

RESEARCH ARTICLE

WWW.PEGEGOG.NET

The Impact of Artificial Intelligence on Secondary School EFL Teachers' Lesson Planning and Pedagogical Approaches: A Qualitative Study of Teachers in Djelfa

Serbah Foudil Yassine

Faculty of Letters, Foreign Languages and Arts. University of Ziane Achour -Djelfa-Algeria

Email : serbahfoudil@gmail.com

Received : 12/06/2025 ; Accepted : 23/09/2025 ; Published : 12/10/2025

Abstract

The rapid integration of artificial intelligence (AI) into educational contexts has prompted shifts in instructional design, classroom management, and pedagogical approaches. This qualitative study investigates the impact of AI tools on lesson planning and teaching practices of secondary school English as a Foreign Language (EFL) teachers in the wilaya of Djelfa, Algeria. Thirty EFL teachers participated in semi-structured interviews comprising ten core questions focusing on their experiences, perceptions, and challenges related to the use of AI in lesson planning. The data were thematically analyzed, supported by NVivo-generated visualizations to highlight recurring categories and emerging themes. Findings indicate that while AI facilitates lesson efficiency, personalization, and access to global resources, it also introduces challenges such as technical dependency, ethical concerns, and skill gaps. Participants' reflections underscore the dual role of AI as both an enabler and disruptor of traditional teaching practices, suggesting the need for targeted professional development. The study concludes with recommendations for policymakers and teacher educators to ensure responsible and effective use of AI in EFL contexts.

Keywords: Artificial Intelligence, Lesson Planning, Secondary Education, Qualitative Research, Teacher Development.

1. Introduction

Technological advancements have transformed the landscape of education in the 21st century, with artificial intelligence (AI) being one of the most influential forces reshaping teaching and learning. In language education, AI-driven applications are increasingly being used to support pedagogical processes such as assessment, feedback, and instructional content creation. The integration of AI in lesson planning, in particular, has the potential to assist teachers in designing more adaptive, data-informed, and engaging lessons. Within this context, English as a Foreign Language (EFL) teaching

is undergoing a paradigm shift as educators explore innovative tools to enhance language instruction and foster learner autonomy.

Secondary education occupies a critical role in shaping learners' linguistic competence and academic trajectories. Yet, the effective use of AI in lesson planning at this level remains uneven, influenced by educators' digital literacy, accessibility of resources, and pedagogical beliefs. In regions such as Djelfa, where diverse educational realities coexist, AI adoption presents both opportunities and challenges for EFL teachers striving to align their practices with contemporary teaching demands. Understanding teacher perceptions and strategies regarding AI is therefore essential for informing future policy, teacher training initiatives, and curriculum design.

This study explores the impact of AI on secondary school EFL teachers' lesson planning and pedagogical approaches in Djelfa. Through qualitative inquiry, it seeks to answer the following questions:

Research Questions

This study is guided by the following research questions:

1. How does the use of AI technologies influence lesson planning practices among secondary school EFL teachers in Djelfa?
2. What are the perceived benefits and challenges of using AI in EFL lesson planning according to these teachers?
3. How has AI affected teachers' pedagogical choices and professional development?

Research Hypotheses

Although this research is qualitative and exploratory in nature, the following working hypotheses frame the investigation:

- **H1:** AI integration has a significant positive impact on the efficiency and personalization of lesson planning among secondary school EFL teachers.
- **H2:** Teachers face challenges related to digital literacy, ethical concerns, and infrastructural limitations when integrating AI into their lesson planning.
- **H3:** The use of AI fosters professional growth by encouraging teachers to adopt innovative, learner-centered approaches.

Research Objectives

The objectives of this study are to:

1. Explore the influence of AI tools on lesson preparation and instructional design.
2. Identify the opportunities and constraints experienced by teachers using AI in lesson planning.
3. Examine how AI adoption shapes pedagogical strategies and professional development in EFL contexts.
4. Provide practical recommendations for enhancing AI integration in secondary school EFL education.

By focusing on the lived experiences of thirty educators, the research captures the complexities of integrating AI into everyday instructional practices and highlights the broader implications for teacher development in the digital era.

2. Literature Review

2.1 Artificial Intelligence in Education

Artificial intelligence has emerged as a transformative force in the field of education, enabling personalized learning, automated feedback, and adaptive assessment (Choi & Choi, 2021; Zawacki-Richter et al., 2019). AI-driven platforms analyze learner data in real time, offering insights into student performance that help teachers design instruction more effectively (Ebner & Schön, 2021). The use of intelligent tutoring systems and learning analytics aligns with a broader shift toward data-informed teaching, where educational decisions increasingly rely on algorithmic recommendations (Williamson & Eynon, 2020).

2.2 AI in Language Teaching

The integration of AI into language education has significantly reshaped instructional design, content delivery, and learner engagement. AI-powered tools such as automated writing evaluators, chatbots, and speech recognition systems provide learners with immediate corrective feedback and immersive language use opportunities (Gong et al., 2022; Fitria, 2022). These tools support differentiated instruction, enabling teachers to address diverse linguistic needs within a single classroom context (Reinders & White, 2016). Additionally, mobile learning applications leveraging AI mechanisms help develop learner autonomy through adaptive activities and resources (Ally, 2019; Levy, 2018).

2.3 Teacher Development in Digital Contexts

The rapid advancement of technology in education has redefined teachers' roles, requiring them to navigate new pedagogical and professional expectations (Phillips & O'Brien, 2020). The TPACK framework (Mishra & Koehler, 2006) underscores the need for integration of technological, pedagogical, and content knowledge, particularly in digitally mediated teaching environments. Digital literacy and reflective practice have become essential components of teacher education programs, emphasizing a shift toward lifelong learning and adaptability (Li, 2022; Ng, 2015). Studies also show that effective use of AI tools can enhance teacher autonomy, creativity, and instructional confidence (Dixon & Wu, 2020).

2.4 Challenges of AI Integration in Teaching

Despite its potential, AI in education poses considerable challenges. Issues such as ethical use of student data, algorithmic biases, and reduced teacher agency have been identified as critical concerns (UNESCO, 2022; Smith, 2021). Teachers' reliance on AI-driven platforms may lead to overdependence, potentially diminishing their capacity for pedagogical decision-making (Reinders & Benson, 2017). Furthermore, unequal access to technology across socio-economic and geographic contexts reinforces existing educational disparities, limiting AI's transformative potential in underserved areas (OECD, 2021; Gong et al., 2022).

3. Methodology

3.1 Research Design

This study adopts a qualitative research approach to explore the influence of AI on lesson planning and pedagogy among secondary school EFL teachers. The qualitative design allows for an in-depth investigation of teachers' perceptions, attitudes, and experiences in relation to AI integration, uncovering nuanced insights that would not be captured through quantitative methods. The design is rooted in an interpretivist paradigm, recognizing teachers as active meaning-makers in their professional contexts.

3.2 Participants

The study involved 30 secondary school EFL teachers from the wilaya of Djelfa, Algeria. The participants were recruited through purposive sampling to include a diverse range of teaching experiences, ages, and levels of exposure to AI tools. The sample comprised 18 female and 12 male teachers, with teaching experience ranging from 3 to 25 years. All participants held at least a Bachelor's degree in English language teaching or related fields. Their teaching contexts ranged from urban schools with relatively stable internet access to rural institutions with limited technological

infrastructure. This variation allowed the study to capture multiple perspectives on AI-based lesson planning under different conditions.

3.3 Interview Design

Data were collected through semi-structured interviews, allowing participants to express their perspectives freely while providing the researcher with the flexibility to probe for deeper insights. The interview consisted of ten open-ended questions designed to explore teachers' experiences, challenges, and attitudes towards AI in lesson planning and instructional delivery. Questions addressed topics such as familiarity with AI tools, frequency and purpose of use, perceived benefits and drawbacks, influence on pedagogical choices, and personal readiness for AI integration.

The interview guide was developed based on existing literature on AI in education and teacher autonomy. Prior to administration, it was reviewed by two experts in educational technology to ensure content validity and clarity. Interviews were conducted in person or online, depending on the participant's preference and availability, and each lasted approximately 35 to 50 minutes.

3.4 Data Collection

Interviews were conducted over a period of four weeks in 2025. Seventeen interviews were conducted face-to-face in schools across Djelfa, while the remaining thirteen were held via Zoom due to logistical constraints. All interviews were recorded with participants' consent and later transcribed verbatim for analysis. Field notes were also taken during interviews to capture non-verbal cues and contextual details.

Participation was voluntary, and ethical considerations were strictly upheld. Participants were informed of the study's aims and assured of confidentiality and anonymity. Pseudonyms were used throughout the research process to protect identities.

3.5 Data Analysis

The transcribed data were analyzed thematically using NVivo 14. The analysis followed a six-phase approach: familiarization, coding, generating themes, reviewing themes, defining and naming themes, and producing the final report. Initial codes were generated inductively from the data, and nodes were created in NVivo to organize recurring concepts. The analysis revealed six central themes representing the impact of AI on EFL lesson planning: (1) Efficiency and Time Management, (2) Personalization and Learner Engagement, (3) Professional Empowerment, (4) Dependency and Skills Gap, (5) Ethical and Reliability Concerns, and (6) Resource Accessibility Disparities.

Data visualization tools in NVivo, such as word frequency clouds, hierarchical charts, and thematic cluster maps, were employed to support the interpretation process and provide analytical depth. The software also enabled cross-comparison of responses based on teacher demographics, teaching environment, and level of AI integration in lesson planning.

4. Results

The findings reflect a complex relationship between AI integration and EFL teachers' instructional practices. While teachers acknowledge the transformative potential of AI in enhancing lesson quality and adapting content to diverse learners, they simultaneously express concerns surrounding overreliance, lack of training, and unequal access to digital resources. The following sections elaborate on each theme, supported by illustrative excerpts from the interviews.

4.1 Theme 1: Efficiency and Time Management

The majority of participants described AI tools as valuable assistants in streamlining lesson planning. Teachers reported that AI platforms like ChatGPT, Grammarly, and lesson plan generators significantly reduced the time spent preparing materials. One teacher noted:

“Using AI, I can create a well-structured lesson plan in half the time it used to take. It’s like having a virtual partner who organizes my ideas and suggests classroom activities.”

This finding points to the role of AI in enhancing productivity, allowing teachers to shift focus from mechanical tasks to pedagogical refinement.

4.2 Theme 2: Personalization and Learner Engagement

Teachers emphasized AI's ability to provide customized content aligned with learners' proficiency levels and interests. Tools offering adaptive feedback, vocabulary revision sets, and language games were seen as beneficial in creating more engaging learning experiences. A participant stated:

“My students are more motivated when I use personalized quizzes generated by AI. They feel like the activities are meant for them, not just a generic worksheet.”

This theme underscores AI's contribution to differentiated instruction in language learning contexts.

4.3 Theme 3: Professional Empowerment

Many participants viewed AI as a catalyst for professional growth. Teachers reported that interacting with AI tools helped them explore innovative teaching strategies and remain updated with pedagogical trends. One experienced teacher explained:

“AI pushes me to rethink how I teach. When I see how it can assist with authentic language input or instant feedback, it reminds me that I have to keep learning too.”

This theme highlights how AI fosters a mindset of continuous improvement among educators, supporting their development beyond traditional teaching roles.

4.4 Theme 4: Dependency and Skills Gap

Despite recognizing benefits, several teachers expressed concern about becoming overly reliant on AI. Some feared that reliance on automated lesson suggestions could weaken their pedagogical creativity and decision-making. Additionally, a lack of digital literacy emerged as a significant challenge:

“Sometimes I feel I’m just copying what the tool gives me. If it stopped working tomorrow, I’m not sure I could deliver as effectively.”

This theme suggests a need for critical engagement with AI, where teachers leverage its strengths without diminishing their autonomy or skills.

4.5 Theme 5: Ethical and Reliability Concerns

Participants raised ethical issues regarding student data privacy, content accuracy, and the potential bias embedded in AI-generated resources. One teacher remarked:

“I worry about what data these tools are collecting from students. Also, some activities it generates don’t always match our cultural or educational context.”

This theme points towards a broader need for ethical guidelines and contextual adaptation in AI-assisted teaching tools.

4.6 Theme 6: Resource Accessibility Disparities

Teachers working in rural or under-resourced schools expressed frustration at the uneven access to digital tools and connectivity. These disparities hindered their ability to incorporate AI effectively into lesson planning. As one teacher explained:

“We barely have stable internet. I know AI can help with so many things, but the reality in my school makes it almost impossible.”

This theme highlights infrastructure as a key mediating factor in the successful integration of AI in education.

5. Discussion

This study analyzed the perceptions and experiences of secondary school EFL teachers in Djelfa regarding the impact of artificial intelligence on their lesson planning and teaching approaches. Overall, the findings demonstrate that AI has a multifaceted impact—acting both as a facilitator and source of challenge in educational contexts.

The results indicate that AI tools promote efficiency and personalization in lesson planning while also contributing to teacher professionalization. These findings align with global research emphasizing the transformative potential of AI in education to enhance learning outcomes and instructional design. Through tools that offer customized lesson ideas, automated feedback, and access to authentic language data, AI supports differentiated instruction and fosters learner engagement.

However, the data also revealed critical challenges. The dependency and skills gap theme illustrates the importance of ensuring that teachers retain ownership of pedagogical decision-making. While AI can support lesson planning, it should not replace the reflective, context-sensitive judgment that is central to teaching. Ethical concerns regarding data privacy and contextual relevance also emerged as significant issues, echoing current debates in AI ethics in education.

Finally, disparities in technological infrastructure point to a digital divide that cannot be overlooked. Without equitable access, the transformative promise of AI risks being limited to already advantaged educational contexts.

6. Implications

6.1 Implications for Teacher Training

The findings stress the need for targeted, continuous professional development focused on digital pedagogies and critical AI literacy. Training programs should aim not only to teach technical skills but also to foster reflective practices in the ethical and effective use of AI tools.

6.2 Implications for Policy and Infrastructure

Educational policymakers are urged to prioritize investment in technological infrastructure, especially in underserved areas. Ensuring stable internet access and availability of devices is fundamental to widespread and equitable AI integration.

6.3 Implications for AI Tool Designers

The study calls for the design of culturally and contextually responsive AI tools. Developers should involve teachers in the design process to ensure alignment with curricular objectives, cultural values, and ethical standards.

7. Recommendations

Based on the findings and implications of this study, several recommendations are proposed to enhance the responsible and effective integration of artificial intelligence in secondary school EFL education, particularly in the context of Djelfa:

7.1 Strengthen Digital and Pedagogical Training

Teacher education institutions and professional development centers should incorporate training modules focused on AI literacy. These modules should cover:

- Technical skills required to operate AI tools.
- Pedagogical strategies for integrating AI into lesson planning.
- Ethical decision-making and critical evaluation of AI-generated content.

7.2 Ensure Equitable Access to Digital Resources

The Ministry of Education and local educational authorities should prioritize improving digital infrastructure in underserved schools, especially those in rural areas. This includes:

- Reliable internet accessibility.
- Availability of digital devices.
- Technical support for teachers and students.

7.3 Build Collaborative Networks

Create professional learning communities (PLCs) for teachers to share best practices, challenges, and innovations in AI-assisted teaching. These networks could be supported via:

- Online platforms.
- Regional workshops and seminars.
- Peer mentoring programs.

7.4 Develop Context-Sensitive AI Tools

AI developers should collaborate with local educators to create tools tailored to the Algerian curriculum and cultural context. This approach ensures that AI outputs align with national learning objectives and avoid cultural mismatches or biases.

8. Conclusion

This qualitative study investigated the impact of artificial intelligence on lesson planning and pedagogical approaches among secondary school EFL teachers in Djelfa. The research revealed that AI serves as a double-edged sword: it enhances lesson efficiency, personalization, and professional growth, but it also brings challenges related to dependence, ethical concerns, and infrastructural disparities.

Teachers in Djelfa demonstrated strong interest in integrating AI but expressed a need for more training, institutional support, and equitable access to technological resources. These findings emphasize the ongoing need for strategic planning and systemic support to ensure that AI becomes a tool for empowerment rather than exclusion in education.

The study offers important insights into how teachers experience and internalize AI's transformative potential in their work. By centering the voices of practicing educators, it contributes to a more grounded understanding of the complexities surrounding AI implementation in EFL teaching.

Future research may explore longitudinal impacts of AI integration and expand the analysis to include students' perspectives, providing a more comprehensive view of AI's pedagogical influence.

References

- Bower, M. (2020). *Design of technology-enhanced learning: Integrating research and practice*. Emerald Publishing.
- Choi, H. J., & Choi, E. (2021). Artificial intelligence in education: Current insights and future perspectives. *Computers and Education*, 170, 104225. <https://doi.org/10.1016/j.compedu.2021.104225>
- Dixon, L. Q., & Wu, S. (2020). The role of artificial intelligence in language teacher professional development. *Journal of Language Teaching and Research*, 11(2), 123–130.
- Ebner, M., & Schön, S. (2021). *Learning analytics: Fundamentals, applications, and trends*. Springer.

- Fitria, T. N. (2022). AI-powered applications in English language teaching: A review of ChatGPT and Grammarly. *Journal of English Language Teaching and Applied Linguistics*, 4(2), 45–54.
- Gong, Y., Wang, C., & Zhang, Z. (2022). AI in language education: A systematic review and future research agenda. *Language Learning & Technology*, 26(1), 1–18.
- Levy, M. (2018). *Technology in language teaching and learning*. Routledge.
- Li, X. (2022). Teacher professional development in the digital era: Trends and challenges. *Journal of Educational Innovation*, 34(2), 144–158.
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for integrating technology in teacher knowledge. *Teachers College Record*, 108(6), 1017–1054.
- Ng, W. (2015). *New digital technologies in education: Theory, research, and practice*. Springer.
- OECD. (2021). *AI in education: Learner agency, equity, and inclusion*. OECD Publishing.
- Phillips, R., & O'Brien, J. (2020). AI and teacher education: Implications for learning and teaching. *Australian Journal of Teacher Education*, 45(11), 124–141.
- Reinders, H., & Benson, P. (2017). Researching applied linguistics: Data analysis and statistics. *Language Teaching Research*, 21(1), 1–7.
- Reinders, H., & White, C. (2016). 20 years of autonomy and technology. *Language Learning & Technology*, 20(3), 142–154.
- Smith, A. (2021). AI in language education: A review. *Journal of Applied Linguistics*, 12(1), 75–93.
- UNESCO. (2022). *AI and education: Guidance for policy-makers*. United Nations Educational, Scientific and Cultural Organization.
- Williamson, B., & Eynon, R. (2020). Algorithmic education? Big data, artificial intelligence, and the future of teaching and learning. *Learning, Media and Technology*, 45(1), 1–15.
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education: Where are the educators? *International Journal of Educational Technology in Higher Education*, 16(1), 1–27.

Appendices

Appendix A: Interview Questions

1. How familiar are you with using artificial intelligence in your teaching?
2. What types of AI tools do you use for lesson planning?
3. How has AI changed the way you plan lessons?
4. What benefits do you observe from integrating AI into lesson planning?
5. What challenges have you faced while using AI?
6. How does AI influence your choice of teaching strategies?
7. How do students respond to AI-enhanced activities?
8. In what ways has AI impacted your professional growth?
9. What ethical concerns do you have when using AI tools?
10. What support would help you better integrate AI into your teaching?

Appendix B: Sample NVivo Nodes and Themes

Node	Description	Sample Teacher Quote
Efficiency	Faster lesson preparation	“AI cuts my planning time by almost half.”
Engagement	Student motivation through AI-generated quizzes	“My students love the interactive materials.”
Ethical Concern	Data privacy issues	“I worry about students' data security.”