, resulting in a lack of substantial changes in the structure of EFL classes and neglect in the use of information technology.

ICT use remains low. Puentedura (2008) suggests Modification level for shifting learning approaches, enabling student autonomy. Substitution and Augmentation levels merely replace tools, lacking student engagement. Case analysis shows teachers predominantly focus on these levels, neglecting task redesign to stimulate student enthusiasm for learning. There has been no substantial change in the structure of English classes. Overall, the current mode of information technology-based teaching by junior high school English teachers is relatively single, mainly based on multimedia such as PowerPoint. According to Table 2, there is still ample room for improvement in the utilization of information technology by junior high school English teachers to reform teaching modes. Teachers have not fundamentally changed the traditional teaching mode. Although they use information technology means in teaching activities, the classroom is still teacher-led, with teacher-led teaching as the main teaching method. The achieved information technology-based teaching mode only reaches the level of "looking like the thing but not the thing," failing to bring about a substantial change in the structure of English classes.

Neglect in ICT integration hampers skill development, evidenced by a focus on knowledge-based content over higher-order

thinking. Teachers use ICT for testing and imparting knowledge but lack emphasis on cultivating higher-order skills.

5. Pedagogical Implications

5.1 Improving Digital Design

On November 30, 2022, the Ministry of Education officially released the industry standard for “Teacher Digital Literacy,” providing guidance for the development of teachers’ digital literacy. The standard pointed out that digital application reflects the comprehensive ability of teachers to carry out various digital teaching activities. As an important part of digital application, digital teaching design is a prerequisite for implementing digital application. Strengthening digital teaching design and innovatively using a richer variety of digital resources and technologies to create conditions for students’ active learning can help realize the transition from teacher-centered “lecturing” to student-centered “I want to learn” classroom models.

5.2 ICT Integrated Application Serves Students’ Development

Deep integration of information technology with junior high school English classrooms emphasizes putting students at the center, highlighting their central role, and considering the ways and paths of integrating information technology with curriculum teaching depth from the perspective of student development. For instance, if teachers maintain a dominant position in the classroom and engage in dull knowledge transmission, it is detrimental to personalized student development and hinders the formation of a “self-directed, inquiry-based, collaborative” learning approach. As a common instructional model, “flipped classroom” fundamentally reinforces the student-centered approach, which can stimulate student enthusiasm, initiative, and creativity, thereby improving classroom effectiveness.

5.3 Fostering Students’ Higher-Order Thinking Skills with ICT Support

High-order thinking, crucial for problem-solving, is prioritized in Chinese curriculum. Junior high English classes should emphasize it alongside factual knowledge. Teachers must leverage digital resources for activities fostering reflection, evaluation, and summarization, enhancing students’ cognitive skills.

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