

Teaching grammar by using technologies: *unlocking language pedagogical potential*

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Abstract

Language learning is a complex cognitive process which involves learning various linguistic components, with grammar serving as a fundamental pillar. Traditionally, grammar teaching relied on rote memorization and textbook exercises, often divorcing learners from real-life language use. This paper explores the transformative impact of technology on grammar pedagogy, addressing the limitations of traditional methods. The integration of digital tools, gamification, virtual learning environments, and adaptive systems has redefined grammar instruction, fostering dynamic and engaging learning experiences. The paper discusses the implications for both students and teachers, emphasizing the need for a balanced approach that harmonizes language learning principles and technology. Recommendations for future research highlight emerging trends and the evolving landscape of technology-enhanced grammar teaching.

Keywords: *Teaching grammar, technology-enhanced learning, virtual learning environments, adaptive learning systems, pedagogical transformation*

1. Introduction

Language learning is a multifaceted cognitive journey, intricately weaving together various linguistic components, among which grammar stands as a fundamental pillar (Nassaji & Fotos, 2011; Novawan, 2011). Traditionally, the teaching of grammar followed a well-trodden path, relying heavily on rote memorization, repetitive drills, and exercises extracted from textbooks (Richards, 2005). This method, though prevalent, often left learners grappling with abstract rules divorced from real-life language use.

However, the contemporary language education landscape has been characterized by the rapid technological advancements which has contributed to the changes in paradigm of how grammar pedagogy can be executed (Celce-Murcia, 1991; Bikowski, 2018). This transformation reflects a departure from conventional methods toward more dynamic, engaging, and learner-centric approaches. This paper overviews the evolution of teaching grammar emphasizing its profound significance and the catalytic role of technology which plays essential in reshaping instructional practices, drawing insights from current literature that underscores the intricate relationship between technology and grammar teaching.

The significance of grammar in language acquisition cannot be overstated. It serves as the backbone of effective communication, providing learners with the tools to construct coherent sentences and convey meanings (Nassaji & Fotos, 2011; Novawan, 2011). Traditional grammar instruction, while aiming to instil these skills, often fell short in fostering practical application and a genuine understanding of language structure. The advent of technology in education has emerged as a catalyst for change in the realm of grammar pedagogy (Bikowski, 2018). The integration of digital tools, interactive platforms, and innovative applications has stimulated what can be done in the teaching of grammar. Contemporary language educators are leveraging technology to create a more dynamic and immersive learning experience.

Along with the development of technology, it is important to be aware of the inherent limitations of traditional approaches. Rote memorization, once the cornerstone of grammar instruction, often led to surface-level learning, with students memorizing rules without grasping their practical application (Novawan et al., 2022). Moreover, the static nature of textbook exercises failed to capture the dynamic and evolving nature of language use in real-world contexts. Technology, in its various forms, offers solutions to bridge this gap between theory and practice (Dooly & Sadler, 2013). Digital grammar applications and online platforms provide interactive exercises that simulate real-life language scenarios. Learners can engage in meaningful activities, receiving instant feedback that goes beyond mere correction, fostering a deeper understanding of grammatical concepts in context.

Furthermore, when in traditional learning visual aids play an important role (Novawan, 2010; Novawan, 2011), in the digital era, the incorporation of gamification and virtual learning environments introduces an element of play and exploration into grammar instruction (Shortt et al., 2023). By turning learning into a game, educators can stimulate the students' intrinsic motivation, making the process enjoyable and effective. Virtual environments, such as augmented reality (AR) and virtual reality (VR), allow learners to immerse themselves in language-rich scenarios, applying grammar rules organically (Jang et al., 2021).

However, amidst this wave of innovation, an important gap arises: the need to balance tradition and technology (Chapelle, 2003). While embracing technological advancements, language educators must ensure that the essence of grammar, as a structured system facilitating communication, is not ignored. The challenge lies in harmonizing the benefits of technology, such as personalized learning and interactive feedback, with the foundational principles of language learning and acquisition that have to be actualized in practice (Golonka et al., 2014).

As the literature posed, the changes in grammar pedagogy reflect a dynamic interplay between theoretical frameworks and technology (Golonka et al., 2014; Chapelle, 2003; Shortt et al., 2023; Jang et al., 2021; Dooly & Sadler, 2013; Bikowski, 2018). It is imperative to preserve the core principles of effective grammar learning while harnessing the potential of technology to enhance the learning experience. By addressing this crucial balance, educators can unlock the full potential of grammar pedagogy, equipping learners

with both the essential principles of language learning and the adaptive skills needed in the rapidly changing world.

2. Teaching grammar: *the what and why*

The significance of grammar teaching extends beyond linguistic correctness (Celce-Murcia, 1991; Ellis, 2006). It is a key element in fostering effective communication, enhancing writing skills, and promoting critical thinking. A strong command of grammar enables students to express ideas clearly and coherently, contributing to academic success and proficiency in various language skills.

As a powerful tool of communication, language serves as the backbone of all human communication including academic and intellectual exchange (Novawan et. al., 2022). Within the realm of language education, teaching grammar emerges as a pivotal endeavor, particularly for university students. Teaching grammar involves imparting knowledge about the structural elements of a language, encompassing rules and patterns that govern its use (Ellis, 2006). It goes beyond the mere identification of parts of speech and sentence structures; instead, it examines the areas of syntax, morphology, and semantics. The aim is to equip students with the skills needed to construct coherent and meaningful expressions, fostering effective communication and language proficiency (Hyland, 2019).

Academic Writing Competence

At the university level, academic writing is a fundamental skill that students must master. Proper grammar usage is crucial for constructing well-organized and articulate written assignments. Whether crafting essays, research papers, or theses, students need a solid understanding of grammar to convey complex ideas and arguments with precision.

Effective Communication

University education involves active participation in discussions, presentations, and collaborative projects. A strong command of grammar is indispensable for clear and effective communication. It enables students to express their thoughts articulately, fostering meaningful dialogues within the academic community.

Critical Reading and Analysis

In addition to producing well-written content, university students must engage critically with the vast array of texts they encounter. Understanding grammar enhances their ability to analyze written materials, identify diction, and extract meaning. This skill is particularly pertinent in disciplines that require extensive reading and comprehension.

Professionalism and Career Readiness

As students transition into their professional lives, effective communication becomes a hallmark of success. Employers value employees who can communicate clearly and professionally. A strong foundation in grammar equips university graduates with the linguistic skills needed to excel in various professional settings.

Mastery of Academic Conventions

Each academic discipline adheres to specific conventions and styles. Teaching grammar enables students to navigate these conventions, ensuring that their written work aligns with the expectations of their respective fields. Mastery of grammar contributes to the development of a scholarly voice and facilitates engagement with disciplinary discourses.

Enhanced Critical Thinking

The process of learning grammar is not just about memorizing rules; it involves analyzing language structures and making informed choices. This analytical aspect fosters critical thinking skills, as students must consider the nuances of language use and make conscious decisions about how to convey their ideas effectively.

Language Precision

Precision in language is vital for academic success. Teaching grammar helps students refine their language use, allowing them to convey precise meanings and avoid ambiguity. In academic writing, where precision is paramount, a nuanced understanding of grammar ensures that students can articulate their ideas with clarity.

Studies have revealed that communication skill, both written and oral, is intrinsically linked to academic and professional success and career readiness (e.g. National Research Council, 2012). Thus, grammar learning contributes to the success of students in navigating themselves to develop communication skill. The importance of teaching grammar for university students lies not only in its immediate relevance but also in its enduring impact on their journey toward linguistic proficiency and scholarly excellence. Teaching grammar to university students is not merely an academic exercise; it is a foundational aspect of their intellectual and professional development.

3. Approach to grammar teaching

Traditional methods has been often criticized for their mechanical nature which simplifies the complexity of language (van Lier, 2004; Novawan et al., 2022). Communicative Language Teaching (CLT) emphasizes the contextual use of grammar in real-life situations, fostering a more holistic understanding (Ellis, 2006; Celce-Murcia, 1991; Richards, 2005). Task-based language teaching (TBLT) incorporates grammar instruction within meaningful tasks, promoting active engagement and practical application (Littlewood, 2007).

Grammar instruction at the university level is a crucial component of language education, providing students with the skills necessary for effective communication and academic success. Unlike traditional methods that focused on rote memorization and drills, contemporary approaches aim to make grammar instruction engaging, relevant, and applicable to real-world contexts (van Lier, 2004; Novawan et al., 2022).

Contextual Relevance

One of the key principles in teaching grammar at the university level is ensuring contextual relevance (Ellis, 2006; Celce-Murcia, 1991; Richards, 2005; Littlewood, 2007). Instead of presenting grammar rules in isolation, instructors should embed them within authentic communicative contexts. This approach aligns with communicative language teaching (CLT) principles, emphasizing the use of language in meaningful situations. By incorporating real-life examples and scenarios, students can better grasp the practical applications of grammar in various contexts.

Task-Based Language Learning

Task-based language learning is a pedagogical approach that integrates grammar instruction into meaningful learning tasks (Littlewood, 2007). In the university setting, this could involve projects, presentations, or research assignments that require students to apply grammatical concepts. As claimed by van Lier (2004), this approach is an example of action-based learning which is considered essential in language learning. By engaging in the meaningful tasks, students not only enhance their understanding of grammar for communication but also develop essential skills such as critical thinking, problem-solving, and collaboration.

Technology Integration

Visual aids have been seen as a powerful media for learning language (Novawan, 2010) and particularly for learning grammar (Novawan, 2011). Therefore, incorporating technology into grammar instruction can enhance engagement and provide unlimited visual resources for students' learning. Digital platforms, grammar apps, and online exercises offer interactive opportunities for practice and immediate feedback (Kessler, 2018). Virtual learning environments, augmented reality, and gamification can make language learning more dynamic and appealing to university students, who are often accustomed to digital tools in their daily lives (Fardanesh et al., 2021; Novawan et al., 2024).

Explicit Instruction with Inductive Approach

While a communicative and task-based approach is valuable, providing explicit instruction is also essential (Ellis, 2006; Novawan, 2011; Littlewood, 2007; Celce-Murcia, 1991; Nassaji & Fotos, 2011). Language educators can adopt either a deductive approach or an inductive approach in guiding students to learn or discover grammatical patterns through guided, communicative, or awareness-raising tasks (e.g. Novawan, 2011). The university level allows for a more inductive ones with more in-depth exploration of grammatical structures and rules. This method encourages students to actively participate in the learning process and develop a deeper understanding of grammar rules.

Writing Workshops

Writing is a fundamental skill in university education, and integrating grammar instruction into writing workshops or clinic is highly effective. Language educators can guide students through the writing process, addressing grammatical issues in the context of

their own writing. Peer review sessions can also be valuable, allowing students to learn from each other and providing opportunities for collaborative learning (Nassaji & Fotos, 2011; Littlewood, 2007).

Authentic Materials

Using authentic materials such as articles, essays, and literature exposes students to real-world language use (Novawan, 2003). Analyzing authentic texts not only reinforces grammatical concepts but also exposes students to different writing styles and registers (Gilmore, 2007). This approach connects grammar to the broader context of language and helps students develop a more sophisticated understanding of grammar in actual use.

Individualized Feedback

Providing timely and individualized feedback is crucial in the university setting. Language educators should offer constructive feedback on written assignments, highlighting both strengths and areas for improvement. This personalized approach allows students to focus on specific aspects of grammar that need attention, promoting continuous improvement (Ellis, 2006; Ellis et al., 2006).

Cultivating a Positive Learning Environment

Creating a positive and inclusive learning environment is paramount (van Lier, 2004; Novawan et al., 2022). University students come from diverse linguistic backgrounds, and some may have had negative experiences with grammar instruction. Fostering a supportive atmosphere encourages active participation, risk-taking, and a willingness to learn from mistakes.

Teaching grammar to university students involves a combination of contextual relevance, task-based learning, technology integration, explicit instruction, writing workshops, authentic materials, individualized feedback, and cultivating a positive learning environment. By adopting these strategies, instructors can meet the diverse needs of university students and equip them with the grammar skills essential for academic and professional success.

4. Technology for teaching grammar

As technology permeates every aspect of modern life of university students, its integration into education becomes imperative (Chapelle, 2003; Bikowski, 2018; etc). In the realm of grammar instruction, technology offers innovative tools and platforms that cater to diverse learning styles and promote interactive learning experiences (Bikowski, 2018; Novawan et al., 2021).

Digital Grammar Apps and Platforms

A plethora of grammar-focused applications and online platforms have emerged, providing interactive exercises, quizzes, and real-time feedback (Castillo-Cuesta, 2020). Apps using Artificial Intelligent (AI) like Language Tutoring System (LTS), Automated

Writing Evaluation (AWE), and Automated Error Detection (AED) offer personalized learning experiences, addressing individual strengths and weaknesses (Novawan et al., 2024). These tools not only enhance grammar skills but also make learning engaging and accessible.

Gamification and Virtual Learning Environments

Gamification introduces an element of play into grammar instruction, turning learning into an immersive experience (Chen, 2016; Novawan et al., 2024; Castillo-Cuesta, 2020). Virtual learning environments, such as virtual reality (VR) and augmented reality (AR), create simulated scenarios for practicing grammar in context (Draxier et al., 2020; Chen, 2016). These technologies cater to the visual and kinesthetic learning preferences of students, fostering a more comprehensive understanding of grammatical concepts, or more than what is suggested in the notion of visual grammar learning (Novawan, 2011).

Corpus Linguistics and Natural Language Processing

Advancements in corpus linguistics and natural language processing (NLP) contribute to a deeper understanding of language patterns for grammar learning (Chapelle, 2003; Clark et al., 2012). Tools like concordances and language corpora enable students to explore authentic language use, promoting a data-driven approach to grammar instruction (Gilquin & Granger, 2010). NLP applications, such as chatbots and language processing software, offer interactive platforms for students to practice grammar in realistic conversational contexts (Huang et al., 2022; Novawan et al., 2024).

Adaptive Learning Systems

The implementation of artificial intelligence (AI) in adaptive learning systems tailors grammar instruction to individual student needs (Chen et al., 2022). These systems analyze learner performance, identify areas of difficulty, and provide targeted exercises and feedback. This personalized approach enhances the efficiency of grammar instruction by addressing specific learning gaps.

5. Conclusion

As discussed in this paper, teaching grammar with technology represents a significant change on how teachers can teach language and particularly grammar. The integration of digital tools, gamification, virtual learning environments, corpus linguistics, and adaptive learning systems has redefined grammar instruction, making it more dynamic, engaging, and tailored to individual needs (Kessler, 2018; Fardanesh et al., 2021; Novawan et al., 2024; Chapelle, 2003; Bikowski, 2018; etc).

The adoption of technology in grammar teaching equips students with not only linguistic proficiency but also valuable digital literacy skills (Novawan et al., 2019; Kessler, 2018). The interactive and adaptive nature of these tools promotes self-directed learning, enabling students to take ownership of their language acquisition journey (Novawan et al., 2019). Furthermore, exposure to diverse technological platforms prepares

students for the demands of the digital age, enhancing their overall academic and professional readiness (National Research Council, 2012). Language educators play a pivotal role in navigating the intersection of grammar instruction and technology. Continuous professional development is essential to empower teachers with the skills to effectively integrate technology into their pedagogical practices (Novawan et al., 2024).

The evolving landscape of technology and education necessitates ongoing research to explore emerging trends and assess the long-term impact of technology-enhanced grammar teaching. Areas of interest include the effectiveness of specific applications, the role of AI in personalized learning, and the development of comprehensive frameworks for integrating technology into grammar teaching. The synergy between linguistic principles and innovative technologies not only enhances grammatical competence but also cultivates digital literacy skills essential for the 21st-century learning.

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