

ChatGPT vs EFL Pre-service and In-service Teacher's Lesson Planning

Luisa María Vallejo Moreno

Supervisor

Dr. María Eugenia Guapacha Chamorro

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DEDICATION AND ACKNOWLEDGEMENTS

This paper embodies a journey of effort, challenges, and small triumphs. Every word and idea written in this document bears witness to my dedication and demonstrates each endeavor, no matter how small, leads to a reward.

I am deeply grateful to the one who quietly guided my steps, filling me with the strength and wisdom to keep moving forward.

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ABSTRACT

The increasing use of artificial intelligence (AI) and language models, such as OpenAI's ChatGPT, has impacted educational settings, particularly language teaching. This research, emerging from a critical literature review, highlights the need to explore AI's application in lesson planning, especially in second language teaching in a Colombian context. The study compared AI-generated lesson plans with those created by four EFL pre-service teachers and two in-service teachers and explored their perceptions of AI in lesson planning. Using a qualitative descriptive design, data was collected over six months through documentary analysis and interviews. The analysis included 21 lesson plans: ChatGPT ($n = 3$), pre-service teachers ($n = 12$), and in-service teachers ($n = 6$), using a checklist and documentary analysis to identify common and different patterns and structures in lesson planning (e.g., warmups, activities, assessments) and methodologies.

The findings showed that the lesson plans created by pre-service teachers, in-service teachers, and ChatGPT shared a similar structure and components such as *Context or lesson details, Objectives, Warm-up, Pre-task, Task, Post-task, Closure, Resources, Time, Evaluation, and Homework*. As to methodologies, ChatGPT typically implements skills-based and PPP approaches, whereas teachers implement TBLT. Regarding teachers' perceptions of AI in lesson planning, pre-service and in-service teachers recognized the benefits of AI in lesson planning, especially for efficiency and organization. However, teachers expressed concerns about AI's lack of flexibility, personalization, and the risk of over-dependence. While pre-service teachers were more open to using AI, in-service teachers emphasized the need for human adaptability. Ethical concerns about creativity and human interaction in the classroom were also noted. AI can support lesson planning but cannot replace human insight, adaptability, and connection in teaching.

Keywords: *Artificial Intelligence, ChatGPT, Comparative Study, EFL pre-service teachers, EFL in-service language teachers, Lesson Planning.*

CHAPTER 1 INTRODUCTION

1.1 Chapter Overview

The present study aims to identify similarities and differences between AI-generated lesson plans and those created by EFL pre-service and in-service teachers as well as the teachers' perceptions of AI in lesson planning. In this chapter, I introduce the relevance of investigating the use of AI in L2 lesson planning and EFL pre-service and in-service teachers' perceptions of its use. I present the research problem, research questions, and the pedagogical and methodological contributions of the present investigation to our local and national contexts in lesson planning.

1.2 ChatGPT vs EFL Teacher's Lesson Plans

In the digital scenario shaped by emerging technologies, the integration of artificial intelligence is profoundly influencing our daily experiences. One of the most used artificial intelligence tools is ChatGPT (Chat Generative Pre-Trained Transformer), introduced by OpenAI in November 2022. ChatGPT garnered millions of users within days of its presentation (Firat, 2023). This tool boosts the effectiveness of user experiences by delivering faster and more precise responses due to its advanced natural language processing (NLP) technology, which challenges traditional artificial intelligence systems (Deng & Lin, 2023). Notably, within a short time since its release, studies have explored its application in various fields such as physics, education, medicine, communication, and history, among others (Liu et al., 2023).

In education, one area where ChatGPT can be explored is lesson planning. Lesson plans are essential for effective teaching as they act as a roadmap and record teachers' goals and methods (Jensen, 2001). In this sense, artificial intelligence could be used to generate lesson plans for a variety of subjects, participants, and contexts, assuming a crucial role in foreign language teaching and leading to a significant evolution in the conventional method of lesson plan design.

Internationally, research has explored diverse applications of AI across different educational settings and disciplines. In a study involving Physical Education pre-service teachers in South Korea, ChatGPT proved to be an asset during lesson planning, facilitating a deeper understanding of students (Ha, 2023). Ha (2023) emphasizes that the integration of generative artificial intelligence, such as Chat GPT, could be beneficial in initial teacher training and should be considered in the formation of future educators. Similar findings were

reported by Bruneau et al., (2023), who concluded that ChatGPT can significantly assist physics teachers in a Vietnamese school, offering them valuable resources, solutions, and support to enhance their teaching effectiveness. Specifically, concerning the utilization of ChatGPT for lesson planning in foreign language teaching, Lou (2023) observed a favorable perception of its use for gathering resources to enhance EFL classes in a Malaysian Primary School.

In Colombia, there is limited research on integrating AI in lesson planning. Previous studies on lesson planning have predominantly focused on the exploration of teachers' lesson-planning practices, perceptions, and experiences across diverse contexts. In the realm of artificial intelligence, researchers such as Cabrera (2022) and Moreno (2019) presented artificial intelligence (AI) as an essential complement in education, focusing on its role as a supplementary tool rather than a replacement for human interaction. While the potential alliance between technology and teaching is acknowledged, there is a need for further research, due to the lack of studies comparing lesson planning between in-service and pre-service teachers with artificial intelligence such as ChatGPT. Furthermore, the present study is particularly pertinent in the field of English as a Foreign Language (EFL) in the context of a public university in the country, as it addresses AI integration in EFL teaching and provides a picture of how teachers can adopt new technologies, thereby enhancing their practice and their students' learning experience.

The need for studies in this area has become a significant research problem. Since this phenomenon has yet to be investigated, it is unclear whether artificial intelligence (AI) is useful and reliable for lesson planning. With this knowledge, evaluating and improving existing teaching methodologies or adequately integrating new technologies into educational practices is easier. We have yet to learn how these in-service and pre-service teachers plan their lessons or how effective these practices are. Moreover, there is an urgent need to study this phenomenon in the public sector, as resources and access to technology may be limited. This research will address a significant gap in existing literature and provide practical insights for AI implementation in public education.

Due to the scarcity of research on AI's role in education, there exists a significant opportunity to investigate its application, particularly in the domain of lesson planning. The specific context of Colombia presents a noticeable research gap, requiring exploration into how ChatGPT can influence lesson planning for EFL teachers. In contrast to previous international studies that covered mainly a single group of teachers, this research investigated a small group

of both in-service and pre-service teachers. Thus, the potential benefits and challenges of integrating ChatGPT into lesson planning will be discussed, bringing valuable insights into our local educational context.

This study aims to fill a gap by exploring the integration of artificial intelligence, more specifically ChatGPT, in language teaching in Colombia. This research addresses the evident need to understand how AI-driven models like ChatGPT can influence traditional methods of lesson planning and teaching in our specific educational context. By exploring the potential implications of AI in education, this study offers valuable insights into how these technologies can support or challenge EFL teachers. Furthermore, it also discusses how crucial it is for pre-service and in-service teachers to adjust to and embrace innovative tools for lesson planning.

1.3 Context

In Colombia, English language learning is a national priority, reflected in policies such as the National Bilingualism Program and curriculum guidelines that promote communicative approaches like Task-Based Language Teaching (TBLT). However, despite these efforts, there is a gap between policy objectives and classroom implementation, particularly in higher education. At Universidad del Valle, where this study takes place, pre-service and in-service EFL teachers face challenges in lesson planning due to limited resources, time constraints, and varying levels of pedagogical training. These challenges highlight the need to explore new tools that can support teachers in this process.

The implementation of educational technology has introduced new tools to support teachers, including AI applications such as ChatGPT. While AI has been explored for language learning, its potential role in lesson planning remains understudied, particularly in the Colombian EFL context. A debate regarding the quality of AI-generated lesson plans arises, questioning how they compare to those created by human teachers, and whether they align with existing teaching methodologies and theories. Moreover, teachers' perceptions of AI in lesson planning regarding its usefulness, limitations, and ethical considerations remained unexplored.

1.4 Statement of the Problem

Integrating AI-based language models, such as ChatGPT, in education involves significant challenges, as these models can generate content that closely resembles human productions. Although research in this area exists, most of it primarily concentrated on identifying the benefits of this instrument for teachers. However, research contrasting AI with human-produced material is a noticeable issue in the Colombian setting. This lack of literature

hinders our understanding of the differences and similarities between these productions, their implications, and the perspectives of EFL teachers. Addressing this problem is essential for comprehending to what extent AI can benefit or challenge in-service and pre-service teachers and for further exploring the role of AI in education.

1.5 Research Objectives

1.5.1 Main Research Question

What are the similarities and differences between lesson plans generated by ChatGPT and those of pre-service and in-service EFL school teachers and their perceptions on AI in lesson planning?

1.5.2 Specific Research Questions

- What components and approaches can be identified in the lesson plans designed by pre-service and in-service teachers and Chat GPT?
- What similarities and differences can be identified in the lesson plans and methodologies developed by pre-service and in-service teachers and Chat GPT?
- What are pre-service and in-service teachers' views of the use of AI in lesson planning?

1.6 Significance of Study

This study holds significant relevance in our educational context and language teaching for several reasons. Firstly, it offers valuable insights into the lesson plans produced by humans and a machine, from a small sample of EFL teachers. Second, it enhances our understanding of ChatGPT's potential for language teaching. Furthermore, it also sheds light into ChatGPT's effectiveness in the unique context of the language teaching program at Universidad del Valle where this study was conducted. Finally, it is an important contribution to the existing body of literature addressing technology integration in language education, with a particular focus on ChatGPT's use.

CHAPTER 2 LITERATURE REVIEW

2.1 Chapter Overview

The previous chapter introduced the study about the integration of ChatGPT into language teaching, with a specific focus on lesson planning in English as a Foreign Language (EFL). The present chapter delves into empirical research on this topic, examining existing studies and their findings. This chapter starts with a review of empirical research on the application of ChatGPT in several educational contexts and disciplines. It reviews the benefits, challenges, and perceptions of this integration into teaching practices, with a particular emphasis on its implications for language education. It then continues with a discussion of the conceptual framework used to investigate the components and approaches identified in lesson plans elaborated by humans and AI. It includes the notions of lesson planning, technology integration, AI in education, and ChatGPT. The chapter concludes by highlighting the gaps this study aims to fill in the field of EFL lesson planning, particularly in the context of public institutions.

2.2 Research on Artificial Intelligence (AI), ChatGPT, and Lesson Planning

The use of AI in education, especially ChatGPT, has gained global attention. Previous studies predominantly explored the advantages and challenges of integrating this tool into teaching practices, focusing on perceptions and ethical considerations. Primarily literature reviews and qualitative analysis, stress the positive reception of ChatGPT among pre-service and in-service EFL teachers for integrating AI into their teaching practices (Gayatri & Paul, 2022; Ha, 2023; Lou, 2023; Ulla et al., 2023). While existing research, there is a noticeable gap in comparative studies between human educators' productions and AI. In the Colombian context, the exploration of AI in education, especially in language teaching lesson planning, is an issue. Previous research has explored the benefits of emerging technologies such as AI for teachers and learners, emphasizing the benefits and challenges of its implementation (Barrios et al., 2019; Terán, 2023). Although lesson planning has been an object of study, existing research primarily evaluates the effectiveness of plans, methods, and strategies while exploring perceptions and reflections during EFL teaching practices. It is necessary to investigate how other tools, such as AI, can help EFL teachers with their lesson plans by providing useful suggestions regarding learning objectives, content, language and culture integration, activities, and resources.

In this section, we discuss the integration of ChatGPT into lesson planning in the context of EFL teaching. The review is organized into three levels: international, national, and local studies, to provide a more detailed understanding of how ChatGPT influences education across several geographical contexts. These studies demonstrate how AI is being implemented to assist teachers, enhancing the quality of language instruction, and recognizing its benefits if they are applied under ethical principles (Van den Berg & du Plessis, 2023). Moreover, such studies serve as evidence of the need to further explore AI applications in education. At the end of this section, the key findings from these studies are summarized, highlighting the gap that the present study aims to address.

2.2.1 International Studies on ChatGPT in Lesson Planning

Since its recent launch, researchers have explored the impact of ChatGPT in key areas of teaching, such as critical thinking, open education, and lesson planning, showing positive and negative results. Van den Berg and du Plessis (2023) investigated the potential of ChatGPT and generative AI tools in teacher education through an exploratory case study through document analysis, with texts generated by ChatGPT as data collection instruments. Findings demonstrated that ChatGPT could generate lessons in specific subjects and levels, potentially saving teachers time and effort and enhancing accessibility and openness in education. The study identified the potential benefits and drawbacks of integrating AI into lesson planning and critical thinking. The authors concluded that AI tools, like ChatGPT, have the potential to revolutionize education, but ethical and practical challenges must be addressed. The authors recommend continued exploration of AI possibilities in education while being mindful of ethical and practical challenges.

Related studies have also delved into the implementation of Artificial Intelligence, especially ChatGPT, in education from the perspectives of EFL educators. Ulla et al. (2023) conducted a qualitative study to explore teachers' perceptions of the use of ChatGPT in EFL teaching at a university in Thailand. The study entailed a sample of 20 EFL teachers. The authors utilized semi-structured interviews, and the data were analyzed through thematic analysis. The findings unveiled positive attitudes toward utilizing this tool to enhance students' learning experiences. The authors concluded that ChatGPT holds the potential to be an effective teaching tool in EFL classrooms in Thailand, but further research is required to assess its effectiveness in different contexts. They recommended that future studies might investigate the efficacy of ChatGPT in diverse EFL settings. Additionally, they suggested providing EFL

teachers with training and support for the effective integration of ChatGPT into their teaching practices.

Building on the examination of perceptions, Lou (2023) explored the utilization of ChatGPT in one in-service English teacher preparation in a Malaysian Primary School. In contrast to other studies, the sample consisted of one EFL teacher as a participant. The researcher employed a qualitative approach grounded in a literature review. A face-to-face interview revealed that the participant used ChatGPT to search for teaching materials, emphasizing its efficiency in saving time during class preparation. The researcher concluded that ChatGPT provides immediate assistance for English teachers in designing or preparing their teaching content. However, the study acknowledges the limited sample and restates that the findings may not fully represent the landscape of English language teaching in Malaysia. Lastly, the study proposes that future research should explore the potential applications of ChatGPT in a teacher's instructional methods.

In a different discipline, Ha's (2023) findings raised some concerns regarding the application of ChatGPT in physics teaching. The researcher implemented a case study to investigate the practical applications of ChatGPT for simulation teaching by 22 pre-service physics teachers at a university in South Korea. The study enlisted 22 preservice physics teachers who were introduced to ChatGPT and encouraged to integrate it into their lesson preparation and implementation. Data collection included interviews, observations, and document analysis. The results indicate that ChatGPT can be a valuable tool for pre-service teachers in crafting lesson plans, studying content, and addressing misconceptions. Yet, there were concerns regarding the reliability of the information and the potential for students to accept the knowledge uncritically. The study concludes that ChatGPT holds the potential to be a beneficial tool for pre-service physics teachers, and further research is required to explore its applications in other contexts with larger sample sizes. Finally, the study recommends training pre-service teachers to critically evaluate information provided by ChatGPT.

Continuing in wider geographical and teaching contexts, Gayatri and Paul (2022) investigated the implementation of AI in education, particularly in science classrooms at an Indian elementary school. The quantitative study included 20 science teachers and a self-developed questionnaire with 12 questions to collect data on teachers' perceptions of lesson plans generated by ChatGPT. The results demonstrated that teachers reported benefits in learning outcomes as well as improvements in students' cognitive and motor abilities. Teachers also agreed that AI lesson plans should be included in the curriculum. As concluded in similar

studies, AI-integrated lesson plans can improve the teacher practices and student's learning process.

The previous results in other disciplines might be useful for the present study in comparing the effectiveness and perceptions of AI-generated lesson plans in different educational contexts. Studies in science and physics can help us understand how AI tools such as ChatGPT are used, perceived, and potentially integrated into lesson-planning practices. By considering these perspectives, we can gain a broader view of the potential benefits, challenges, and ethical considerations associated with the use of AI in education. Moreover, these studies offer methodological insights and recommendations for data collection, analysis, and teacher training that can be useful for this and further studies. However, their results might differ from other areas such as language teaching. Hence, further research is relevant to confirm or disconfirm the results in other areas and disciplines.

2.2.2 National Studies on AI in Education

Recently, researchers have been interested in the study of AI in education, leading to explorations regarding the ethical considerations of this technology integration. Barrios et al. (2019) conducted a qualitative study in Colombia intending to investigate how 140 master's degree students perceived the use of robotics and AI in the classroom. Data was collected from surveys and participant observation and analyzed using tables. The results showed that teachers have different viewpoints, with many of them believing that AI might eventually replace teachers. Furthermore, most participants expressed concerns about how it will affect leadership, student engagement, critical thinking, and emotional development. The authors concluded that there are problems associated with robotics and AI in education, emphasizing concerns about teachers losing their jobs.

More recently, Terán (2023) identified potential ethical challenges in the findings, including the risk of providing inaccurate or biased information, concerns about plagiarism and privacy, and the absence of human interaction. The researcher conducted a study on ChatGPT as a tool in programming education, aiming to explore its ethical implementation and impact on student learning experiences and motivation. The participants were 51 students enrolled in algorithms and programming courses. With a mixed-methods approach, the study employed a survey to explore students' perceptions and knowledge of ChatGPT and analyzed student performance and motivation. The study concludes that while the ethical implementation of ChatGPT can benefit students, it is crucial to address associated challenges. Finally,

recommendations suggest that educators should be aware of ethical concerns, promote critical thinking, encourage collaboration, and utilize tools to prevent plagiarism.

2.2.3 National Studies on Lesson Planning in Language Teaching

While AI has not been extensively explored at the national level, studies have investigated various aspects of lesson planning for EFL instruction. Herrera (2016) conducted action research to assess the influence of time management and effective lesson planning on students' performance in an English class. The study involved 47 fifth-grade students and their English teacher in a public school in Medellin. Qualitative methods included classroom observations, journals, worksheets, and questionnaires. The findings revealed that proficient time management and lesson planning had a positive impact on students' performance, resulting in significant advancements in reading, writing, speaking, and listening skills. Despite these improvements, some students faced challenges related to motivation and interest in the subject. The study concluded that teachers should employ diverse teaching strategies and resources to engage students and stimulate their interest. Furthermore, regular feedback and support to enhance students' learning and performance are recommended.

Contributing to this field, Carreño Bolívar & Hernandez Ortiz (2018) investigated the benefits of collaborative lesson planning among English language teachers at a higher education institution in Bogotá. The study involved 12 English language teachers and six mentors, with data collected through two online surveys and one semi-structured interview. Findings revealed that collaborative lesson planning among English language teachers led to shared success and improved teaching practices. The study concluded that collaborative lesson planning is beneficial for English language teaching. However, the study suggests the need for further research to explore the advantages of collaborative lesson planning in different contexts.

In contrast, the exploration of lesson planning has focused on pre-service teachers' perceptions of their practice experiences. Ubaque-Casallas and Aguirre-Garzón (2020) explored, through a narrative study, how student teachers learned and generated professional and personal knowledge with lesson planning. The sample consisted of two EFL student teachers from the sixth semester in a private university in Bogotá. Life story interviewing was used to investigate participant experiences in teaching. The results of the study recommended that lesson planning is a valuable tool that teacher practitioners can use to analyze the many elements of a lesson plan and develop essential skills for creating learning objectives and related teaching activities.

2.2.4 Local Studies on EFL Teachers' Methodologies and Students' Perceptions

At the local level, there is a noticeable scarcity of research on AI in teaching and lesson planning. Nevertheless, previous studies have focused on the methodologies employed by EFL teachers and their perceptions, as well as those of students. First, a descriptive study conducted by Cárdenas Ramos and Gómez León (2018) explored the methodologies used by teachers at Universidad del Valle over the last 12 years in Cali. Employing a mixed-methods approach, electronic surveys, participating structured observation, and field notes were conducted. Data from 39 language teachers who graduated from Univalle were analyzed through constant comparison. Findings highlighted various factors influencing teachers' methodologies, including institutional mission and vision, material availability, planning constraints, salary impact, personal experiences as learners, and the influence of previous teachers. Conclusions emphasized that teachers with 10 or more years of experience predominantly based their methodologies on task-based language teaching, CLT, and projects. Finally, the study underscored that the teacher's methodology is primarily a personal decision, impacted by class size, material availability, and the challenging educational context that interferes with the implementation of more recent methodologies.

In the distinctive context of teaching English in non-language areas, Isáziga (2019) investigated the perceptions and practices of three teachers instructing mathematics in English at a private bilingual school in Cali. With a qualitative and inductive approach, the study found that teachers considered that a significant part of the class should be in the native language. Challenges in English production persisted despite high comprehension levels, and there was no unified definition of bilingualism among teachers. Moreover, all teachers favored the Communicative Approach, emphasizing the primary goal of students learning mathematics regardless of foreign language proficiency. Hence, conclusions stressed the need for schools to support students learning a foreign language, integrate teachers' language skills into math classes, and improve overall school design and methodologies.

Considering the importance of students' perceptions towards EFL teaching methodologies for enhancing teaching quality, Echeverry Mera (2020) investigated the beliefs and attitudes of students learning English in a private institute in Cali. The quantitative study involved 173 students in a language institute, utilizing an Ad Hoc questionnaire and employing Excel and SPSS for data analysis. Findings revealed that students believed English proficiency contributes to improved academic and professional opportunities, prefer teachers to speak only English, accept traditional teaching beliefs, and strongly agree with communicative ideas.

Additionally, students expressed positive attitudes towards their teachers and the institute's methodological choices. Conclusions highlighted that those students in private institutes value English for instrumental purposes, preferring classes conducted primarily in English with limited or no use of Spanish. In contrast to other studies, the author recommends more diverse samples across various educational contexts to understand student perspectives on English learning. Although this study provides insights into the students' perceptions of effective lesson plans, it did not focus on analyzing teachers' lesson plans compared with AI lesson plans.

2.3 Concluding Remarks

The previous literature review provides an overview of research on AI in education, emphasizing international studies exploring the application of ChatGPT in lesson planning. These studies offer valuable insights into the benefits and challenges of these tools in various geographical contexts, including Thailand, Malaysia, and South Korea, demonstrating positive attitudes among the pre-service and in-service teacher's attitudes toward AI in traditional teaching. However, research exploring how ChatGPT helps SLA lacks full exploration yet (Han, 2024).

In our national and local educational contexts, there is a notable absence of studies on ChatGPT in EFL lesson planning, representing a gap in literature. While international research has explored various areas of AI in lesson planning, our context has yet to address this aspect. Therefore, the research questions posed in this study directly address this gap by identifying similarities and differences between lesson plans generated by ChatGPT and those created by in-service and pre-service EFL teachers in a Colombian university setting. By comparing the lesson plans and exploring perceptions, the study aims to contribute valuable insights into the territory of AI in lesson planning. Hence, this study fills the gap between international research explorations and the specific needs and challenges of our local educational context, providing an understanding of the implications of AI, particularly ChatGPT, in innovating traditional lesson-planning practices.

The next chapter discusses the main concepts of the present study regarding lesson planning and methodologies, Artificial Intelligence in education, and ChatGPT.

CHAPTER 3 CONCEPTUAL FRAMEWORK

3.1 Chapter Overview

The previous chapter reviewed the literature on the application of artificial intelligence (AI) in lesson planning. Although previous research exists, there is a notable lack of comparative studies between teachers and AI's lesson plans. To understand how AI can assist language teaching, the present study investigated AI's role in language teaching by comparing AI-generated lesson plans with those made by EFL pre-service and in-service teachers. Additionally, it explores teachers' perceptions of AI in lesson planning. The present chapter discusses the concepts that guide the present study, including Lesson Planning, Artificial Intelligence, and ChatGPT. It discusses the interaction between traditional methodologies and technology to understand their collaborative role in language teaching.

3.2 Lesson Planning

Lesson planning plays a relevant role in effective teaching as it involves in-depth preparation of activities aligned with anticipated learning outcomes. According to Brown and Lee (2015), a *lesson* denotes a set of activities conducted during a class, typically lasting 45 to 90 minutes. This structured learning process is even richer when it is properly planned. As Purgason (2014) highlights, during the lesson design process, the teacher merges their theoretical knowledge with an understanding of the students, creating a *road map* that visualizes the desired course development. In essence, lesson planning involves the process of thinking and documenting a teaching plan that fosters student learning in a specific context and moment (Savage, 2014). The outcome of this planning process should encompass and align with the learning objectives, the materials, and the proposed activities to fulfill the goals (Hinkel, 2015). To achieve effective planning, the teacher must demonstrate the ability to adapt to students' needs, allowing for beneficial adjustments (Richards, 2001). However, as we implement our plan, many things can happen, including events that we may not have predicted (Harmer, 2015). Although lesson planning may be an exhaustive task, these meticulous plans serve as a guiding path for the successful development of the course.

These views of lesson planning complement each other and provide a comprehensive approach to the lesson planning process. Overall, lesson planning is a structured and arduous process of planning and documenting the activities prepared for a class to enhance student learning in a specific context and time. Based on the teachers' understanding of their students, this planning must be closely aligned with the learning objectives and expected outcomes.

Moreover, planning requires teachers' flexibility and adaptability to respond to learners' varying needs and unexpected events in the implementation of their plans. This integrated definition captures the essence of lesson planning described by the authors and is considered for understanding the findings of this study.

In language teaching, as in any educational setting, it is essential to recognize that each classroom is unique and includes its challenges. Effective language teaching must ensure that the methods used will enhance the learning objectives and be designed based on the specific teaching context (Widdowson, 1990). For this purpose, teachers' decisions regarding what to teach are influenced by their assessment of all the factors involved in instructing students in that situation (Cook, 2016). Some factors teachers must consider during this step, as emphasized by Brown and Lee (2015), include their philosophy of education, the methodologies available for teaching, a particular approach and classroom objectives, students' abilities, and institutional standards, among others. Therefore, teachers must require professional skills that reflect a solid comprehension of the language they teach, demonstrating the competence expected of a professional in this field (Richards & Bohlke, 2011). In this way, lesson planning emerges as the instrument that adapts teachers to their learners and the specific difficulties of the context where language teaching is applied.

Regarding lesson-planning structure, various proposals have been designed and implemented in education and language teaching. Although their components may differ, these formats share a structured approach that guides teachers toward effective teaching. This includes elements such as learning objectives, initial activities, and assessment of students' progress, among others. This section reviews the most influential lesson plan formats proposed in other subjects and language teaching. The lesson plan taxonomy is useful in the present study to identify different approaches and formats to lesson planning between Chat GPT and pre-service and in-service language teachers. After describing each model, a comparison is presented at the end.

3.3 Lesson Planning in Other Subjects

Lesson planning in other subjects addresses the specific needs of each area of knowledge, adjusting the approach and activities to their aims. Below, two prominent models are presented: one designed particularly for science teaching and another of a more standard format, widely used across disciplines over time, to facilitate the structure of lessons in different educational contexts.

3.3.1 Format of a Lesson Plan by Bybee et al. (2015) in Science Teaching

In 1987, the Biological Sciences Curriculum Study (BSCS) developed the 5E's model based on constructivist theory, where the student learns through experiences (Garcia et al., 2021). Although this model was designed for the area of science teaching, it is possible to adapt it to other fields, including language instruction. The BSCS 5E model is an instructional framework that guides lesson planning through five stages: Engage, Explore, Explain, Elaborate, and Evaluate. While it provides a structured approach to student-centered learning, it serves as a broader instructional sequence rather than a fully detailed lesson plan, as shown in Table 3.1, which outlines the stages and their key characteristics.

Table 3.1 *Summary of Phases of Bybee et al.'s (2015, p. 8) 5E Model.*

Phase	Summary
Engagement	This phase of the instructional model initiates the learning task. The activity should make connections between past and present learning experiences, anticipate future activities, and focus students' thinking on the learning outcomes.
Exploration	This phase of the instructional model provides students with a common base of experiences within which they identify and develop current concepts, processes, and skills.
Explanation	This phase focuses students' attention on a particular aspect of their understanding and provides opportunities for them to express their conceptual understanding or demonstrate their skills. This phase also provides opportunities for teachers to introduce a formal label or definition for a concept, process, or skill.
Elaboration	This phase challenges and extends students' conceptual understanding and allows further opportunities for students to practice desired skills and behaviors. Through new experiences, the students develop deeper and broader understanding, more information, and better skills.
Evaluation	This phase has students assess their understanding and abilities and provides opportunities for teachers to evaluate student progress toward the learning outcomes.

Adapted from *The BSCS 5E Instructional Model* (Bybee et al., 2015, p. 8).

3.3.2 Format of a Lesson Plan with The Hunter Direct Instruction Model (HDIM)

Popular in the 1970s, the Hunter Direct Instruction Model (HDIM) continues to be present in classrooms across different disciplines and contexts. This lesson plan model resembles a recipe, meaning that if the teacher follows the pre-established steps, they can assume that their students will learn. As for science, Berg and Clough (1991) stated that it was

unsuitable for this discipline, as it reduces learning to a mere set of rules and events, ignoring important procedures required for effective scientific learning. Despite being a research-approved model, its standards limit the teachers' ability to apply their knowledge and embrace student diversity, besides not guaranteeing the effectiveness of the learning experiences. Figure 3.1 shows an example of this model.

Figure 3.1 *The Hunter Direct Instruction Model (HDIM) in Education (Cuban, 2019)*

Lesson Plan Format The Madeline Hunter Model	
Lesson Date and time: Room number:	# of Students: Teacher's name:
What is the lesson objective? What will the students learn and / or demonstrate? Be sure to use action, measurable verbs.	
Standards addressed: List the standards – use NJCCCS.	
Anticipatory Set: The “Hook” – How will you excite the students about the subject matter?	
Materials Needed: List all materials – charts, books, pencils, paper, etc. Be complete!	
Technology: What type of technology did you or the students use for this lesson?	
Teaching / Instructional Process: This is the roadmap to your lesson. Write out everything you are going to do. This is the longest part and should be a step by step instruction manual of the lesson. For example – 1. show video clip, 2. ask leading questions about clip, 3. etc.	
Guided Practice and monitoring: Monitor orally, individually, or together; monitor via written language or via a task or performance; monitor via group sampling or visual answers, e.g. “thumbs up or down” – you monitor to know if students are learning and lesson objectives are being met.	
Closure: Statements or actions that help students make sense out of what has just been taught, to help form a coherent picture, to eliminate confusion and frustration, and to reinforce major points to be learned.	
Independent Practice: This can be a question or problem for students to ponder on their own or in small groups or pairs. The aim is to reinforce and extend the learning beyond the lesson and ideally into real world settings.	
Assessment: How will you assess the students’ understanding of concepts, strategies, and skills?	
Differentiated Instruction: What modifications do you need to make in order for all learners to succeed with this lesson?	

From *Whatever Happened to Madeline Hunter Lesson Plans?* by L. Cuban, 2019, retrieved from <https://larrycuban.wordpress.com/2019/10/08/whatever-happened-to-madeline-hunter-lesson-plans/>.

3.4 Lesson Plan in Language Teaching

In language teaching, lesson plans are outlines designed to frame and guide each learning session, providing teachers with an effective way to organize language contents, tasks,

and learning objectives. In this section, some of the most widely adopted lesson plan formats in language teaching are described as a framework for planning lessons to enhance the practice and development of communicative skills in learners. While there is no singular model for lesson planning, the approach put forth by Brown and Lee (2015) has been influential and widely adopted in the field of language teaching. The authors' proposed lesson planning format with essential elements is summarized below.

3.4.1 Format of a General Lesson Plan by Brown and Lee (2015)

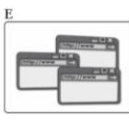
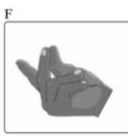
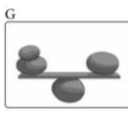
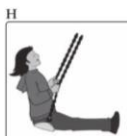
1. **Goal:** A course has specific goals, and each class targets to achieve these general objectives, providing the teacher with a pedagogical focus that guides each lesson.
2. **Objectives:** Clearly defining goals for each lesson aids in understanding the desired outcomes, maintaining the lesson's course, anticipating overload, and assessing student success. In addition, there are also enabling objectives, which are steps incorporated into the lesson that led to terminal objectives. These terminal objectives represent the evaluation of outcomes.
3. **Materials and Equipment:** For effective planning, it is crucial to ensure having the necessary materials, as forgetting any element could directly impact the quality and development of the class.
4. **Procedures:** Although plans may have variations, there is a guide for planning:
 - a. A warm-up activity for students to utilize previous knowledge.
 - b. Activities and techniques that occupy a substantial part of the class, providing opportunities for working in pairs or groups, involving student or teacher-led discussions.
 - c. Closing stage.
5. **Evaluation:** To determine the achievement of the objectives, it is not always necessary to assign a grade, as the teacher should be able to make assumptions about the results and effectiveness of the plan through observation.
6. **Extra-Class Work:** This aspect should be meticulously planned and communicated to students to ensure the expected outcome of the task.

A detailed lesson plan, proposed by the Brown and Lee (2015) model, designed for a particular teaching context, is presented below. This plan encompasses information about the learners, lesson objectives, procedures, and the materials employed. Figure 3.2 depicts an example of a lesson plan in language teaching.

Figure 3.2 Brown and Lee's (2015) Lesson Plan Model in Language Teaching

Imperatives Lesson Plan Target Audience and Context: EFL students in Salahaddin University in Erbil, Iraq Learner Level: High beginner/Low intermediate Class size: 25–30 Class length: 90 minutes Terminal objectives <i>Students will be able to:</i> • Give instructions and commands using imperatives. • Use imperatives in a socially appropriate manner. Enabling objectives <i>Students will be able to:</i> • Practice imperatives through an information gap activity. • Categorize giving imperative commands in terms of appropriateness. • Practice giving appropriate commands using imperatives through a situational activity. Materials • YouTube video (youtube.com/watch?v=E_FzgtLVzbl) • Whiteboard and markers • Vocabulary matching handout (Appendix A) • Fill-in-the-blanks handout (Appendix B) • My favorite dance (Appendix C) • Uses of commands handout (Appendix D) • Application of commands in different situations handout (Appendix E)		25–27 min. Appendix A (Vocab. matching handout) YouTube video (youtube.com/watch?v=E_FzgtLVzbl) Appendix B (Fill-in-the-blanks handout)	Pre-Task: Introduction/schemata activation • Tell Ss they are going to watch a video on how to dance the Moonwalk so that they can see an example of giving commands in context. • Distribute a few snapshots from the video and ask Ss to predict how the Moonwalk is danced. Ask Ss which famous singer is associated with it. • Distribute vocabulary-picture match-up worksheet (Appendix A). • Ask Ss to work independently; give them 5–7 minutes. • Prompt a few Ss to share their answers and explain any difficult word. Stimulus material: YouTube video • Show entire video once through; have Ss just watch, so they have a general idea about the video. • Ask Ss if they understand the content of the video after watching it. • Distribute fill-in-the-blanks handout (Appendix B). Play video a second time through and ask Ss to complete worksheet as they watch the video. • Review the answers and ask Ss to keep the handout with their answers on it, as they will return to the handout later. • Direct students to compare Moonwalk to cultural Kurdish dance to further activate their cultural and content schemata.
Time and Materials 3–5 min.	Procedures Welcome • Ask about Ss weekend, and how they spent it. • Take attendance.	20–23 min. Appendix C (My Favorite Dance)	Main Task: Information gap activity • Ask Ss to form pairs. Distribute Appendix C: My Favorite Dance. Have them take turns describing a favorite dance by giving instructions to their partner, using imperatives. As a reference, have them use the script from the video (provided in Appendix C). • Tell Ss that the dance could be from Iraqi/Kurdish culture. Some examples from Kurdish dance are: <i>Se peyi</i> dance, <i>Du peyi</i> dance, or <i>Haurami</i> dance. • Ask each pair to share the description of their dance with another pair, after describing the dance. Student pairs guess each other's dances. • Ask Ss to take notes while working on this activity, as the teacher will randomly pick some pairs to share their favorite dance. • Allow the pairs 15 minutes to discuss and take notes. • Circulate the classroom for support.

20–23 min. Appendix B (Fill-in-the-blanks handout, again)	Post-Task: Review of the main-task answers • Pick some pairs to share their responses by describing or modeling the dance. Have a couple of pairs write their responses on the board. Focus on Form • As a class, review the language Ss just used. • Draw Ss' attention to the student-generated sentences on the board. • Ask Ss to compare these sentences with the completed script-gap (Appendix B) to notice the form and how it is used, and to notice their errors if they have any. • Invite Ss to correct any errors on the board. • Elicit the function of the imperatives used in the video (give commands) and during the main activity (give instructions). Transition • Ask students if they know some situations in which using imperatives specifically to give commands is appropriate and/or inappropriate. • Give students a few minutes to discuss with the person next to them. • Call on new volunteers to share responses.
20–23 min. Appendix D (Uses of command) Appendix E (Application of commands in different situations)	Extended Post-Task: Register judgment activity • Distribute Appendix D: Uses of command. • Ask Ss to circle yes, no, or maybe based on the appropriateness of the commands based on the situations. • Check their understanding of the activity directions. • Circulate the classroom for support. • After allowing them some time, open a discussion by inviting students to share and give reasons for their choice. Application of the register judgment • Distribute Appendix E: Application of commands in different situations. • Ask Ss to choose some of the situations from Appendix D to write a new imperative command for them. • Direct them to use <i>I need you</i> and <i>Let's</i> to soften the command. • Tell Ss that they can work alone. If they find the activity hard they can work with another student. • After 5–7 minutes solicit responses from those who haven't participated.
2–4 min.	Closure: Application/Extra-class work • Ask Ss to select an activity they are interested in (such as a sport, playing a game, or cooking). • Tell them to post their topic on the blog and write a short description about how to do/play/cook by using mainly imperatives.

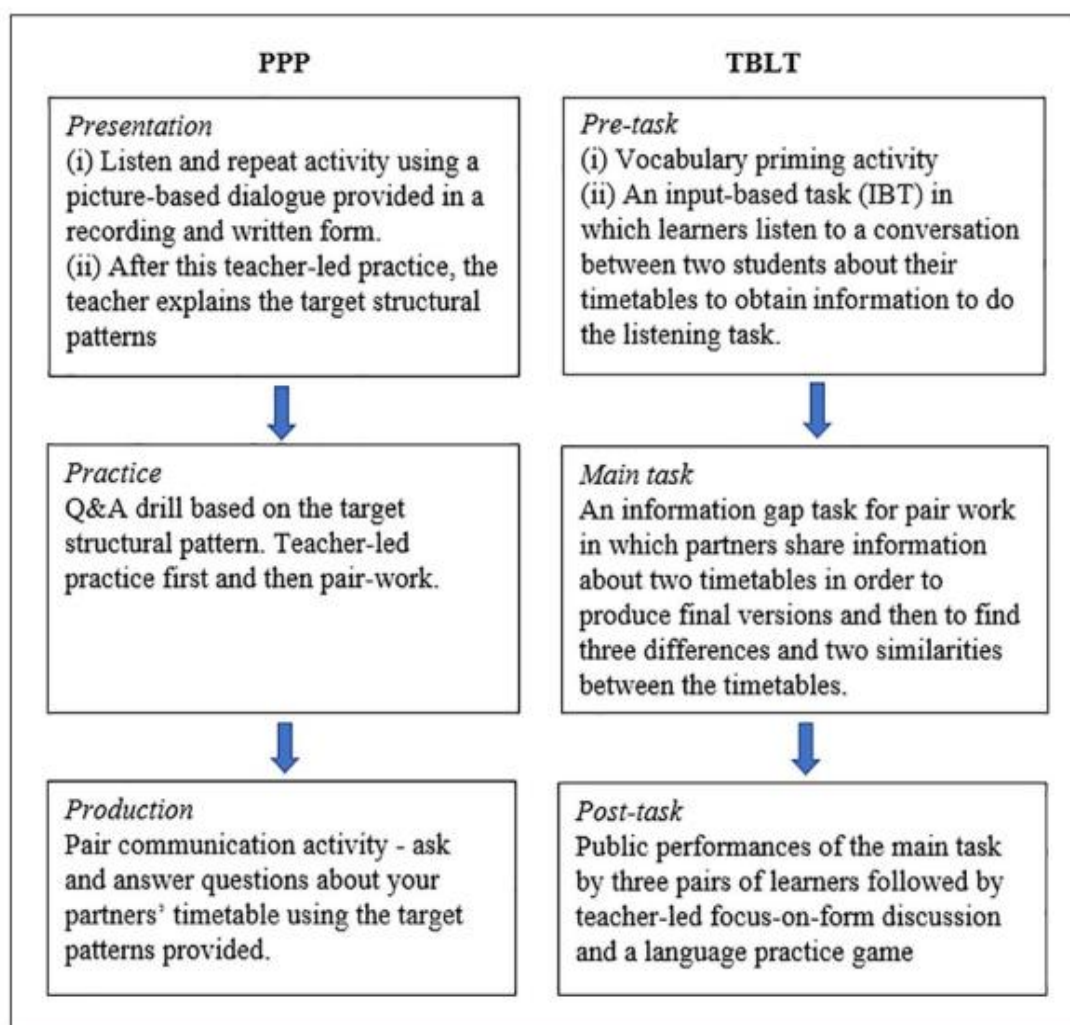
Appendix A			
Vocabulary Matching Handout			
Student Name _____			
Directions: Write the correct word under each picture.			
balance snap	trainers swing	step duplicate	slide lift
A  Lift	B 	C 	D 
E 	F 	G 	H 

Adapted from *Teaching by Principles: An Interactive Approach to Language Pedagogy* (4th ed., pp. 209–212) by H. D. Brown & H. Lee, 2015, Pearson Education ESL.

3.4.2 Format of a Lesson plan with PPP and TBLT models in Language Teaching

Other frequent models in EFL classes implement Presentation-Practice-Production (PPP) and Task-based language teaching (TBLT) approaches. Originating in the 1970s, the PPP approach to lesson planning is commonly used in textbooks for beginning EFL learners when trying to learn grammatical aspects of the language for the first time. The PPP model uses a pattern of production, guided practice, and presentation in language instruction. In contrast, the Task-Based Learning strategy concentrates on relevant, real-world tasks to improve language in specific contexts through task stages, whereas a Presentation-Guided Practice highlights the differences in structure between the two models. Figure 3.3 compares the structures between PPP and TBLT.

Figure 3.3 Summary of Differences in Structure Between PPP and TBLT Lesson Plans (Bui & Newton, 2022, p. 206)



From *Developing Task-based Lessons from PPP Lessons: A Case of Primary English Textbooks in Vietnam* (p. 206), by T. Le Diem Bui & J. Newton, 2020, *RELC Journal*, 53(1), 203-215. <https://doi.org/10.1177/0033688220912040>. (Original work published 2022).

Figure 3.4 represents an example of a lesson plan based on the 5E instructional model applied in an ESL classroom.

Figure 3.4 *Example of a 5E's Lesson Plan in Language Teaching (Naguib, 2019, p. 244)*

Lesson Number	Unit (11), lesson (2) SB page (67), WB page (66)	Lesson Number	Unit (11), lesson (2) SB page (67), WB page (66)
The lesson Topic	The Past Simple and Past Perfect		- Teacher explains that When two actions happen one after the other, they can use the past perfect for the action that happened first.
Implementation Time	50 Minutes		
Stage	Secondary Stage	Elaborating	-Teacher writes the following sentences on the board, noting that there is an earlier action (action1)and a later action(action 2): • They said that I was not as good as them because I had come from a poorer family. • It was winter and I had read in that room every day for weeks. • My cousin John had not known I was there so when he saw me, he started to shout at me. • What a kind man he had been when I first moved there! • She had disliked me from the day that I arrived at Gateshead Hall. -Teacher gives the students chance to use their knowledge and number the actions. - Teacher discusses students' answers and presents further elaboration.
Learning Outcomes	Using past simple and past perfect correctly in oral and written forms.	Evaluating	-Teacher evaluates students' understanding of the topic of the lesson and their ability to use past simple and past perfect correctly. -Teacher assesses students' discussion with concluding comments.
Methods of Teaching	Examination, Demonstration, Exploring, and learning by doing (Included in the 5E's instructional model.		
Stages	Engaging, Exploring, Explaining, Elaborating, and Evaluating		
Engaging	-Teacher writes the following sentence on the board: I had worked at Port Said preparatory school before I worked at Rofaida Alansary secondary school. -Teacher asks the student the following question:" Which school did I work at first?" -Teacher tells the students to write the answer, or the name of the school, in a sheet of paper.		
Exploring	-Teacher asks students to raise the paper sheet to check their answers. -Teacher announces that the correct answer is " Port Said preparatory school" -Teacher asks students to write one sentence about their life. The sentence should contain two actions that happened in the past. - In pairs, students exchange information about past actions in their lives and answer the question:" Which is the earlier action?" -Teacher monitors students' discussion.		
Explaining	-Teacher asks the students about the formation and usage of the two tenses. - After students' thinking, teacher provides them with a clear explanation (structure and usage) of past simple and past perfect.		

From *Using the 5E's Instructional Model to Enhance English Grammar Learning of Secondary Stage Students* (p. 244), by S. M. N. Naguib, 2019, *Journal of Curriculum and Teaching Methods*, 244(244), 115-152.

Overall, Brown and Lee's (2015) models of lesson planning, the PPP (Presentation, Practice, Production) approach, and TBL (Task-Based Teaching) address language teaching by encouraging language communication and interaction. Meanwhile, PPP adopts a more traditional approach, and TBL emphasizes meaningful tasks within real-life contexts. By contrast, the 5Es model is typically applied in science education and supports exploration-based learning. The Hunter Direct Instruction Model (HDIM) has a more generic approach and relies on direct instruction, which aims to enhance teaching and learning with a structured approach to planning.

3.5 Lesson Plan Models Equivalence

Table 3.2 presents the components of the models found in the literature to identify similarities and differences. The information provided becomes, then, the basis for the design of the checklist used as a data collection tool in this research.

Table 3.2 *Lesson plan models equivalence*

Language teaching			Other subjects	
Brown and Lee (2015)	PPP	TBL	5E's	Hunter Direct Instruction Model (HDIM)
Objectives	Objectives	Objectives	Learning Outcomes	Objectives / Purpose
Materials	Materials	Materials		Materials
Welcome				Anticipatory Set
		Warm-up	Engagement	
Pre-task	Presentation	Pre-task	Exploration	Instructional Delivery
Main Task	Practice	Main task	Explanation	Model
Post-task	Production	Post-task	Elaboration	Check for Understanding
Extended Post-task			Evaluation	Guided Practice
Closure				Closure
Extra Class Work				Independent Practice

As can be seen in Table 3.2, all models adopt a structure that entails establishing objectives, delivering materials, motivating students at the beginning, introducing tasks, leading practice, and closing the session. Similarities involve the focus on objectives and materials at the beginning and the use of a practice or exploration phase. Differences reside in the name and sequencing of specific stages: while PPP and TBL use ‘pre-task, main task, and post-task,’ the 5E’s model focuses on a sequence of exploration and elaboration, and Hunter’s model emphasizes specific steps for direct instruction.

3.5 Lesson Plan Components Adopted in the Present Study

Given its recognition, this study will consider the following components of a lesson plan primarily driven by Brown and Lee's (2015) model, and will be used to analyze the lesson plans produced by ChatGPT and the EFL in-service and pre-service language teachers:

1. **Lesson details:** title, topic, level, number of students, and class duration.
2. **Objectives / Learning Outcomes:** desired goals or outcomes to be achieved at the end of the lesson.
3. **Resources:** materials (physical or digital), or any other instrument used during the lesson.
4. **Warm-up:** Opening activity used to engage students or prepare them for the lesson.
5. **Activities:**
 - **Pre-task:** Activities before the main task that introduces the topic.
 - **Main task:** Activities to learn the content of the subject.
 - **Post-task:** Activities to reinforce what has been learned.
6. **Assessment:** Methodologies and/or activities to assess student understanding and progress on the topic being taught.
7. **Closure:** Summary of the key elements of the lesson and final considerations.
8. **Independent work / Homework:** Assignments outside of class time for the student to review and reinforce lesson contents.

Apart from identifying the lesson plan structure or format, it is relevant to examine the language teaching approach influencing the lesson plans. Currently, it is relevant to foster the development of communicative language abilities and intercultural communicative competencies through communicative and critical language teaching methods. Hence, identifying whether ChatGPT produces communicative lessons is relevant to making decisions on the usefulness of AI in providing examples of communicative lesson plans. Similarly, it is relevant to identify whether experienced and novice language teachers reflect these current views in their lesson plans. The next section reviews the communicative language teaching approaches.

3.6 Language teaching methodologies used in lesson planning

In lesson planning, teachers reflect on the language teaching approach they implement in their classrooms. To identify the common language teaching approach in the lesson plans analyzed in the present study, it is necessary to review the most common communicative

language teaching approaches. These approaches include TBLT, CLIL, PBL, Multimodal, and Critical pedagogy.

3.6.1 Task-Based Language Teaching (TBLT)

Task-Based Language Teaching (TBLT) is a methodology in second language teaching that focuses on task implementation. According to Ellis and Shintani (2014), a task represents a “language use where learners treat the language as a ‘tool’ for achieving a communicative outcome rather than as an ‘object’ to be studied, analyzed and displayed” (p. 136). In other words, TBLT differs from other traditional methods by not directly teaching aspects of the language, such as grammatical structures or vocabulary lists (Ellis, 2020). Instead, it is expected that these tasks stimulate learners’ ability to communicate in the target language. Although several models of Task-Based Language Teaching exist, three common phases can be identified (See Figure 3.5).

Figure 3.5 *Phases and aims of a task-based lesson (Ellis, 2020, p. 37)*

Phase	Aim
Pre-task phase	To help students prepare to perform the task.
Main task phase	To enable students to perform the task in ways that will assist language development.
Post-task phase	To extend the task and/ or to focus on any language problems that occurred during the main task phase.

From *Introducing Task-Based Language Teaching* (p. 37), by R. Ellis, 2020, *TEFLIN Teacher Development Series*, TEFLIN Publication Division.

Activities planned at each phase could either simplify or complicate the task, affecting students’ performance. Easier exercise options usually appear at the beginning of the task (Pre-task phase), and those requiring more work occur at the middle of the task (Main task phase). As for the linguistic aspect, authors differ regarding whether it should be carried out or not, since it might interfere with the initial communicative focus of the task (Ellis & Shintani, 2014). Therefore, during the lesson planning process based on TBLT, the teacher must “have a clear conception of the tasks design and then to be able to design appropriate communicative tasks for different teaching materials and to conduct activities to implement these tasks in appropriate ways with different students” (Munira & Ferdousi, 2019, p. 108).

3.6.2 Content and Language Integrated Learning (CLIL)

In 1994, David Marsh introduced the term "Content and Language Integrated Learning" (CLIL), stating that students learn a foreign language better when it is taught along with other contents, rather than independently (Coyle et al., 2010). In other words, CLIL aims for the student to learn English along with other common subjects in the same language, thereby preventing it from being an independent and decontextualized process. This practice is marked by the creation of a learning environment based on significant and relevant content, intercultural understanding, effective processing of personalized learning, and learning sequences that combine content, language, and thinking (Marsh, 2013). This methodology, therefore, mainly benefits multiculturalism, as students receive the knowledge and skills needed to understand and interact with other cultures.

Coyle et al. (2010) recognize three key implications for effective CLIL practice. First, teachers must explore the coherent integration of the learning of these contents and languages with the students' contexts and previously established objectives. This is possible through reflective planning and evaluation processes that support and ensure the correct integration of the approach. Secondly, the teacher must be aware of the student's profile and ensure that they feel supported linguistically during the process. Finally, they highlight the importance of research in CLIL environments through collaboration between both language and content professionals to achieve a balance between linguistic and cognitive skills.

According to Coyle et al. (2009), for an effective application of CLIL, the teacher should:

1. **Select appropriate content:** content that should follow the characteristics of the learners (ages, abilities, and interests).
2. **Develop intercultural awareness:** promote opportunities to investigate and reflect on different cultures, traditions, values, and behaviors.
3. **Use language to learn to use language:** students find information by processing and extracting the language present in oral and written texts, creating meaning from what they hear and read.
4. **Create meanings that matter:** use and encourage communication contexts that maximize interaction in the target language and allow students to express their ideas, thoughts, and feelings in the classroom.
5. **Progression:** the support and resources given to the students will allow them to build knowledge, skills, and understanding that takes them to a higher level of the language.

In CLIL lesson planning, Sepešiová (2015) concludes that adequate competence in CLIL methodology and proficiency concerning both language and content is essential. Teachers must become facilitators of learning, providing effective methods that foster the students' autonomy. In addition, it is also necessary to integrate a cultural approach and ensure that communication in the foreign language is effective. Planning or adapting CLIL classes requires an ability to integrate language and content to achieve learning and teaching objectives.

3.6.3 Project-Based Learning (PBL)

Project-based learning originated in 1959 with John Dewey to actively engage students through meaningful tasks and everyday problems (Krajcik & Blumenfeld, 2005). Students are confronted with these problems and are expected to come up with solutions through project elaborations. In an effective appropriation of PBL, the teacher serves as a guide, advisor, coordinator, and facilitator of the process, to help students transform individual work into a collaborative one (Fragoulis & Tsiplakides, 2009). According to Miller et al. (2012), in the context of foreign language teaching and learning, PBL has been mainly recognized for:

1. Integrating the four language skills.
2. Allowing learners to use a variety of non-linguistic resources to communicate, such as drawings, models, and photographs.
3. Enable learners who are strong in one area (language, technical, management) but weak in others to contribute to a project.
4. Encouraging cooperation among learners.
5. Promoting learner autonomy by reducing dependence on teachers and fostering responsibility for their own learning, while also creating real-life connections between classroom experiences and the outside world.

3.7 Technology Integration in Language Teaching

Technology is an important tool in education, particularly in language teaching. In this study, technology, referred to as AI tools, is relevant to understanding how language teachers can rely on or seek inspiration to plan their lessons. Some authors define technology integration as the successful use of technological devices to enrich teaching and learning. Integrating technology in language and teaching could provide resources such as “educational videos, stimulation, storage of data, the usage of databases, mind-mapping, guided discovery, brainstorming, music, World Wide Web (www)” (Ghavifekr and Rosdy, 2015, p.176), among

others. This integration has the potential to make learning more valuable to students. Nevertheless, this is not merely implementing these hardware and software devices during teaching (Okojie et al., 2006). How teachers perceive and address technology in the classroom can significantly influence the effectiveness of their practices (Su, 2009). While some teachers incorporate technology to enhance their traditional methods, others adopt it in a way that fundamentally transforms the way they teach.

The relevance of technology integration in areas such as language teaching has increased with the introduction of new technologies and teachers adapting their teaching practices. Artificial intelligence, augmented reality, robotics, and adaptive learning systems have become prominent in this context (Shadiev et al., 2023). However, concerns surrounding issues such as access to the internet, time management, lack of teachers' technological skills, and perceptions about this integration may pose challenges during the process (Çoklar & Yurdakul, 2017). The primary advantages of integrating technology as tools for language teachers and students may include TESOL technology standards, opportunities for interaction, access and utilization of authentic linguistic data, empowering agency and identity, and opportunities for intercultural learning (Brown & Lee, 2015). Regarding technologies used in language learning and teaching, it is imperative to remain aware of their applications and updates (Shadiev & Yang, 2020). By doing so, our pedagogical practices foster innovative language teaching experiences that embrace the alliance between technology and education in our 21st century; hence, the next section reviews the use of AI in education.

3.8 Artificial Intelligence in Education (AIED)

The first notion of Artificial Intelligence (AI) appeared in the 1950s with the exploration of machines with human intelligence (Ye et al., 2021). Nowadays, the definition of artificial intelligence remains under discussion. AI operates as the outcome of complex algorithms that process large amounts of information with nearly error-free precision, at a real-time speed and response (Díaz-Guio et al., 2023). Trends suggested a rise in these machine learning and language processing algorithms among teachers and learners, aligning with their preferences and interests (Vidal, 2023). While AI is a modern tool, it is conceivable that human capabilities, not yet reached by machines, could be surpassed as AI advances in the fourth industrial revolution (Moreno, 2019). Therefore, artificial intelligence will follow a path filled with promises of transformation in several disciplines, extending into education and its different scenarios.

AI is revolutionizing our lifestyles and workplaces, particularly in education. Numerous studies have stressed the benefits for teachers and learners. For educators, these advantages may involve automated grading, instant feedback, visual aids, personalized learning, anti-cheating systems, and customized storage (Owoc et al., 2019). Additionally, research by Hwang et al. (2020) suggests that when integrated with human intelligence, machines can act as facilitators for decision-making in various educational situations. Students, mostly known as "Digital Natives (DNs)", easily navigate the digital era without any challenges and stay updated with these technologies (Dingli and Seychell, 2015). For instance, they can leverage AI for tasks such as writing and receiving instant feedback on their productions (Akgun and Greenhow, 2021). However, there are concerns over the possibility that learners may become entirely dependent due to the lack of human interaction (Norman-Acevedo, 2023). Moreover, teachers further argue that there are more drawbacks than benefits of AI integration, and some educators even fear the possibility of losing their jobs to machines (Barrios et al., 2019). To address these challenges and maximize the benefits of AI, achieving a balance between the human mind and AI is crucial. Then, teachers must discover ways to integrate these technologies to benefit students' learning process (Prensky, 2010). Among the most popular chatbots used in education, ChatGPT is widely used by teachers and students. The section below reviews the concept and characteristics of ChatGPT as an AI tool used in lesson planning.

3.8.1 ChatGPT

Released in 2022 by OpenAI, ChatGPT (Chat Generative Pre-Trained Transformer) is a chatbot able to interact with people through dialogues. Beneath it lies an extensive dataset that recognizes patterns and relationships between words, phrases, and complete sentences (Kalla & Smith, 2023). Once registered with an e-mail address and password, the user can start interacting in the chat by sending a prompt (Biswas, 2023) or input. Users can engage with ChatGPT in a natural conversation, accessing a wealth of information that responds to their requirements. Some of its many purposes and uses include content generation, idea generation, programming help, language translation, learning new topics, conversation, writing assistance, and question answering (OpenAI, 2023). However, while it possesses a vast amount of stored information, "this technology typically reproduces text without reliably citing the sources or authors" (Van Dis et al., 2023, p. 225). Therefore, this information cannot be considered reliable, and it becomes the user's responsibility to make conscious and responsible decisions regarding its utilization.

Like other technology-driven artificial intelligence tools, ChatGPT is explored in the educational domain. ChatGPT enables learners to access meanings, provide example sentences, write emails, adjust language complexity, offer vocabulary assistance, and generate texts (Kohnke et al., 2023). Text generation has been the subject of ongoing debate among educators, who raise concerns about the ethical considerations students may overlook when utilizing this and similar AI-based writing tools. Rudolph et al. (2023) argue that it is ironic for the academic community to express concern about ChatGPT when it proves to be beneficial to teachers in their practices. ChatGPT can provide several benefits to teaching, covering the ability to mark and give feedback, and create tasks, questions, and lesson plans (Hong, 2023), among other academic purposes.

Planning lessons can be demanding for many teachers, given their often-overwhelming workload that restricts the time they can dedicate to this activity. Thus, there is a growing exploration of automated lesson plan generation as a complementary instrument for teachers' practices. Using ChatGPT, teachers can create plans focused on a specific topic based on objectives and expected outputs that fit their students' needs (Koraishi, 2023). Figure 3.6 below illustrates a lesson plan generated by ChatGPT in response to a prompt with details and context.

As evidenced in Figure 3.6, ChatGPT recognizes the structure of a lesson plan and responds partially to the provided prompt and specifications. However, it requires the teacher's intervention to modify and address the plan according to specific requirements. Thus, although ChatGPT appears reliable in generating lesson plans, there is a need to delve into the extent of its resemblance to plans made by teachers. This exploration is crucial in determining how much ChatGPT can challenge and complement traditional lesson-planning practices as a supportive tool that cannot replace teachers' roles in the classroom (Ausat et al., 2023). This concern is the basis of this research and will be explored further in the following sections.

Figure 3.6 Lesson Plan Generated by ChatGPT

Share

Provide a lesson plan for an EFL lesson for 25 students with a B1 level. Students will explore the theme of storytelling. The main objective is for students to enhance their English language skills through engaging storytelling activities. The lesson will commence with a brief introduction to the importance of storytelling in language development. Students will then actively participate in a storytelling session, sharing personal anecdotes in English. This will be followed by a group activity where students collaboratively create and present short stories. The lesson wraps up with a class discussion, providing an opportunity for students to reflect on their storytelling experiences and further practice English conversation. The lesson plan emphasizes interactive and communicative approaches to foster language proficiency in an EFL context.

Lesson Plan: Exploring Storytelling in English (B1 Level EFL Students)

Class: B1 English as a Foreign Language (EFL)

Duration: 60 minutes

Students: 25

Theme: Storytelling

Objective: To enhance English language skills through interactive storytelling activities

Materials: Whiteboard, markers, projector (optional), story prompt cards, paper, and pens

Lesson Outline:

1. Warm-up & Introduction (10 minutes)

- Activity:** Begin with a brief discussion about storytelling.
 - Questions to prompt discussion:**
 - "Why do people tell stories?"
 - "What makes a story interesting?"
 - "What are some of your favorite stories?"
- Purpose:** To introduce the value of storytelling in learning English, build rapport, and encourage students to speak freely.
- Outcome:** Students understand how storytelling aids in language development and feel prepared to engage.

2. Personal Anecdote Sharing (15 minutes)

- Activity:** Students individually share a short, personal anecdote with a partner or small group (3-4 students).
 - Guidelines:** Keep it simple; choose something funny, memorable, or surprising. Give them 1-2 minutes to think about the story.
 - Support:** Provide sentence starters, such as "Once, I..." or "The funniest thing that happened to me was..."

- Monitoring:** Walk around, listen to stories, and offer feedback on language use and pronunciation.
- Outcome:** Students practice speaking and listening skills in an informal, engaging way.

3. Collaborative Story Creation (20 minutes)

- Activity:** Group storytelling. Divide the class into groups of five. Each group creates a short story using a set of story prompt cards (setting, characters, and a simple conflict or event).
- Instructions:** Encourage creativity! Students should work together to plan their story and decide each group member's role (narrator, character, etc.)
 - Example Story Prompt:** Setting – A dark forest; Characters – a lost child and a talking animal; Conflict – they have to find a way out.
- Preparation Time:** 10 minutes to create the story, rehearse it briefly, and assign speaking roles.
- Outcome:** Enhanced teamwork, creativity, and speaking practice as students use new vocabulary and practice fluency.

4. Story Presentations (10 minutes)

- Activity:** Each group presents its story to the class.
- Audience Role:** Students in the audience should listen and be prepared to ask one question or comment on the story.
- Feedback:** Encourage constructive feedback by focusing on what they liked about each story, interesting vocabulary used, and clarity.
- Outcome:** Students experience speaking in front of the class and gain confidence in using English expressively.

5. Reflection & Class Discussion (5 minutes)

- Activity:** Wrap up with a reflective discussion on the storytelling activity.
 - Questions to ask:**
 - "How did it feel to tell a story in English?"
 - "What was the most challenging part?"
 - "Did you learn any new words or expressions?"
- Purpose:** Allow students to share thoughts and consolidate learning from the session.
- Outcome:** Students develop metacognitive awareness of their language learning process and feel a sense of closure.

Assessment:

- Informal:** Observe students' participation, language use, and comfort with speaking.
- Reflection:** Gauge student self-assessment in the final discussion.

Follow-up:

For homework, students can write a short paragraph about their story or create a "sequel" to present in the next lesson.

Note. Own authorship.

3.8.2 Other AI Generations

Figures 3.7 and 3.8 represent lesson plans generated by other artificial intelligence resources, responding to the same prompt introduced in ChatGPT.

Figure 3.7 Lesson Plan Generated by Perplexity

Luisavalle92195

Now

+ Space / Provide a lesson plan for an EFL les...

Provide a lesson plan for an EFL lesson for 25 students with a B1 level. Students will explore the theme of storytelling. The main objective is for students to enhance their English language skills through engaging storytelling activities. The lesson will commence with a brief introduction to the importance of storytelling in language development. Students will then actively participate in a storytelling session, sharing personal anecdotes in English. This will be followed by a group activity where students collaboratively create and present short stories. The lesson wraps up with a class discussion, providing an opportunity for students to reflect on their storytelling experiences and further practice English conversation. The lesson plan emphasizes interactive and communicative approaches to foster language proficiency in an EFL context.

Answer

EFL Lesson Plan: Exploring Storytelling

Lesson Overview

Level:

B1 (Intermediate)

Duration:

90 minutes

Number of Students:

25

Theme:

Storytelling

Main Objective:

Enhance English language skills through engaging storytelling activities.

Learning Outcomes

By the end of the lesson, students will be able to:

Understand the importance of storytelling in language development.

Share personal anecdotes in English.

Collaborate to create and present a short story.

Reflect on their storytelling experiences and engage in conversation.

Materials Needed

Whiteboard and markers

Sticky notes or index cards

Timer

Projector (optional for visuals)

Handouts with storytelling prompts (optional)

Lesson Structure

1. Introduction to Storytelling (15 minutes)

Activity:

Brief discussion on the importance of storytelling.

Ask students questions such as:

"What makes a good story?"

"Why do we tell stories?"

"How can storytelling help us learn a language?"

Write key points on the whiteboard (e.g., creativity, vocabulary expansion, cultural understanding).

2. Personal Anecdotes Sharing (20 minutes)

Activity:

Anecdote Sharing in Pairs

Pair students up and give them 5 minutes to think of a personal story they would like to share.

Each student takes turns sharing their anecdote for about 2-3 minutes while the other listens.

After sharing, partners provide feedback on what they enjoyed about each other's stories.

3. Group Story Creation (30 minutes)

Activity:

Collaborative Storytelling

Divide students into groups of five.

Each group will create a short story using the following structure:

Beginning:

Introduce characters and setting.

Middle:

Present a conflict or challenge.

End:

Resolve the conflict.

Provide each group with sticky notes or index cards to jot down ideas and organize their story.

Allow groups 20 minutes to create their stories.

4. Story Presentation (15 minutes)

Activity:

Group Presentations

Each group presents their story to the class (3 minutes per group).

Encourage creativity—groups can use gestures, expressions, or even props if available.

5. Class Discussion and Reflection (10 minutes)

Activity:

Reflective Discussion

Facilitate a class discussion with questions like:

"What did you enjoy most about storytelling today?"

"What challenges did you face when creating your story?"

"How did your vocabulary improve through this activity?"

Encourage students to express their thoughts in English, promoting conversation practice.

Assessment and Feedback

Observe student participation during pair sharing and group activities.

Provide constructive feedback on their storytelling techniques and language use during presentations.

Encourage peer feedback during the reflection discussion.

Homework (Optional)

Ask students to write a short story at home based on a prompt you provide or one they come up with themselves. This can be shared in the next class for further practice.

Conclusion

This lesson plan emphasizes interactive and communicative approaches to enhance English language proficiency through storytelling. By engaging in personal anecdotes and collaborative creation, students will not only improve their language skills but also enjoy the process of learning through creativity and expression.

Share

Rewrite

Note. Own authorship.

Figure 3.8 Lesson Plan Generated by Gemini (developed by Google)

The screenshot displays the Gemini AI interface. On the left, a sidebar contains a menu icon and a plus sign. The main chat area shows a prompt: "Provide a lesson plan for an EFL lesson for 25 students with a B1 level. Students will explore the theme of storytelling. The main objective is for students to enhance their English language skills through engaging storytelling activities. The lesson will ...". Below the prompt, the generated lesson plan is displayed, titled "EFL Lesson Plan: The Art of Storytelling (B1)". The lesson plan includes a theme, level, objectives, materials, procedure, and differentiation/assessment sections. The procedure is divided into five steps: Warm-up, Presentation, Storytelling Session, Collaborative Storytelling, and Reflection & Discussion. The bottom of the interface features a toolbar with icons for sharing, editing, and other functions.

EFL Lesson Plan: The Art of Storytelling (B1)
 Theme: Storytelling (60 minutes)
 Level: B1 (25 students)
 Objectives:

- Understand importance of storytelling in language development.
- Share personal anecdotes in English.
- Collaborate to create and present short stories.
- Reflect on storytelling experiences and discuss them.

Materials: Whiteboard, markers, paper, sticky notes (optional timer)

Procedure:

1. **Warm-up (5 min):** Share favorite childhood stories. Discuss elements of good stories.
2. **Presentation (5 min):** Introduce theme, highlight role of storytelling in language development.
3. **Storytelling Session (20 min):**
 - **Individual Sharing (10 min):** Pair students, share personal anecdotes using past tense and descriptive language.
 - **Feedback & Discussion (10 min):** Volunteers share stories with class, receive feedback.
4. **Collaborative Storytelling (20 min):**
 - **Group Formation (5 min):** Divide class into groups (4-5), assign themes.
 - **Story Building (10 min):** Groups collaborate to create short stories using assigned themes.
 - **Presentations (5 min):** Groups present stories, using creative techniques to engage audience.
5. **Reflection & Discussion (10 min):** Discuss learning, challenges, and enjoyment of storytelling. Wrap-up: summarize key points, encourage continued practice.

Differentiation & Assessment: Adapt based on student needs. Observe participation, provide feedback on language and storytelling techniques. Collect written stories (optional) to assess vocabulary, grammar, and organization.

Extension Activities: Encourage students to write and share their own stories, record and share stories, or explore different storytelling traditions from other cultures.

This interactive and communicative lesson plan promotes EFL learning through engaging storytelling activities. Remember to adapt and personalize it for your students.

Note. Own authorship.

As shown in **Figures 3.7** and **3.8**, each of the systems generates lesson plans with similar structures and responds partially to the information provided by the prompt, yet each may be influenced by its algorithms and databases. Thus, despite responding to the same command, lesson plans may vary in terms of the level of detail of the activities, creativity in their designs, and so on. This raises awareness to consider how each system's particularities might affect the quality and diversity of the lessons generated. ChatGPT was selected for the study given its increasing popularity in education, demonstrating its easy accessibility and adaptability to different contexts. This trend suggests that researchers and educators are becoming interested in integrating artificial intelligence tools into teacher practices, allowing them to explore how these technologies can assist educational processes.

3.9 Concluding Remarks

This chapter discussed the different notions of Lesson Planning in the field of EFL teaching, reviewing some of the existing models and the most common approaches that support this process. It was considered essential to adopt a precise definition of lesson plan, which was understood as the detailed "road map" that guides the teacher in achieving an effective lesson, and which represents the basis for exploring the components present in the lesson plans of in-service and pre-service EFL teachers in the context of this research. Analyzing lesson planning formats, language teaching methodologies, and technological integration was fundamental to understanding the relationship among these elements in education. This review identified traditional and modern models and strategies, providing a framework for evaluating the productions and perspectives of the study's participants.

The next chapter describes the methodology used to investigate the similarities and differences between AI-generated lesson plans and those created by pre-service and in-service English teachers, as well as their perceptions of AI in lesson planning. The research design, data collection methods, and analysis procedures are described in detail. It also presents the participants' profiles, validity and the ethical considerations suggested for the study.

CHAPTER 4 METHODOLOGY

4.1 Chapter Overview

This study aims to a) identify the similarities and differences between lesson plans generated by artificial intelligence (AI) and those by EFL pre-service and in-service teachers and b) teachers' perceptions of the use of AI in lesson planning. Therefore, this section delves into the study's design and implementation, providing a framework for understanding the research process. It begins by addressing the research method, setting, and participant's characteristics. Besides, the research design is explained, detailing the specific strategies and procedures employed for data collection. The section also discusses the methods and analyses chosen to ensure the validity and reliability of the results. Lastly, the ethical considerations implemented throughout the research to safeguard the well-being of the involved participants are presented.

4.2 Research Approach and Design

Given the need to explore an emerging phenomenon with limited prior research, this study adopted a qualitative descriptive research design to identify similarities and differences between AI-generated lesson plans and those created by EFL pre-service and in-service teachers through documentary analysis. Qualitative research typically takes place in natural settings, focuses on context, and is emergent and evolving rather than tightly prefigured (Marshall & Rossman, 2014). It involves reporting results without using quantitative data or statistical analysis (Hamilton & Finley, 2019). In contrast to quantitative methods, the qualitative approach requires "a purposeful sampling, collection of open-ended data, analysis of text or images (e.g., pictures), representation of information in figures and tables, and personal interpretation of the findings" (Creswell & Creswell, 2018, p. 35). The decision of a qualitative method is justified by the unexplored nature of the phenomenon and the limited existing literature (Creswell & Creswell, 2018).

Additionally, the study gathered participants' perspectives on the integration of artificial intelligence in lesson planning through semi-structured interviews for further analysis. They included a question guide that contributes to the achievement of the research objectives (Adeoye-Olatunde & Olenik, 2021). The descriptive design represents, therefore, an enhanced detailed approach to describe a phenomenon scarcely studied (Bradshaw et al., 2017). This approach leads to a detailed and contextually rich insight into the role of artificial intelligence in ESL lesson planning by analyzing documents and interviewing key participants, thereby contributing to the enrichment of the existing knowledge in this research area.

Table 4.1 shows the data collection methods used to identify the differences between the lesson plans made by teachers and ChatGPT as well as their perceptions. Moreover, it specifies the objectives behind the decision regarding this methodology and how the samples were analyzed.

Table 4.1 *Summary of Data Collection Methods and Procedures*

Research Question (RQ)	Data Collection Methods	Objectives	Data Analysis
RQ1. What components can be identified in the lesson plans designed by pre-service and in-service teachers and Chat GPT?	Digital lesson plans Lesson plan checklist or grid	Obtain and identify representative features found in lesson plans developed by pre-service and in-service teachers and those generated by ChatGPT. Identify the components proposed by the literature in the lesson plans by ChatGPT and the teachers.	Document analysis to review and discuss in detail the contents of the lesson plans.
RQ2. What similarities and differences can be identified in the lesson plans and methodologies produced by pre-service and in-service teachers and Chat GPT?	Digital lesson plans	Obtain and identify representative features found in lesson plans developed by pre-service and in-service teachers and those generated by ChatGPT.	Document analysis to review and discuss in detail the contents of the lesson plans. Checklist to create a systematic structure to compare lesson plans and identify similarities and differences.
RQ3. What are pre-service and in-service teachers' views of the use of AI in lesson planning?	Semi-structured interviews via video conferencing	To explore teachers' perspectives regarding the use of ChatGPT in terms of lesson planning in English teaching.	Thematic analysis to identify, discuss, and reveal patterns in EFL pre-service and in-service teachers' responses.

4.3 Research Site and Participants

4.3.1 Research Site

This research does not involve a specific research context, but the participants belong to the same research site, which might have influenced their views of lesson planning. The participants include a group of EFL pre-service language teachers and a group of in-service

language teachers from the Bachelor of Foreign Languages (English and French) program at Universidad del Valle. This program trains future graduates in Foreign Languages with skills in teaching English and French or being linguistic and cultural mediators. As part of their training, students attend and pass the courses Action Research, Didactics, Pedagogy, Applied Linguistics, and Principles of Language Acquisition, among others. These courses are intended to prepare students to investigate and address problems related to education, specifically in foreign language teaching, by integrating theory and practice, using research methods, and reflecting on current education issues.

Students also analyze and design lesson plans based on methodological approaches, Colombian linguistic policy guidelines, and pedagogical research techniques to effectively prepare them for teaching practice. These practices begin once the student has satisfactorily accomplished these courses along with the foreign language skills. English and French courses might provide students with the opportunity to gain insights into the diverse methodologies and approaches of their teachers, which can serve as significant references for their professional performance in the future. Likewise, it encourages the critical and creative use of digital resources in foreign language teaching, providing future teachers with the opportunity to create learning experiences, adapted to students' needs.

By including EFL pre-service teachers, who are still undergoing formal training, and in-service teachers, who bring their practical classroom experience, the study aimed to capture an understanding of the impact and perceptions of AI in lesson planning. Hence, these two approaches contribute to a comparative analysis to explore current teaching methodologies and insights into the perceptions of technologies such as ChatGPT in lesson planning.

4.3.2 Participants

For this research, six participants voluntarily participated: four pre-service teachers enrolled in the ninth and tenth semesters of the Foreign Languages degree at Universidad del Valle, and two in-service teachers who graduated from the same program. The recruitment process involved inviting students in the last semesters of the undergraduate program in Foreign Languages and alumni with teaching experience through email and personal contact. The selection targeted pre-service teachers with at least one year of experience in public or private settings and in-service teachers with over three years of experience. Participants provided informed consent ([Appendix 1](#)) before being enrolled in the study with detailed information about the objectives and procedures of the research.

This sampling decision was intended to obtain different perspectives from both types of participants. First, selecting two in-service teachers is guided by the knowledge and different pedagogical approaches they have acquired through their experience teaching the language. Second, the recruitment of four teachers in the final stages of their training is intended to explore the perceptions and teaching practices of those who are still receiving formal education but are about to join a professional teaching career in Foreign Languages. Table 4.2 summarizes the participants' profiles.

As presented in Table 4.2, participants include four pre-service teachers (PST) and two in-service teachers (IST), varying in age, teaching experience, teaching contexts, frequency of planning, and use of AI. PSTs are younger (21-22 years old) with 1-4 years of teaching experience in private institutions and public schools. All teachers plan weekly or per class and have used ChatGPT at least once either for lesson planning or other purposes. ISTs have longer teaching experience (5 and 20 years) and work in schools or public institutions. It is noteworthy that only one in-service teacher made use of AI for planning purposes. Therefore, diversity in levels of experience, settings, and use of AI provides a broader perspective on the integration of AI in multiple teaching contexts.

Table 3.2 *Participants Profiles*

Participant	Age	Teaching experience	Teaching context	Frequently plans	Uses AI in lesson planning, materials, etc.
Pre-service teachers (<i>n</i> = 4)					
PST1	21	4 years	Schools and Institutes	Every week	Yes
PST2	21	1 year	Private Institutions	Every week	Yes
PST3	22	2 years	Private English Institute and CLC (Centro de Lenguas y Cultura)	Every class	Yes
PST4	22	1 year	Freelancers and Private Institutions	Every week	Yes
In-service teachers (<i>n</i> = 2)					
IST1	43	20 years	Schools	Every day	No

IST2	25	5 years	Private classes and public institutions	Every day	Yes
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4.4 Data Collection Methods and Procedures

4.4.1 Data Collection Methods

This research employed different instruments to collect data regarding the integration of AI tools in lesson planning. Semi-structured interviews were used to gain insight into the participants, exploring their perceptions and experiences with lesson planning and the use of AI in education. Moreover, lesson plans generated by teachers and by the AI were analyzed to compare their structures and approaches. These instruments contributed to a comprehensive insight into how AI influences lesson planning and the teaching-learning process.

4.4.1.1 Lesson Plans

According to Fujii (2019), a lesson plan denotes “a document that describes the research theme, content goals, connections between the current content and related content from former and later grades, the rationale for the chosen approach, a detailed plan for the research lesson, anticipated student thinking, data collection, and more” (p. 684). For the present study, lesson plans were collected from ChatGPT and teacher productions for a detailed comparison of differences and similarities between components and approaches. Table 4.3 presents the total number of productions collected and analyzed per type of participant during the research.

Table 4.3 *Lesson Plans Collected*

Type of participant	Number of participants	Number of lesson plans
PST (Pre-service teacher)	4	12
IST (In-service teacher)	2	6
AI (ChatGPT)	1	3
Total	7	21

As seen in Table 4.3, PST provided more lesson plans as they were usually required to plan lessons in their jobs. IST provided fewer lesson plans given that they are more experienced than PST and plan less. Three lesson plans were generated by ChatGPT given that the prompt given yielded similar results. To create uniformity in the data, prompts were created with instructions for the full creation of lesson plans for both types of participants. These prompts or instructions included relevant elements such as the class size, level of English proficiency, focused language skills (e.g. speaking, listening, writing), class time, etc., to create specific and

fictitious English teaching contexts. Figure 4.1 shows one of the three prompts given to ChatGPT and the teachers for the creation of the lesson plans (See [Appendix 2](#)).

Figure 4.1 Lesson Plan Prompt No.1

You are going to plan a lesson considering the following information: Subject: English (EFL). Type of institution: Public. Grade: 7°. Class size: 35. Ages: 12- 15 years old. Level: A2.1 according to the Common European Framework of Reference for Languages (CEFR). Thematic content: Daily routines. Focus on language skills: Speaking, writing, and culture. Class duration: 60 minutes. Note: You can propose any lesson plan structure and methodology.
--

As shown in Figure 4.1, the structure and methodology were fully left to the participants, encouraging their creativity and adaptability to the specific context. Teachers had the freedom to create lesson plans from zero or to share existing ones from various settings, such as English language institutes, schools, clubs, and courses. This approach allowed for a broader range of lesson plans that reflected real-world teaching scenarios and diverse classroom environments, enriching the data for analysis. Consequently, the study incorporated machine-generated content and teachers' lesson plans, pursuing a comprehensive comparison of teaching components and approaches and, eventually, providing information on the integration of artificial intelligence into educational practices.

Finally, to enhance the validity of the samples, the lesson plans were submitted electronically to avoid transcription and reading inaccuracies. Once the teachers had developed or shared their plans at home within the agreed time, they sent them to the researcher via Google Drive. In this way, the researcher was able to collect them since the digital documents could be easily organized, edited, and shared by the participants. Figure 4.2 illustrates how the lesson plans were stored.

Figure 4.2 *Storage of Lesson Plans*

Name	Owner	Last modified	File size
AI (ChatGPT)	me	Apr 2, 2024	—
IST (In-service teachers)	me	Apr 2, 2024	—
PST (Pre-service teachers)	me	Apr 2, 2024	—

Name	Owner	Last modified	File size
PST1JCOP	me	Jun 6, 2024	—
PST2JJGE	me	Jun 6, 2024	—
PST3JCMR	me	Jun 6, 2024	—
PST4SAG	me	Jun 6, 2024	—

Name	Owner	Last modified	File size
PST2#3JJGE	me	Aug 19, 2024	153 KB
PST2#2JJGE	me	Aug 19, 2024	106 KB
PST2#1JJGE	me	Aug 19, 2024	106 KB

First, the files were categorized according to the type of participant: ChatGPT, pre-service teachers, and in-service teachers. Then, a folder was created for each teacher, labeling them as PST (Pre-service Teacher) or IST (In-service Teacher), followed by the participant number and the initials of their name so they could be easily identified. Lesson plans were tagged with the participant number and type, the lesson plan number, and the initials of the participant, e.g. PST2#1 JJGE. For the plans generated by ChatGPT, names such as AI#1, AI#2, and AI#3 were used. This precise organization not only optimized access to the lesson plans but also ensured a clear differentiation between the contributions of each group, leading to a more effective analysis of their productions.

4.4.1.2 Interview

As a recognized element of qualitative data collection, a semi-structured interview was conducted with each of the six teachers individually via video conferencing. Using interviews, the researcher aimed to obtain the participant's subjective perception of a phenomenon

(McGrath et al., 2019). This approach, aligned with the qualitative interview methodology by Creswell and Creswell (2018), involved planning open-ended questions to collect teachers' perceptions about lesson plans generated by ChatGPT and their views on artificial intelligence in lesson planning. As suggested by the authors, interviews included recordings and note-taking to capture responses. The researcher conducted the interviews following a previously elaborated protocol (See [Appendix 3](#)) consisting of 21 questions divided into three sections, each intended to investigate particular aspects:

- **Section 1: Participants' demographic information:** This section provided an overview of each teacher's profile regarding personal background, educational qualifications, and professional experience. These data allow us to analyze whether the approach to and perceptions of teaching and planning varied among teachers based demographic and professional characteristics.
- **Section 2: Views of planning:** This section explored teachers' attitudes and practices towards lesson planning. Questions were designed to identify teachers' preferences, practices, and focus when planning, along with the resources they used. It also examined the issues they faced, providing a view of the experiences and challenges in developing lesson plans. This allowed the researcher to learn how teachers managed planning and how essential they considered it to be in their practice.
- **Views on Artificial Intelligence:** The final section explored teachers' perceptions of the use of artificial intelligence, particularly ChatGPT, in creating lesson plans and assisting with teaching. Questions addressed participants' existing experiences with AI, their insights into the advantages and challenges of integrating it into education, as well as their ethical considerations about its use. While exploring their expectations and concerns, this section provided insight into the future implications of AI in EFL teaching and offered the researcher an opportunity to examine the teachers' perspective on the possibility of AI complementing or replacing educators in the future.

The protocol was carefully designed by the researcher along with the study supervisor, ensuring that the questions were clear and appropriate to meet the aims of the study. The questions were designed to minimize possible biases and to guarantee that participants were able to express their thoughts openly and in detail. Besides, the protocol was designed to create a comfortable and workable setting during the interviews, facilitating the collection of accurate and relevant data for the analysis. The interviews were recorded with the consent of the participants to facilitate the transcription of their responses and were held after the deadline for

submission of their productions. This allowed participants to gain more robust context and more detailed and thoughtful insights into their experience-based approaches. Using an example of the plans generated by artificial intelligence facilitated discussion and feedback from participants during the last section of the interview.

4.4.2 Data Collection Procedures

To effectively address the research questions, the researcher systematically organized the data collection process into multiple phases, as depicted in Table 4.4.

Table 4.4 *Data collection phases*

Phase 1: Designing Data Collection Elements	Phase 2: Collecting Lesson Plans	Phase 3: Collecting Teachers' Perceptions Through Interviews
<i>March - April</i>	<i>May - July</i>	<i>July - August</i>
Prompts and Interview Protocol	Lesson Plans Collection via Google Drive	Videoconferences

4.4.2.1 Phase 1: Designing Data Collection Elements

The data collection process covered about six months, from March to August 2024. In the first phase, detailed prompts were developed to be provided to ChatGPT and participants. These prompts specified aspects such as the number of students, English proficiency level, focused language skills (e.g., speaking, listening, writing), and time considerations. The researcher shaped and enhanced the prompts through a dynamic collaboration, adjusting and validating them with insights from one expert in EFL teaching. The EFL expert refined the prompt, aligning it with current teaching principles. This process guaranteed that the prompts accurately and authentically reflected the contexts in the field. The interview protocol, consisting of three sections and a total of 21 questions, was also designed.

Subsequently, during March and April, the researcher recruited participants for the study. It was crucial to establish contact with the participants and secure their commitment, considering their availability and professional contexts. Once their participation was confirmed, participants received three identical prompts and based on their experience and knowledge, developed three plans from home and within a three-month deadline. This process only involved those participants who agreed to do the task from zero, the rest of the participants submitted lesson plans designed for other contexts.

4.4.2.2 Phase 2: Collecting Lesson Plans

In the second phase, lesson plans were collected and stored in Google Drive as they were shared by participants. Each plan was systematically labeled to ensure effective organization and to facilitate future analysis. A naming format included the type of participant (ChatGPT, trainee teacher, or in-service teacher), as well as an identification number and the author's initials. This method ensured rapid referencing and categorization, thus assuring that each document was easily identifiable within the database. As the productions were received, the researcher reviewed each plan to ensure that it met the agreed specifications. This careful revision not only ensured the quality of the lessons but also helped to identify common patterns and approaches among the participants' plans. Furthermore, relevant observations and comments were documented and were useful for further analysis, providing a more in-depth comparison between the lesson plans generated by ChatGPT and by the teachers.

4.4.2.3 Phase 3: Collecting Teachers' Perceptions of AI Through Interviews

In this last phase, interviews were conducted during the last two months of data collection, specifically at the end of July and August of 2024, adjusting to the availability of the participants. Each interview was held via Google Meet according to the teachers' schedules and preferences. Before beginning, participants were reminded of the objectives of the study and asked for their consent to record their responses for research purposes. This process captured participants' perceptions of the lesson plans generated by ChatGPT and their views on the integration of AI in teaching.

4.5 Data Analysis

Data collected from lesson plans were examined through document analysis in ATLAS.ti and a checklist. This method consists of reviewing documents to establish a context, create questions, complement other data, register data changes, or verify information (Dalglish et al., 2020). Some scholars collect pre-existing documents to analyze (Morgan, 2022), however, the researcher of this study led the collection of data obtained from the participants for further analysis. This analysis allowed us to compare and discuss the findings obtained from the collected plans, bringing the study to a conclusion of the results. Furthermore, a careful review and categorization of interview transcriptions using ATLAS.ti assisted the researcher in identifying patterns among participants' responses, providing a comprehensive understanding of their perceptions.

4.5.1 Lesson Plans Analysis

Documents, such as lesson plans acquired from ChatGPT and the teachers were archived on Google Drive, utilizing data coding to categorize the information (See Figure 4.2). This coding assisted in identifying the distinction between lesson plans developed by artificial intelligence and those developed by teachers. This archiving process supported a thorough examination of the collected materials using ATLAS.ti, identifying patterns, trends, and specific features within the lesson plans generated by the three sources. The lesson plans were uploaded to the program in PDF format to subsequently create codes and groups to facilitate data analysis and the identification of frequencies and trends regarding the number of times each component of planning appeared in the documents per type of participant. This analysis and coding stage were reviewed and approved by the tutor to ensure the reliability of the results obtained. This document analysis phase directly addressed the research questions concerning the similarities and differences in structures and lengths of lesson plans made by pre-service and in-service teachers and ChatGPT.

Figure 4.4 Coding and Analysis of Lesson Plan Components Using ATLAS.ti

Code Manager		Document Manager			
Search Code Groups		Search Entities			
Code Groups		Show codes in group Activities			
		Name	Grounded	Density	Groups
Activities	(26)				
Assessment	(3)	Activity 1 PST		2	0 [Activities]
Closure	(3)	Activity 2 PST		3	0 [Activities]
Context/Lesson plan details	(3)	Activity 3 PST		2	0 [Activities]
Independent work	(3)	Activity 4 PST		1	0 [Activities]
Objectives/learning outcomes	(3)	Activity IST		1	0 [Activities]
Other components	(8)	Beginning PST		1	0 [Activities]
Resources	(3)	End PST		1	0 [Activities]
Warm-up	(3)	First part PST		2	0 [Activities]
		Group presentations GPT		1	0 [Activities]
		Introduction to vocabulary GPT		1	0 [Activities]
		Lesson IST		2	0 [Activities]
		Listening activity GPT		2	0 [Activities]

As seen in Figure 4.4, code groups were established to analyze the components of the literature review (Lesson details, objectives, resources, etc.). Individual codes reflect the components found in the lesson plans, keeping the original names given by the participants. Components that did not fit into these categories were grouped under the label ‘Other components’. The program used for the analysis showed the density of each component in the lesson plans and the frequency of occurrence within the code groups. For example, the code group ‘Activities’ recorded the highest number of components found in the lesson plans (26).

Within this group, codes retain the name of the component along with the type of participant, as in the cases of ‘Activity 1 PST’, ‘Listening Activity GPT’ and ‘Lesson IST.’

The researcher also analyzed the lesson plans using a checklist designed specifically for this study, which allowed for a systematic evaluation of the participants’ productions. Based on a literature review and revised by the research supervisor, the checklist included the components selected for comparative analysis and matched the participant identification in Google Drive. Figure 4.5 exemplifies the digitization and analysis of the data obtained from the lesson plans.

Figure 4.5 Analysis of Lesson Plan Components Using a Checklist

Type of participant: AI (ChatGPT)							
Lesson plan number_code	COMPONENTS						
	LESSON DETAILS		EXAMPLE	COMMENTS	OBJECTIVES		EXAMPLE
	YES	NO			YES	NO	
AI#1	☒	☐	Given the information provided, I'll structure a comprehensive lesson plan focusing on "Daily Routines" for a 7th-grade English as a Foreign Language (EFL) class.	The AI repeats the information from the prompt.	☒	☐	Objective: Students will be able to describe their daily routines and compare them with those in English-speaking countries, using the present simple tense.

During the analysis, the researcher marked the presence or absence of each component in the lesson plans. To enrich the findings, the researcher included textual quotations that illustrated how these components appeared in the productions, enhancing the understanding of the teaching strategies employed by the participants. This approach facilitated a detailed and coherent evaluation of the lesson plans while ensuring the validity and reliability of the results.

4.5.2 Interviews Analysis

The six semi-structured interviews with participants were conducted. After completing the interviews, the responses were transcribed using an artificial intelligence software tool (SpeechNotes.co). However, the researcher re-listened to, reviewed, and edited these transcripts to correct possible machine-generated errors without altering the participants’ responses. This ensured that the information obtained from the interviews was accurate and did not affect the process of analyzing the research results. The transcripts were stored in Google Drive within folders belonging to each participant and edited in Google Docs so that only the questions and participants’ responses remained, without modifying their answers. Additionally,

key information present in the responses was highlighted in yellow to facilitate the analysis of the documents, as illustrated in Figure 4.6.

Figure 4.6 Interview transcript example

What is your view on planning?
{ 1:36 }
I think planning is really important because when I started teaching as a teacher, I didn't or I didn't plan at all. So when I started planning, it was life changing because now I have like a background and a plan on what I was going to do and everything had an objective. So it was not just like: "OK, so I'm going to teach this today, and this maybe tomorrow". But if something went wrong, for example, I have like a second plan on what to do, but everything was clear. It's like when you have, when you are making a cake and you have the instructions, it's better because now you know what to do next and if something happens, you know what to do then. But if you just make it by heart, for example, like you may know the ingredients, but if something goes, if something goes wrong, you're not going to know what happened or why or at which point and the things went by wrong. So I think it's something like that, like instructions for a class.

The documents with the transcripts were uploaded in PDF format to the ATLAS.ti program for the process of categorization and selection of relevant information to answer the research questions. Categories were created for each interview question, and in some cases, similar categories were grouped to facilitate the analysis (See a sample in Table 4.5).

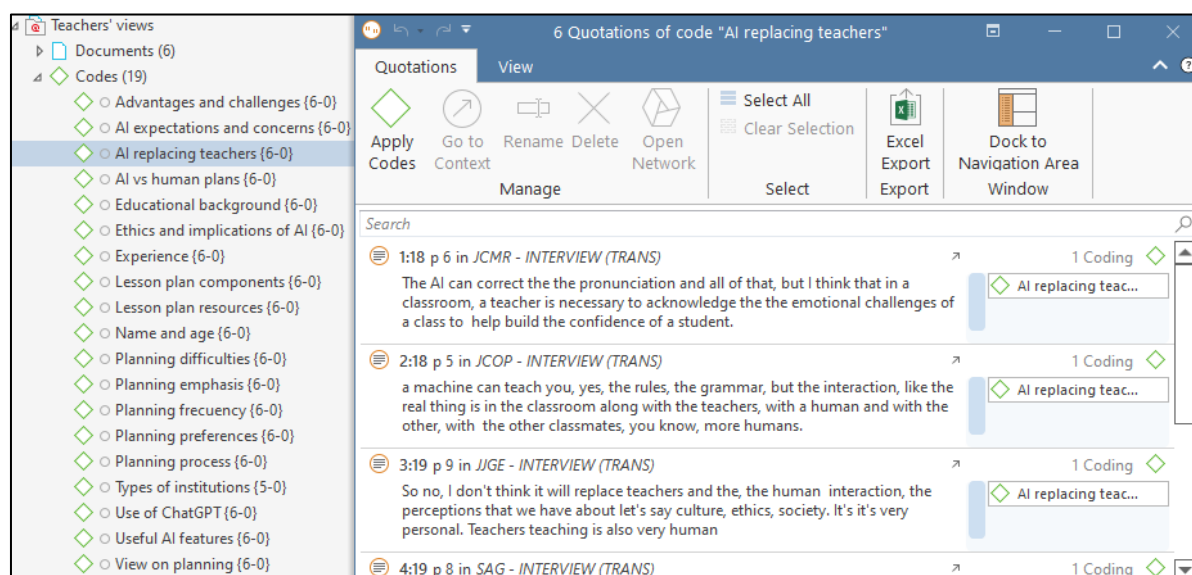
Table 4.5 Coding for interview analysis

SECTION 1: DEMOGRAPHIC INFORMATION	
Code	Question
Name and age	What is your full name? How old are you?
Educational background	What is your educational background?
Experience	How many years of experience do you have teaching English? Which proficiency levels have you taught?
Types of institutions	In what kinds of educational institutions have you been employed?
SECTION 2: VIEWS ON PLANNING	
View on planning	What is your view on planning?

Planning preferences	What do you like about planning?
Planning Process	How do you plan a lesson?
Planning emphasis	What is your emphasis when planning?
Lesson plan resources	What resources do you use when planning?
Lesson plan components	What are the components of your lesson plan?
Planning frequency	How often do you plan?
Planning difficulties	What are the difficulties you encounter when planning?
SECTION 3: VIEWS ON AI	
Use of ChatGPT	Have you used ChatGPT for lesson planning, finding materials, etc? If so, why?
Advantages of AI, Challenges of AI	What are the advantages and challenges you perceive in utilizing artificial intelligence for lesson planning?
AI vs human plans	In your opinion, what are the distinctions between lesson plans generated by artificial intelligence and those crafted by yourself?
Useful AI features	What aspects of the lesson plans generated by ChatGPT did you find most useful or interesting? Do you think these aspects could be implemented in your lesson plans?
AI expectations, AI concerns	What are your expectations and concerns about integrating artificial intelligence into teaching practices?
Ethics and implications of AI	What are your thoughts on the ethics of using AI in education? What are your insights on the future implications of AI in EFL teaching?
AI replacing teachers	Do you believe AI can replace teachers in the future? Why?

The responses found in the transcripts were assigned to their respective categories. Clicking on a category opens a window that provides a total view of all the responses related to that particular question, as seen in Figure 4.7.

Figure 4.7 Analysis of Interview transcripts using ATLAS.ti



This method allowed for a more efficient examination of the data and helped identify patterns and insights across the participants' responses. Moreover, this research prioritized ethical considerations during and after the interviews to ensure participant protection based on the interview protocol suggested by Creswell and Creswell (2018). This combined approach, integrating content analysis and teacher perspectives, aimed to provide a thorough understanding of ChatGPT's role in EFL teaching.

4.6 Validity and Reliability

In qualitative studies, the researcher conducts specific procedures to confirm the precision of the data collected (Cresswell & Cresswell, 2018). Since this process plays a crucial role in any study, numerous strategies can be employed. To ensure the validity of this study, the researcher developed a complex and detailed description of the research methodology and procedures and employed peer debriefing to obtain an extra evaluation of the results obtained to verify the information reported. Moreover, researchers must document each and all the steps implemented in the study (Cresswell & Cresswell, 2018), thus ensuring the reliability of the data presented. Therefore, a detailed review of the transcriptions obtained from the interviews was made during the study, to identify errors and correct them in time.

Additionally, the researcher utilized triangulation as a strategy to enhance the credibility of the findings from different sources (Carter et al., 2014). By comparing data collected from the lesson plans and interviews, the researcher identified consistencies and discrepancies, providing a more comprehensive understanding of the participants' perspectives on lesson planning and the use of artificial intelligence in education. The careful integration of

different data sources enriched the analysis and fortified the overall conclusions drawn from the study, ensuring a robust exploration of the research questions. Furthermore, the researcher received constant feedback from the research supervisor throughout the process, allowing for iterative refinement of the research approach and fostering greater transparency in the findings.

4.7 Ethical Considerations

Rigorous measures were applied before, during, and after the study. First, participants signed a consent expressing their willingness to participate in the study, ensuring that they were fully informed about its nature and goals. The researcher tried to establish a friendly relationship with the participants without interfering with the data, also respecting their freedom to leave the study at any time without any consequences. Furthermore, their identity was protected through anonymity, and all personal information was treated confidentially and stored safely. In this study, ChatGPT served as an object of research, allowing the exploration of its capabilities in generating lesson plans. Additionally, the researcher used artificial intelligence to facilitate the transcription of audio recordings from the interviews. However, the researcher carefully reviewed and edited these transcriptions to ensure accuracy and to correct any errors generated by the AI, maintaining the integrity of the participants' responses. Particular attention was also paid to avoid any bias in the collection and analysis of data. These measures ensured that the study was conducted according to a strict and thorough ethical protocol, protecting all those involved and maintaining the integrity of the research process.

The AI tool was also used in this research for style correction and proofreading purposes in this way, as it offers several advantages. Firstly, it helps identify and correct grammatical errors, spelling mistakes, and punctuation, ensuring a higher level of accuracy. Additionally, it improves the overall clarity and coherence of the text, making it more professional. The AI tool also allows consistency in writing style, which is crucial in academic research.

4.8 Concluding Remarks

This chapter outlined the methodology of this qualitative descriptive study, which aimed to explore the similarities and differences between lesson plans generated by AI and those by EFL pre-service and in-service teachers, and their perceptions of the use of AI in lesson planning. Data collection and analysis involved lesson plans, semi-structured interviews, a checklist, and documentary analysis using ATLAS.ti, ensuring a thorough examination of participants' insights and productions. The study's phases included participant selection, lesson plan generation, and interviews, all designed to enhance the reliability and validity of the

findings. Ethical measures were implemented to protect participants' identities and ensure informed consent. By employing triangulation to compare findings across different sources, the study reinforced the variability and reliability of the data. The following chapter presents detailed findings of the research.

CHAPTER 5 FINDINGS AND DISCUSSION

5.1 Chapter Overview

This chapter presents the findings of the study and discusses them in light of the theory and research. The study explored the similarities and differences between lesson plans generated by ChatGPT and those of pre-service and in-service EFL teachers, as well as their views of AI in lesson planning. Moreover, its findings can influence teachers' professional training and contribute to the literature on the integration of such technology in language teaching. This chapter consists of three main sections. The first part reports and discusses the results of RQ1 regarding the components identified in each group of lesson plans; the second part focuses on RQ2 about similarities and differences in components and methodologies across lesson plans; and the third part answers RQ3 about teachers' perceptions of AI in lesson planning.

5.2 RQ1 What components and methodologies were identified in the lesson plans designed by pre-service and in-service teachers and Chat GPT?

The analysis revealed that lesson plans created by four pre-service teachers, two in-service teachers, and ChatGPT included similar components such as activities, specific objectives, and materials. The checklist and document analysis revealed that although all groups presented these elements, differences existed in how they named all the components and whether they incorporated additional ones. The following sections present the components identified in the lesson plans, a summary of similarities and differences, and the approaches utilized by each group of participants.

5.2.1 Lesson Plans Generated by ChatGPT

Lesson plans generated by ChatGPT presented a clear structure, with well-defined stages. The components identified in the lesson plans are described below:

- ***Lesson Plan Overview/Context:*** Repeated the same information from the teaching context given in the prompt.
- ***Objective(s):*** Objectives are clear and specific, guiding students toward the expected learning.
- ***Resources/Materials needed:*** Includes items such as whiteboard, computer, and worksheets.
- ***Time:*** An estimated time in minutes is specified for each activity.
- ***Activities:*** The activities are structured in different phases:

- **Warm-up:** A brief discussion is initiated to activate students' prior knowledge.
- **Presentation:** Introduction of new concepts and vocabulary.
- **Practice:** Exercises that reinforce what has been learned.
- **Production:** Application of what has been learned in group activities.
- **Wrap-up and Homework:** Lesson summary and homework assignment.
- **Differentiation Strategies:** Strategies are included for the teacher to tailor activities to the needs of their students.
- **Assessment:** Criteria are established to assess students' progress and understanding of the content.
- **Notes and follow-up:** Additional notes that offer tips or recommendations for implementing the activities.

Figure 5.1 shows a graph with each component found in the lesson plans produced by ChatGPT and their frequency:

Figure 5.1 *Frequency of Components in Lesson Plans Generated by ChatGPT*

Context	3
Objectives	3
Warm-up	3
Presentation	3
Practice	3
Production	3
Wrap-up	3
Resources	3
Time	3
Evaluation	3
Homework	3
Notes	2
Differentiation	2

Based on this small sample of lesson plans ($n = 3$), it can be seen that most components appeared more frequently than others. As shown in Figure 5.1, **Context**, **Objectives**, **Warm-up**, **Presentation**, **Practice**, **Production**, **Wrap-up**, **Resources**, **Time**, **Evaluation**, and **Homework** appeared in all the lesson indicating a generic and structured planning approach. It can be said that ChatGPT consistently implements the most frequent components of a lesson plan, reviewed in the literature (Brown & Lee, 2015). This suggests that ChatGPT-generated lesson plans rely on theory and can be used by experienced and novice teachers to design a lesson.

In contrast, **Differentiation** and **Notes** appeared in 2 of the plans, showing that ChatGPT also addresses diversity and personalization in teaching. Differentiation makes activities

adaptable to different levels and styles of learners, while additional notes offer suggestions for teachers to adjust their plans and classes. However, their apparent limited appearance in the plans may suggest that ChatGPT incorporates them only when the structure requires it or is explicitly stated in the prompt or instruction provided. These findings show that ChatGPT creates generic or more detailed lessons, giving teachers different options to plan their activities.

5.2.2 Lesson Plans Produced by Pre-Service Teachers

Concerning the lesson plans generated by in-service teachers, the following components were identified:

- **Context/Lesson Details:** Provides relevant information about the teaching context.
- **Objective(s):** Objectives are specific and guide students towards the expected learning.
- **Activities:** The activities are structured in different phases:
 - **Warm-up:** Opening activity that helps to motivate students and dynamically start the class. It is also named **Activity 1**.
 - **Pre-task:** Short activity to prepare students for the main task, activating prior knowledge or introducing the topic. Also named **Activity 2, Beginning, First part of the class**.
 - **Task:** The main task of the lesson where students apply new concepts or skills. It is also named **Activity 3, Middle part, and the Second part of the class**.
 - **Post-task:** Closing activity that allows students to consolidate what they have learned and reflect on the task completed. It is also named **Activity 4, Third part of the class**.
- **Closure or End:** Concludes the lesson, recapping the key points and ending the session.
- **Resources/Materials:** Virtual resources such as slides, videos, online materials, etc.
- **Time:** Estimate the time in minutes for each activity. **Notes:** Additional information or results of the lesson.
- **Evaluation:** Description of criteria or tools to evaluate learning.

- **Homework:** Activities or tasks to do at home.
- **Class/Teacher notes:** General notes on the lesson or specific indications.

Figure 5.2 shows a graph with each component found in the 12 lesson plans produced by pre-service teachers and their frequency:

Figure 5.2 *Frequency of Components in Lesson Plans Generated by Pre-service Teachers*

Context	10
Objectives	10
Warm-up , activity 1	12
Beginning, pre-task, first part, activity 2	12
Middle, task, second part, activity 3	9
Post-task, third part, activity 4	8
Closure, end	6
Resources	12
Time	7
Evaluation	4
Contents	3
Class notes	3
Homework	1
Teacher notes	1

According to Figure 5.2, elements with a high frequency (6 – 12) include **Context**, **Objectives**, **Warm-up**, **Pre-task**, **Task**, **Post-task**, **Closing**, **Resources** and **Time**, which are the most used components in the lesson planning theory (Brown & Lee, 2015). This indicates that pre-service language teachers maintain a solid and structured lesson plan, contributing to clarity of purpose and development of each lesson. In contrast, the least frequent components (1 – 4) were **Evaluation**, **Contents**, **Class notes**, **Homework** and **Teacher notes**. While **class notes** and **teacher notes** are not common lesson plan components, it is concerning that **homework** and **evaluation** appeared less frequently. *Evaluation* and *Homework* provide evidence of students' learning and progress through qualitative and quantitative activities. It might be that these two aspects are neglected by these teachers or have a negative quantitative view of them.

5.2.3 Lesson Plans Produced by In-Service Teachers

Regarding the lesson plans developed by in-service teachers, the following components were identified:

- **Context:** Provides relevant background information about the class.

- **Objectives:** Clear statements of what students are expected to achieve by the end of the lesson.
- **Activities**
 - **Warm-up:** Initial activity that helps students get ready for the class.
 - **Pre-task:** Introductory activity to prepare students for the main task, activating prior knowledge.
 - **Task:** Central activity of the lesson where students apply new concepts or skills.
 - **Post-task:** Follow-up activity after the main task to consolidate learning and reflect on acquired knowledge.
 - **Listening Activity:** Focused on improving students' listening comprehension skills.
 - **Speaking Practice:** Activities for students to practice their speaking skills.
 - **Writing Practice:** Activities aimed at enhancing students' writing skills.
 - **Closure:** The final activity of the lesson to review key points and conclude the topic.
- **Resources:** Necessary materials for the lesson, including physical or digital resources.
- **Time:** Estimated duration for each activity within the lesson.
- **Evaluation:** Describes criteria or tools used to assess students' learning and performance.
- **Homework:** Assign tasks to reinforce learning outside of class.

Figure 5.3 shows a graph with each component found in the six lesson plans produced by in-service teachers and their frequency:

Figure 5.3 *Frequency of Components in Lesson Plans Generated by In-service Teachers*

Context	4
Objectives	4
Warm-up	3
Pre-task	1
Task (listening, speaking, writing)	4
Post-task	1
Closure	3
Resources	3
Time	3
Evaluation	1
Homework	1

As shown in Figure 5.3, components such as **Context**, **Objectives**, **Warm-up**, **Task**, **Closure**, **Resources**, and **Time** had high frequencies, appearing 3 or 4 times. This pattern indicates an emphasis on structured lesson design, focusing on setting clear objectives, providing context, and creating smooth transitions across the stages of the lesson. In contrast, **Pre-task**, **Post-task**, **Evaluation** and **Homework** appeared only once in the six lesson plans. It seems that in-service teachers skip the pre-task phase of a lesson, which is characterized by giving input and modelling to the students. It could also be that these lessons were a continuation of a topic, that is why there was more emphasis on the task. *Evaluation* and *Homework* also appeared to be the least mentioned components, probably for the same reasons given above. That is, it might be that these two aspects are neglected by these teachers or have a negative quantitative view of them. Two lessons did not have a structure.

Overall, the results show that the most common components of a lesson plan by ChatGPT were **Context**, **Objectives**, **Warm-up**, **Presentation**, **Practice**, **Production**, **Wrap-up**, **Resources**, **Time**, **Evaluation**, and **Homework**, whereas the least frequently mentioned were **Differentiation** and **Notes**. Regarding PST's lesson plans, **Context**, **Objectives**, **Warm-up**, **Pre-task**, **Task**, **Post-task**, **Closing**, **Resources** and **Time** were frequently identified, whereas **Evaluation**, **Contents**, **Class notes**, **Homework** and **Teacher notes** were the least common. About IST's lesson plans, **Context**, **Objectives**, **Warm-up**, **Task**, **Closure**, **Resources**, and **Time** were commonly identified, while **Pre-task**, **Post-task**, **Evaluation** and **Homework** were less frequent. The next section identifies the similarities and differences in lesson plan structures and methodologies across the three groups of lesson plans.

5.3 RQ2 What similarities and differences can be identified in the lesson plans and methodologies produced by pre-service and in-service teachers and Chat GPT?

5.3.1 Similarities and Differences in Components across Lesson Plans

After analyzing the components in each group of lesson plans, the next section highlights their similarities and differences across the 21 lesson plans and groups (See Table 5.1).

Table 5.1 Similarities and differences in lesson plan components across types of lessons

Components	Total of lessons (N = 21)		
	Pre-service (n = 12)	In-service (n = 6)	Chat-GPT (n = 3)
Context	10	4	3
Objectives	10	4	3
Warm-up , activity 1	12	3	3
Beginning, pre-task, first part, activity 2, presentation	12	1	3
Middle, task, second part, activity 3, practice	9	4	3
Post-task, third part, activity 4, production	8	1	3
Closure, end, wrap-up	6	3	3
Resources	12	3	3
Time	7	3	3
Evaluation	4	1	3
Contents	3	0	0
Class notes	3	0	0
Homework	1	1	3
Teacher notes	1	0	2
Differentiation	0	0	2

Overall, it was identified that all lesson plans included essential components, such as **Context or lesson details, objectives, Warm-up, Pre-task, Task, Post-task, Closure, Resources, Time, Evaluation and Homework**. Although the names varied across stages (namely opening, development and closure), they were present in all the lesson plans, suggesting that regardless of the experience between PST and IST and between humans and AI, these components will always be present in a lesson plan for language teaching. These similarities suggest a shared understanding of the importance of these components and phases in starting and conducting the lesson. Components such as *closure* and *evaluation* evidence the importance of ending lessons with an activity that reinforces what has been learned and measures students' progress. Although these components vary in frequency, their presence indicates that they are an integral part of lesson planning.

Regarding differences, as shown in Table 5.1, the results indicate that **Content, Class notes, Teachers' notes** and **Differentiation** were not shared components across the three groups. *Content* and *class notes* were only implemented by PST, whereas *Differentiation* was only implemented by ChatGPT. Although *Content, Class notes, Teachers' notes* provide information of the teachers' class observations of the class, these are not compulsory components influencing a lesson. In contrast, an interesting finding was *Differentiation*, only found in the ChatGPT plans. This suggests that ChatGPT was able to incorporate differentiated strategies into their plans, something that was not considered by PST and IST explicitly. This component reflects current views of diversity in language teaching. Although *differentiation*

was not explicitly mentioned as a component in the teachers' lesson plans, *differentiation* might have been present in the methodology and stages. Tables 5.2 and 5.3 exemplify the similarities and differences in the components identified among the groups of lesson plans.

Table 5.2 Similarities in Lesson Plan Components

Component: Learning objectives	
Group	Example
AI	**Learning Objectives** By the end of the lesson, students will be able to: 1. Identify and describe key features of local traditions and festivals using simple language. 2. Listen for specific information and main ideas in short talks about local traditions and festivals.
IST	Tema: Daily Routines Objetivos: • <i>Introduce vocabulary related to daily routines.</i> • <i>Practice simple present tense for describing daily routines.</i> • <i>Use The Sims to illustrate daily activities in a gamified way.</i>
Component: Context or Lesson Details	
AI	**Lesson Plan Overview** - **Subject:** English (EFL) - **Grade:** 11th - **Class Size:** 30 students - **Ages:** 16-17 years old - **Level:** A2 (CEFR) - **Thematic Content:** Local traditions and festivals - **Focus:** Listening and speaking skills, culture - **Class Duration:** 45 minutes
PST	Context Grade / level: 5th grade - A1.1 Students' average age: 10 - 12 y/o Number of students: 28 Type of institution: Public institution located in an urban working class area.
Component: Warm-up	
IST	Topic introduction & Warm Up: T will paste some images randomly on the board with the hours and MORNING written next to them, then, will ask the Ss <i>What do they do in the morning?</i> to help them organize the routine in the way they do it. Then, T will write down the vocabulary for each image and ask the Ss to repeat after her. T will explain if we do this the same way MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY it's called a DAILY ROUTINE.

PST	Intro: Grammar review (adjectives). Find Someone Who... : T will give Ss some phrases with “Find someone who...” and they have to find the person (or people) that fit that description. The last one, is “Find someone who likes High School musical”
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Although the components or processes remain consistent across the different plans, they are referred to by other names. This variation in terminology reflects how each participant approaches the lesson planning or is influenced by specific theory or authors, yet the main elements of their plans demonstrate a shared understanding of essential planning components. Table 5.3 shows the components that were common across the groups of lesson plans.

Table 5.3 Differences in Lesson Plan Components

Component: Content			
Group	Example		
	Communicative	Linguistic	Cultural
PST	.. -To provide solutions and advice in English.	-To practice the use of modal verbs for giving suggestions and advice in English.	-To understand students' perceptions towards the making and usage of the egg shaker.
Component: Class/teacher Notes			
PST	Teacher note: They will be given clear instructions on what to observe, compare and analyze		
Component: Differentiation Strategies			
AI	#### Differentiation Strategies: - Offer additional support and simpler tasks for students who may struggle, ensuring they understand basic verbs and expressions. - Challenge more advanced students by asking them to include conditional sentences or express preferences in their presentations and written work.		

Table 5.3 highlights the differences in how the participants addressed specific components. For instance, some components, like **Class/teacher notes** and **Contents**, were found in some lesson plans but not in others. These variations reflect each group’s unique structures and priorities.

In sum, the analysis of lesson plans created by pre-service teachers, in-service teachers, and ChatGPT revealed a shared structure in essential components such as **Context or lesson**

details, objectives, Warm-up, Pre-task, Task, Post-task, Closure, Resources, Time, Evaluation and Homework. Such elements suggest a shared emphasis on structured lesson sequencing. However, differences arise in how each group addresses particular components: AI-generated plans exclusively include differentiation strategies, while pre-service teachers occasionally add content specifications and lecture notes, absent in the in-service teachers' plans. Although basic elements remain the same in all plans, these variations reflect distinctive focuses and priorities among the different groups.

5.3.2 Similarities and Differences in Methodologies Across Lesson Plans

Apart from the differences in components, the study examined pedagogical methodologies across lesson plans. Differences between AI and human-generated plans were identified, revealing variations in methodologies.

5.3.2.1 Methodologies in ChatGPT's Lesson plans

ChatGPT typically implements the PPP approach: Presentation, Practice, and Production (See a sample in Figure 5.4).

Figure 5.4 *The PPP Approach in ChatGPT's Lesson Plans*

2. Presentation (10 minutes) • Briefly explain the use of the present simple tense to describe daily routines. • Present a list of key verbs and expressions related to daily routines (e.g., wake up, get dressed, go to school, etc.). • Show a short video or read a sample text about someone's daily routine, highlighting the structure ("I always...", "I usually...", "I never..."). 3. Practice (15 minutes) • Distribute handouts with a simple text about a daily routine, where students fill in the blanks with verbs in the correct form. • Pair students up and give them cue cards with daily routine activities. They take turns describing their routines or guessing their partner's routine based on the cue cards. 4. Production (15 minutes) • In groups, students prepare a short presentation about their daily routines, incorporating cultural elements if they wish (e.g., typical breakfast in their country an English-speaking country). • Encourage the use of expressions learned in class and correct verb tense.

As seen in Figure 5.4, in the *Presentation* phase, new concepts were introduced, using examples to illustrate their practical application. Grammar is used within communicative situations. The *Practice* phase focused on guided activities in which students were able to practice the new content (mainly grammar) with guidance, ensuring the appropriation of the concepts. Finally, in the *Production* phase, students had the opportunity to use the language

learned in a broader and more communicative and cultural context, which promoted meaningful learning.

Another approach found in ChatGPT was skills-based, focusing on the development of specific competencies through communicative tasks. This approach involves learners interacting with the language in real-life contexts, focusing on listening and speaking, as well as writing and reading skills.

Figure 5.5 *The Skilled-based Approach in ChatGPT*

2. Listening Activity (15 minutes) • Play an audio clip of a short report or documentary excerpt discussing a specific environmental issue (climate change, deforestation, etc.). Ensure the clip is appropriate for a B1 level. • Hand out a listening comprehension worksheet with multiple-choice and short-answer questions focusing on key information, vocabulary, and opinions expressed in the audio clip. • Discuss the answers as a class, clarifying any difficult vocabulary. 3. Reading & Vocabulary (15 minutes) • Distribute a short article or extract (about 200-300 words) related to an environmental success story or innovative solution to an environmental problem. • Have students read individually and then in pairs, discuss the main ideas and any new vocabulary. They can look up words in pairs and share their findings with the class. • Follow up with a vocabulary matching exercise on the board or a handout, linking words to definitions or pictures. 4. Speaking & Culture (20 minutes) • Introduce a cultural aspect by briefly discussing how different countries or communities around the world address environmental issues. Highlight any unique practices or traditions. • In groups, students discuss the following: "How does your community address environmental issues? What can we learn from other cultures in tackling these problems?" • Conduct a class discussion where groups share their insights. Encourage students to use newly learned vocabulary and expressions. 5. Writing Activity (10 minutes) • Prompt students to write a short paragraph (100-150 words) on one of the following: "An environmental issue important to me," "A cultural practice that benefits the environment," or "My role in protecting the environment." • Explain that they should use at least three new vocabulary words from the lesson.
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As shown in Figure 5.5, ChatGPT designed another lesson plan with a skill-based approach, focusing each activity on developing a specific communication skill. This approach ensures that students practice listening, reading, speaking, and writing in a balanced and meaningful way, reinforcing their English proficiency through tasks aligned to their learning needs in each area. Although two approaches were identified in these lessons: PPP and skills-based, both are communicative methodologies that focus on meaning and culture. These two approaches might have been triggered by the prompts given, in which one prompt requested a specific ‘focus on skills’. This indicates that the prompt given to ChatGPT modifies the

structures and approach; however, regardless of the prompt, ChatGPT produces communicative lessons.

5.3.2.2 Methodologies in Teachers' Lesson plans

Pre-service and in-service teachers demonstrated a tendency toward a TBLT (Task-Based Language Teaching) approach in their lessons, as evident in the pre-, while and post-tasks stages. This approach was present even though they provided lesson plans that had been previously designed and implemented. This is also evident in how they integrated communicative tasks and student-centered activities, demonstrating their ability to adapt and apply TBLT principles in communicative situations.

- **Extract 1:** “*Warm-up activity:* Imagine that you’re in an interview, and the person asks you “How would you describe yourself using only one word?” What word would you say? Teacher will ask this question. Each Ss will answer it while introducing themselves to the group. Teacher will ask follow-up questions in order to move to the following stage” (Activity from lesson plan PST1#2)
- **Extract 2:** “*Task:* The Ss will be divided into groups of 4 people (if the entire class is present, there will be one group of 5 people). They will have 10 minutes to leave the classroom and walk around the building. During this walk, they must observe: - How many recycling bins are there in the building? - How many instructional recycling signs are there in the building? - How many plastic bottles do they see on the ground? - Are the recycling bins being used correctly? Once the time is up, the Ss must return to the classroom. Here, the answers of what they observed will be shared, and T will give each group an article (there are 6 groups and 3 articles, so each article will be repeated twice). In groups, Ss must read the article and discuss it among themselves. Each article talks about a student project carried out in schools in the United States. Is it possible to apply these projects in our culture, our context, and our school? Depending on the article, each group will give their answer, which will be discussed as a class” (Extract from lesson plan IST2#2).
- **Extract 3:** “*Post-task:* This activity serves as a complementary listening activity, which is also related to the topics of rooms of the house and will serve as an introduction for the homework. Bluey (room): In this episode the characters talk about why their rooms are important for them and what makes them special which is related to the SS’s upcoming homework. To articulate this with the class the teacher will ask the SS to answer the following questions about the episode: - Why are their rooms important for

Bluey and Bingo? - Who is Gloria? - Name 1 object in Bingo's room and 1 object from Bluey's room. These questions will be shown to the SS before watching the video so they can take notes and keep them in mind while watching the video" (Activity from lesson plan PST3#2).

These stages and activities indicate pre-service and in-service language teachers' understanding of the TBLT approach and their ability to recognize the relevance of tasks in language learning. This is reflected in the learning objectives and the inclusion of tasks and culture that allow students to apply their knowledge in real-life situations. Finally, the evidence of a TBLT approach also suggests a trend toward critical reflection on the part of the teachers regarding their pedagogical practice. By choosing activities that align with this approach, they are showing not only a theoretical understanding of TBLT but also a willingness to assess and adjust their teaching to enhance the learning experience of their students. This reflective attitude is fundamental for ongoing professional development and for improving the quality of education in the classroom. All in all, both kinds of teachers, regardless of their experience, have been influenced by the communicative methodologies fostered by the teacher education program. The next section presents the findings of RQ3.

5.4 RQ3 What are pre-service and in-service teachers' views of AI in lesson planning?

To identify teachers' perspectives on AI in lesson planning, semi-structured interviews were conducted with six teachers via videoconference. Findings revealed that both pre-service and in-service teachers acknowledged the potential of AI to support lesson planning by reducing time and offering a diversity of resources. Yet, teachers also are concerned about the over-reliance on AI and its limitations in adapting to specific teaching contexts. In the following sections, findings from each interview session are outlined in detail, exploring their views, projected benefits, challenges, and ethical considerations associated with AI in lesson planning.

5.4.1 Participants' Demographic Information

The four pre-service teachers, aged 21 to 22, had teaching experience ranging from 1 to 4 years, primarily in schools and private institutions, all of them plan weekly and have used AI at least once. In contrast, the two in-service teachers, aged 25 and 43, had more extensive experience of 5 to 20 years, teaching different settings and planning lessons daily. While one in-service teacher has attempted to incorporate AI into their planning, the other has not.

5.4.2 Views on Planning

During the interviews, participants were asked about their lesson planning practices to gain insights into their pedagogical approaches and the strategies they use in their teaching contexts and practices. Understanding how teachers plan their lessons is necessary, as it reveals their priorities, methodologies, and the resources they utilize. This information not only offers a glimpse into their teaching philosophies but also may justify the choices they made in their lesson plans.

- a. **Views on Planning:** Teachers agreed that planning is essential for effective teaching. For pre-service teachers, planning is a valuable resource that provides them with the confidence and structure they need in the classroom. They appreciate the sense of control it offers: *"What I like the most about planning is that I have the whole control of what's going to happen"* (Interview with PST1, July 2024). In-service teachers, having experienced the transformative nature of effective planning, emphasize how it enhances their teaching practice, particularly for those who may have previously ignored planning.
- b. **Planning Preferences:** When it comes to their preferences in planning, pre-service teachers find joy in discovering or creating engaging materials that promote student involvement and facilitate learning. They often see planning as an opportunity to explore their creativity and develop unique approaches: *"What I like about planning is that... I am able to, let's say, explore different ways of teaching the same thing"* (Interview with PST2, July 2024). In contrast, in-service teachers prioritize the clarity and structure that planning provides, viewing it as a basis for their ongoing professional development.
- c. **Planning Process:** Pre-service teachers typically start by establishing clear objectives, often following a structured format to maintain coherence throughout their lessons: *"So, usually I have like this, how do you call it? like this format... where you put the objective, the activities you're going to do, the information of the student"* (Interview with PST1, July 2024). In-service teachers also start with specific objectives but see their planning as an opportunity to incorporate flexibility into their lesson plans. They acknowledge a need to establish a solid basis and, at the same time, be prepared to deal with unplanned events that may occur during teaching.
- d. **Planning Emphasis:** In terms of what they focus on during planning, pre-service, and in-service teachers focus on addressing the specific needs of their students and adapting their lessons to the context of the group. They aim to create an inclusive environment in which all learners feel engaged and supported. Both groups shared the commitment to student

learning, as one teacher mentioned: *“Yes, this is my goal. In each class I look for motivating activities and encourage them to participate”* (Interview with IST1, August 2024).

- e. **Lesson Plan Resources:** Pre-service and in-service teachers use various resources to support their lesson planning. Pre-service teachers often rely on digital platforms and self-generated materials, with tools, such as YouTube, Canva, and Quizziz frequently mentioned as valuable tools in their planning process. In-service teachers also make use of these elements for their presentations, as one of them commented: *“I use Canva presentations a lot, and it has so many things that you take a lot of time looking for things that don’t appeal to me but appeal to my student”* (Interview with IST2, September 2024). Moreover, the other teacher expressed a preference for active activities that make students practice their communicative skills by getting up and moving around the classroom. This combination of digital and traditional resources stresses the importance of adaptability in their teaching practices.
- f. **Lesson Plan Components:** The components of lesson plans demonstrate notable similarities between the two groups, such as having objectives, student information, and organized activities. In-service teachers emphasize the importance of dividing their lessons into distinct sections, ensuring logical progression throughout: *“I try to make the lessons like didactic, like make them fun... I always start with the warm-up”* (Interview with IST2, September 2024). Pre-service teachers also focus on creating engaging and interactive lessons from the beginning, aiming to capture student interest right away. This indicates that both groups understand the necessity of structured lesson plans and dynamic engagement.
- g. **Planning Frequency:** As for the frequency of planning, both teachers spend time on planning every week, although their experiences vary significantly. In-service teachers tend to prepare interactive activities that fit their teaching objectives. Pre-service teachers, however, often adapt their planning efforts according to their other responsibilities, which may result in variations in the depth and detail of their lesson plans. Despite differences in time investment, both groups recognize the demands of effective planning and the need to maintain student interest throughout their lessons, emphasizing the challenges of balancing preparation and engagement in the classroom.
- h. **Planning Difficulties:** When discussing difficulties in planning, pre-service and in-service teachers point to time constraints and the challenge of adapting activities for diverse learning levels. Pre-service teachers sometimes experience creative blocks when generating new ideas: *“So sometimes trying to find new activities is kind of difficult for me”* (Interview

with PST3, June 2024). Conversely, in-service teachers often express frustration with the planning process itself, describing it as tedious and time-consuming. Their awareness of the challenges of planning suggests a common issue that teachers, regardless of their level of experience, may face. Both groups are committed to overcoming these challenges, although their perspectives on the planning process may differ according to their experiences.

In general, pre-service and in-service teachers agreed on the importance of planning for effective teaching, although their approaches may differ according to their experience. Pre-service teachers value planning as a tool for building confidence and exploring creativity through materials that encourage student participation. Whereas in-service teachers prioritize structure and flexibility, focusing on transparency to accommodate unexpected events in the classroom. Both groups use digital resources and interactive activities and share essential components in their plans such as clear objectives and organized activities. Although they face challenges in terms of time and adapting to different levels of learning, both groups emphasize planning as key to effective student engagement and learning.

5.4.3 Views on Artificial Intelligence

Teachers were questioned about their perceptions of artificial intelligence in lesson planning to further understand how this technology can support or challenge their teaching practice. It was intended to explore their views on the advantages, limitations, and differences they perceive between AI-assisted and traditional planning, along with their expectations and ethical concerns about the use of this technology in education. The results are presented below according to each category of questions asked in the interviews.

- a. **Use of ChatGPT:** Teachers recognize the growing relevance of AI tools in the lesson planning process. Pre-service teachers frequently report using ChatGPT to generate lesson formats and materials efficiently: *"Yes, I have used it... for example, I have used it for the formats"* (Interview with PST1, July 2024). Another teacher exemplified his use of ChatGPT for materials and/or activities: *"What I do a lot it's... For example... I found audio on YouTube. So, I click on the transcription of that video and I copy the transcription of that video and paste it on ChatGPT, and I ask GPT to create five questions for A1 students to confirm comprehension on this audio and he created the five questions. So, it's easier"* (Interview with PST4, August 2024). In-service teachers displayed more divided attitudes, with some adopting the technology based on its potential, while others preferred more traditional methods. This difference may reveal a tendency among trainee teachers to

readily adopt innovative tools, while in-service teachers are more cautious and deliberate about integrating AI into their planning.

- b. **Advantages and Challenges of AI:** Teachers recognize the advantages of AI regarding time savings and efficiency. However, they also express concern about the need for clear instructions and guidelines to ensure effective use of these technologies. Pre-service teachers highlight that although AI can assist their lesson planning process, it may not always align with their teaching style. In-service teachers express similar apprehensions, emphasizing that reliance on AI may create a dependency that hinders their ability to plan independently. This common understanding of the benefits and problems associated with the use of AI reflects a wider debate about the role of technology in education.
- c. **AI vs Human Plans:** In comparing AI-generated plans to their own, pre-service teachers observe that AI may replicate human productions: *"I find it quite similar to mine"* (Interview with PST1, July 2024). Other teachers added that there are differences in the level of detail. For one teacher, ChatGPT is very descriptive because *"you, as a teacher, you don't write that detailed information when you're planning because it's something that you have created"* (Interview with PST4, July 2024), while for another teacher the level of description of ChatGPT *"it's very vague. And, yeah, that's the difference. I am very specific"* (Interview with PST4, July 2024). Moreover, in-service teachers also consider that AI-generated plans often lack the personal touch and adaptability needed to engage students effectively, as one teacher mentioned: *"It's just that... like this (the AI-generated lesson plan) is very plain. It's really plain, and it works, but you still need like a human mind to make some changes to it"* (Interview with IST2, September 2024). This distinction highlights fundamental differences in how each group perceives the value of personalization and flexibility in lesson planning. Both teachers recognize AI's limitations but also appreciate their planning styles' strengths.
- d. **Useful AI Features:** Pre-service teachers find certain features of AI-generated lesson plans particularly valuable, noting their efficiency and structured approach. They see potential in integrating these elements into their planning processes, recognizing that AI can assist in generating innovative ideas and enhancing preparation. This optimism about the utility of AI may reflect a willingness to embrace technology as a complementary tool in their teaching practices.
- e. **AI Expectations and Concerns:** In this case, teachers shared expectations about AI as a valuable aid in lesson planning but expressed concerns about the potential for over-dependence on technology. Pre-service teachers emphasize the importance of maintaining

their creative abilities and not relying solely on AI: *"One of my main concerns is that probably maybe the new teachers... are not going to get the abilities of creating them by themselves"* (Interview with PST1, July 2024). Moreover, in-service teachers highlighted the need for a balanced approach that preserves the essential human element in teaching. Their similar concerns underscore the need for teachers to integrate AI thoughtfully and responsibly.

- f. **Ethics and Implications of AI:** Teachers considered the ethical implications of using AI in education. They emphasized the importance of using AI responsibly to maintain the integrity of the teaching profession. This collective reflects an awareness of balancing technological tools with traditional methods. Both teachers demonstrated a commitment to ensuring that the integration of AI does not compromise the quality of education.
- g. **AI Replacing Teachers:** Finally, pre-service and in-service teachers strongly believe that AI cannot replace the vital role of teachers in the teaching process. They recognized that teaching involves human interactions and emotional connections that AI cannot replicate: *"I don't really think they can replace teachers in the future because teaching requires a human factor"* (Interview with PST1, July 2024). This statement emphasizes the importance of human presence in education and the belief that AI should enhance rather than replace traditional teaching methods and the teacher itself.

To conclude, teachers' perceptions of the use of ChatGPT reflect acceptance and caution towards the integration of AI in lesson planning. Pre-service teachers stressed the efficiency and structure that ChatGPT offers, while in-service teachers portrayed more reserved attitudes, valuing flexibility and familiarity with their plans. Teachers in both groups recognized the advantages of AI, including time savings, and its limitations and risks, involving possible dependency and lack of a more personal touch. In ethical issues, teachers emphasized the importance of using AI responsibly, while not sacrificing the quality of education. Finally, pre-service and in-service teachers agreed that AI cannot replace the human interaction and emotional attitudes that characterize teaching, viewing AI as a supporting tool, not as a substitute for the teaching role.

5.5 Discussion of Findings

5.5.1 Discussion of Findings Related to Lesson Plan Components and Methodologies

Findings from this study revealed that the lesson plans created by pre-service teachers, in-service teachers, and ChatGPT shared a similar structure and components such as *Context*

or lesson details, objectives, Warm-up, Pre-task, Task, Post-task, Closure, Resources, Time, Evaluation and Homework. Such elements suggest a shared emphasis on structured lesson sequencing. However, differences arise in how each group addresses particular components: AI-generated plans exclusively include differentiation strategies, while pre-service teachers occasionally add content specifications and lecture notes, absent in the in-service teachers' plans. Although basic elements remain the same in all plans, these variations reflect distinctive focuses and priorities among the different groups.

Regarding methodologies, both AI and teachers' lesson plans reflect a communicative approach focused on meaning and culture. However, ChatGPT proposes a PPP approach, while teachers follow TBLT. Despite differences in the methodologies and the terminology employed, all groups included key components in their lesson plans, suggesting a shared understanding of the fundamental structure of EFL lesson planning.

The *Context* provides information about the targeted audience, level and topics. The *Objectives* state the achievements that students will meet. The *warm-up* phase stresses the need to prepare students and activates their engagement from the beginning of the lesson. The *Pre-task, Task and Post-task* phases involve a communicative sequence in which, first, students receive input and modeling about the task they will perform; second, they prepare and perform the task individually or in groups; and third, they further explore the task in other settings and examine the language used. *Closure, Resources, Time, Evaluation and Homework* are also relevant components in a lesson as they provide information about the resources and time needed to carry out the activities and provide feedback on students' learning and ensure that the objectives of the lesson were effectively achieved. Nevertheless, *Evaluation and Homework* were less frequent in teacher's lesson plans, probably ignoring that these aspects are not always quantifiable.

It is possible to hypothesize that these similarities derive from shared training inputs for pre-service and in-service teachers, along with ChatGPT programming, which is designed to generate responses based on widely recognized educational models. This could reflect the influence of teacher training programs or national and international curriculum guides that may promote specific planning structures. It can also be stated that the teacher education program has been influential in these teachers' lesson planning as they still follow communicative approaches implemented and reinforced in this program. Previous research and teaching literature also highlight the importance of these elements, as they are essential to creating a proper environment for learning. For instance, the findings of Herrera (2016), who investigated

the influence of time management in effective EFL planning, concluded that the teacher must establish strategies and resources that contribute to student interest and engagement and that time management facilitates classroom organization and ensures that activities are completed within designated timeframes, thereby maximizing efficiency

However, important differences in components were observed in the lesson plans. One relevant aspect was *the use of notes or teacher notes*, which appeared more frequently in the plans of ChatGPT and pre-service teachers. This component was not considered in the in-service teachers' plans, which might indicate that more experienced teachers prefer not to include such explicit details, relying more on their implicit knowledge or their ability to adapt to the lessons over time. By contrast, pre-service teachers' plans and those generated by ChatGPT seem to require a more formalized structure, which may reflect the need to establish a clearer framework for EFL lesson planning.

Regarding *differentiation* strategies, this component appeared exclusively in the plans generated by ChatGPT and was noted as an interesting and useful aspect by the teachers during the interviews. However, this difference may be influenced by how lesson plans were conceived. Teachers likely designed their plans as if they were going to apply them themselves, making differentiation an implicit part of their methodology. ChatGPT, by default, created plans intended for someone else, leading to explicit differentiation. Teachers stated that they did not consider it in their planning as they practice it implicitly during their teaching, with no need to include it as a formal element in their plans. This comment reveals a difference between the practice of experienced teachers and the explicit structure that an artificial intelligence tool can provide. Indeed, ChatGPT's ability to automatically integrate differentiated strategies could be particularly useful for pre-service or non-expert teachers who have not yet developed the ability to intuitively adapt to the needs of their students. Ha (2023) supported this idea, demonstrating that South Korean trainee science teachers benefited from using ChatGPT to enhance their lesson planning and implementation.

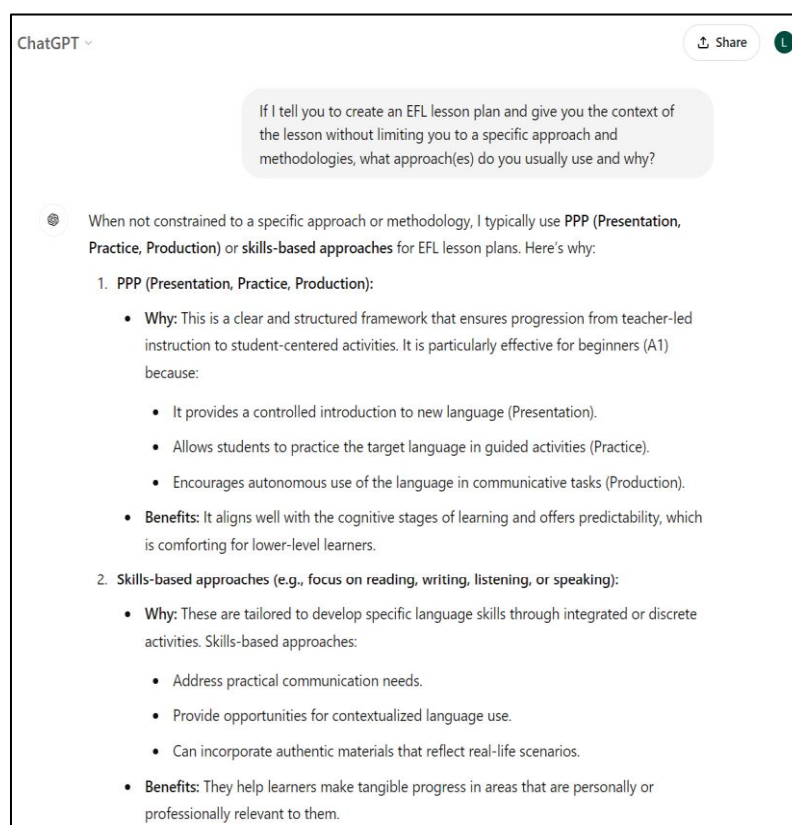
The finding of *differentiation* in ChatGPT-generated plans also raises a possible hypothesis about how AI tools can offer further support in areas where human teachers may rely on their own experience. The inclusion of differentiation as a specific component in ChatGPT plans suggests that AI has the potential to automatically generate teaching elements that teachers might overlook or incorporate only implicitly. AI's ability to include such strategies could help bridge the gap between expert and novice teachers in lesson planning. The inclusion of *differentiation* as a specific component in ChatGPT plans can be seen as a

demonstration of their programming to consider diversity in the classroom. As a result, AI has the potential not only to support pre-service teachers but also to serve as a self-assessment tool for experienced teachers, helping them to reflect on aspects of their practice that they may not often plan to document explicitly. While AI-generated planning may include useful components, such as differentiation strategies, it cannot guarantee that these are applicable in specific contexts, particularly when they are not aligned with the existing practices of teachers.

About pedagogical methodologies, variations were found. Plans generated by ChatGPT reflected the presence of skills-based and PPP approaches, whereas the teachers' lesson plans reflected a TBLT approach. Both methodologies abide by a communicative view of language teaching (Ellis, 2020; Richards, 2006) who are still very influential in language teaching and reinforced by the Colombian language policies. These results align with those found by Cárdenas and Gómez (2018), where teachers with 10 or more years of experience predominantly used TBLT. Although my study included participants with varying levels of experience, the trend persists, suggesting that, regardless of years of teaching, TBLT remains the preferred approach among most teachers. This preference for TBLT, which emphasizes authentic and meaningful tasks, might reflect a common belief of the importance of fostering real communicative skills in EFL learners. However, teachers do not implement contemporary methodologies, such as multimodality, PBL, critical pedagogy, etc. in their lessons, probably because of their innovation, or it might be that multimodality and critical thinking are present in the activities. A detailed analysis might provide more accurate evidence of their implementation.

ChatGPT's ability to generate plans using varied approaches indicates an adaptability driven by the input and prompt it receives. When asked directly, ChatGPT clarified that it defaults to PPP and skills-based approaches when there are no restrictions. Although this could be suitable for beginner levels (See Figure 5.6), they might influence and limit their teaching and methodology.

Figure 5.6 *ChatGPT's Common Approaches*



A further hypothesis is that the diversity of approaches between ChatGPT and human teachers emphasizes the influence of pedagogical training and contextual familiarity. While ChatGPT relies on broad generalized patterns from a large amount of data, teachers appeal to their experiential knowledge, adjusting approaches to the specific characteristics of their learners, institutions, and curriculum, as also concluded by Cárdenas and Gómez (2018). Because of this background setting, human teachers' openness to test frameworks such as PPP or skills-based approaches may be limited if they are not strongly encouraged in their training or are not considered to apply to their contexts.

5.5.2 Discussion of Findings Related to Teachers' Perceptions of AI in Lesson Planning

The findings revealed differences in participants' experiences with the use of AI. However, pre-service and in-service teachers acknowledged the advantages of AI regarding the efficiency and structure it can contribute to the planning process. Moreover, concerns emerge around technology reliance, personalization of lesson plans, and the ethical implications of its use.

Pre-service and in-service teachers agree that lesson planning is a fundamental element of effective teaching, with perceptions complementing each other. For pre-service teachers, it

gives them confidence and control over what will happen in the classroom. By contrast, in-service teachers perceive it as a tool to help them anticipate and manage unexpected situations in an EFL classroom.

When discussing the responses on what teachers appreciate about planning, it is observed that while some teachers enjoy it because of the control it gives them over the class and the possibility to design activities, others do not share this enthusiasm. Those who enjoy planning see it as an essential tool for course design and selecting appropriate materials and structured activities. One pre-service teacher even stated that planning allowed him to teach the same thing differently. This is similar to the findings of Ubaque-Casallas and Aguirre-Garzón (2020), who also noted the relevance of planning for trainee teachers to explore different pedagogical strategies. However, other teachers from my study mention that, although they understand its importance, they do not enjoy the process as they consider it a daily arduous task.

An assumption about the differences between those who enjoy and those who do not enjoy lesson planning might be that those who enjoy it see it as an opportunity to experiment and feel in control of their teaching, generating satisfaction. Meanwhile, those who dislike planning may feel overwhelmed by the workload or lack of experience, leading them to perceive it as a tedious task. This difference may be related to confidence and familiarity with the planning process.

As for how they plan lessons, most teachers report first thinking about the learning objectives and students' needs. In addition, many already have established formats for organizing their plans and facilitating the process. This practice suggests a tendency towards structured organization, based on more traditional planning approaches, although some also highlight the flexibility to adjust to specific needs. Furthermore, all teachers mentioned using virtual and physical resources, indicating a balanced approach to planning that integrates technology and more traditional methods to enhance learning.

Regarding ChatGPT, pre-service teachers might have a more receptive and enthusiastic opinion towards AI. They believe that tools such as ChatGPT facilitate the rapid creation of lesson plans, thereby allowing them to focus on other aspects of teaching. This hypothesis, that students could use AI to save time, was expressed by them and aligns with findings in studies by Van den Berg and du Plessis (2023) and Lou (2023), which identified time and effort savings as major benefits of using ChatGPT. However, it could represent a risk if they become too reliant on AI and might not develop their skills in planning lessons. As pre-service teachers

become more familiar with AI, they may face difficulties in maintaining their independent planning abilities, potentially affecting their professional growth in the long term.

Conversely, in-service teachers with longer experience in the classroom are more reserved for the implementation of AI. While they recognize the benefits that this tool can offer, they also emphasize that AI-generated plans lack the refinement and adjustments needed to effectively create plans. Compared to pre-service teachers, in-service teachers value flexibility and personalization in their lesson planning. This difference in perspective may be due to the acquired experience they have gained in adapting to the evolving needs of the classroom. Besides, the absence of human interaction when using AI tools such as ChatGPT was identified as an ethical concern in Terán's (2023) study of programming students' perceptions, suggesting that this issue may also influence the current teachers' hesitation to embrace AI in lesson planning fully.

One of the main concerns widely expressed by both groups is the reliance on AI. The pre-service teachers, although enthusiastic at first, also expressed worries that excessive use of AI would limit teachers' ability to generate ideas themselves. As one of the pre-service participants noted, their main apprehension is that new teachers will only develop the ability to create their materials with the help of technology. The emerging hypothesis would suggest that by striving to make their planning processes more efficient, teachers might find their ability to develop personalized lessons reduced, which would be disruptive to their teaching practices and development.

Regarding in-service teachers, their concern also revolves around the potential dependency on AI, but from a different perspective. These teachers recognize the benefits of AI in terms of efficiency and organization, but they also emphasize that the plans generated by these tools lack the necessary flexibility to adapt to the classroom. One in-service teacher commented that AI-generated plans are "very plain", implying that technology cannot replicate the intuition and adaptability that teachers develop over time. This may represent a key difference between AI-generated planning and human-created plans: personalization. AI-generated plans tend to be more general, while teachers, especially those with more experience, prefer plans that are more detailed and flexible, allowing them to adjust to the specific needs of their students. This observation aligns with findings from previous research, such as Ha (2023), who suggests that although AI can be useful, it should not be seen as a total solution, but rather as a complementary tool.

Although in-service and pre-service teachers agree on AI's efficiency in saving time, ethical concerns related to the use of technology are a constant theme in their responses. Teachers insist on the importance of using AI wisely to prevent negatively affecting the quality of education. Thus, ethics in the use of AI is quite decisive. The most significant concern is the risk that reliance on these technologies may reduce the role of creativity and human interaction in the classroom, which are essential for the teaching-learning process. This reflection is also present in the study by Van den Berg and du Plessis (2023), who argue that while ChatGPT could transform education, ethical considerations should not be ignored.

Lastly, pre-service and in-service teachers agreed that AI will not be able to replace the essential role of teachers. They recognize the importance of human interaction in the classroom and the value of emotional connections with students, which AI cannot replicate. These results contrast with those found by Barrios et al. (2019), where most teachers expressed concerns about AI replacing them. Such differences may be due to the different levels of experience and familiarity with AI. In the eyes of the teachers in this study, AI is perceived as a tool that can complement the teaching profession but never replace it. Therefore, as suggested by Ulla et al. (2023), future education could focus on training teachers to integrate AI effectively, while being aware of ethical considerations and the human nature of teaching.

5.6 Concluding Remarks

This section presented the research results by addressing the research questions. The findings showed that the lesson plans created by pre-service teachers, in-service teachers, and ChatGPT shared a similar structure and components such as *Context or lesson details*, *objectives*, *Warm-up*, *Pre-task*, *Task*, *Post-task*, *Closure*, *Resources*, *Time*, *Evaluation and Homework*. ChatGPT typically implements skills-based and PPP approaches, whereas teachers implement TBLT. Pre-service and in-service teachers recognized the benefits of AI in lesson planning, especially for efficiency and organization. However, teachers expressed concerns about AI's lack of flexibility, personalization, and the risk of over-dependence. While pre-service teachers were more open to using AI, in-service teachers emphasized the need for human adaptability. Ethical concerns about creativity and human interaction in the classroom were also noted. The next chapter will present the conclusions of the study.

CHAPTER 6 CONCLUSIONS

6.1 Chapter Overview

Previous chapters presented the theory, methods, and findings of this study that explored the similarities and differences in lesson planning components and methodologies between pre-service and in-service teachers, and their perceptions of AI in EFL teaching. This chapter outlines the conclusions resulting from the findings, discusses the implications of the results, and limitations of the study, and offers recommendations for future research in the field.

6.2 Summary of Findings and Main Conclusions

Lesson planning represents a fundamental aspect of foreign language teaching, structuring the entire educational experience and adapting it to the needs of the learners. Nevertheless, approaches and components in planning may differ across teachers' experiences and contexts. This study explored the similarities and differences in lesson planning components and methodologies between pre-service and in-service teachers, and their perceptions of AI in EFL teaching, in a Colombian context. It offers insights into how teaching preparation and emerging technologies differ influencing current teaching.

Overall, the results show that the most common components of a lesson plan by ChatGPT were *Context, Objectives, Warm-up, Presentation, Practice, Production, Wrap-up, Resources, Time, Evaluation, and Homework*, whereas the least frequently mentioned were *Differentiation* and *Notes*. Regarding PST's lesson plans, *Context, Objectives, Warm-up, Pre-task, Task, Post-task, Closing, Resources* and *Time* were frequently identified, whereas *Evaluation, Contents, Class notes, Homework* and *Teacher notes* were the least common. About IST's lesson plans, *Context, Objectives, Warm-up, Task, Closure, Resources, and Time* were commonly identified, while *Pre-task, Post-task, Evaluation* and *Homework* were less frequent.

The findings also showed that the lesson plans created by pre-service teachers, in-service teachers, and ChatGPT shared a similar structure and components such as *Context or lesson details, objectives, Warm-up, Pre-task, Task, Post-task, Closure, Resources, Time, Evaluation and Homework*. ChatGPT typically implements skills-based and PPP approaches, whereas teachers implement TBLT.

Regarding teachers' perceptions of AI in lesson planning, pre-service and in-service teachers recognized the benefits of AI in lesson planning, especially for efficiency and

organization. However, teachers expressed concerns about AI's lack of flexibility, personalization, and the risk of over-dependence. While pre-service teachers were more open to using AI, in-service teachers emphasized the need for human adaptability. Ethical concerns about creativity and human interaction in the classroom were also noted.

The finding of differentiation in ChatGPT-generated plans also raises a possible hypothesis about how AI tools can offer further support in areas where human teachers may rely on their own experience. The inclusion of differentiation as a specific component in ChatGPT plans suggests that AI has the potential to automatically generate teaching elements that teachers might overlook or incorporate only implicitly. This may be influenced by the task condition, as ChatGPT inherently generated a lesson plan for someone else to apply, whereas teachers likely assumed they were designing a lesson they would implement themselves. AI's ability to include such strategies could help bridge the gap between expert and novice teachers in lesson planning. The inclusion of differentiation as a specific component in ChatGPT plans can be seen as a demonstration of their programming to consider diversity in the classroom. As a result, AI has the potential not only to support pre-service teachers but also to serve as a self-assessment tool for experienced teachers, helping them to reflect on aspects of their practice that they may not often plan to document explicitly. While AI-generated planning may include useful components, such as differentiation strategies, it cannot guarantee that these are applicable in specific contexts, particularly when they are not aligned with the existing practices of teachers.

In-service and pre-service teachers' perceptions of using AI in lesson planning show *enthusiasm* and *concern*. They acknowledge the benefits of AI, notably in terms of efficiency and organization, since the tool can facilitate the creation of plans and offer valuable suggestions. Nevertheless, they share concerns about over-reliance on technology, remarking on preserving classroom flexibility and adaptability. In-service teachers are more resistant to accepting AI as a total replacement, appreciating instead of their experience and knowledge. Meanwhile, pre-service teachers, although open to technology adoption, recognize how AI cannot yet replicate the human interaction and emotional environment of an EFL classroom.

Based on the previous findings, it can be concluded that ChatGPT and teachers' lesson plans have more similarities than differences as they share common components and communicative approaches. ChatGPT can be seen as a positive tool for teachers in supporting their teaching and lessons. The use of AI, such as ChatGPT, is a useful lesson-planning aid, but cannot replace the adaptability, insight, and human connection essential in teaching.

6.3 Implications of the Findings

Findings from this study concern AI integration in EFL teaching, placing ChatGPT among innovative tools in lesson planning. The similarity in the key components of lesson plans generated by in-service teachers, pre-service teachers, and ChatGPT shows that AI has the potential to replicate basic teaching structures. Still, the differences identified in how these components are presented and adapted to specific contexts stress an undeniable truth: AI is a valuable instrument, but it also requires teachers' intervention to ensure alignment with students' needs and teaching settings.

Indeed, this study may uncover the urgent necessity of rethinking teacher training courses to include more advanced digital skills. Future and actual teachers must be equipped not only to deal with AI tools, but to understand their limitations, be prepared to handle potential biases, and take benefit of its versatility. Mixed views of pre-service and in-service teachers, varying between enthusiasm and cautiousness, illustrate how important it is to promote an ethical and informed attitude toward AI use in education. Training teachers to assess AI-generated lesson plans critically and tailor them to their students' cultural, linguistic, and contextual realities will guarantee these technologies empower, rather than replace, teachers in the classroom.

At the same time, this study underlines the need to continue exploring the role of AI in education from a local and relevant contextualized perspective. In Colombia, the use of ChatGPT and similar platforms is in the initial stages, representing a unique initiative to expand its potential further than just lesson planning. A deeper study of these technologies may help improve teaching practices and address gaps in education, increasing the learning experience in demanding contexts.

On balance, from this study, it is clear that collaboration between teachers and AI has the promise to transform EFL teaching. But this change needs to be managed cautiously, assuring that AI should not supplant the creativity, insight, and experience teachers bring to the teaching experience. Instead of perceiving AI as a menace, it is crucial to visualize it more as a powerful partner that, when properly used, may lead education to innovative, fair, and high-quality outcomes.

6.4 Limitations of the Study and Recommendations for Further Research

Among the main limitations of this study was the difficulty in recruiting a larger sample of teachers, collecting lesson plans and scheduling interviews due to the availability of the

participants. This was further complicated when two of them decided to voluntarily retire near the end of the interview process, reducing the scope of the data collected. Moreover, the number of participants was limited, leading to an unevenness in the amount of data collected between pre-service and in-service teachers, affecting the representativeness of the findings. Also, while in-service teachers followed the specific guidelines and prompts designed for this study, the limited availability of pre-service teachers forced the acceptance of previously elaborated lesson plans, resulting in some variability in the analysis of the results.

Another major limitation was the absence of previous research on ChatGPT in foreign language teaching, as this tool was barely over a year old by the time the study was conducted. This resulted in a lack of studies at the national level, especially in the local context, on its application in lesson planning. As an alternative, the literature review was oriented towards general concepts of artificial intelligence and lesson planning, although useful, they did not specifically respond to the focus of the study. Despite these limitations, the data obtained provided an initial perspective on the use of AI in lesson planning and teachers' perceptions in this area.

Regardless of the limitations and the small sample size, this study innovated in the investigation of AI in lesson planning, providing insights into the differences and similarities between teachers and AI. This study constitutes an important contribution to our local and national contexts and sets an example for further similar studies.

Further research should explore strategies to guarantee a more balanced and complete sample size to address the limitations faced in this study and to ensure a more balanced and complete dataset. For instance, increasing the number of participants and making more flexible scheduling options could reduce difficulties related to the availability of participants. Having a more diverse and representative sample of pre-service and in-service teachers could make the findings more applicable to different contexts. Also, requesting participants to produce lesson plans specifically designed for the requirements of the study, instead of accepting pre-existing plans, would allow for more consistent analysis across groups. Nevertheless, having accepted pre-existing lesson plans show authenticity and validity of the findings because the participants did not fake their lesson plans.

Considering the limited amount of research on ChatGPT in foreign language teaching, particularly in local and national contexts, it would be important for future studies to focus on long-term research that explores the integration of this tool over time. Similarly, expanding the focus to include other artificial intelligence tools would be useful to make comparisons that

offer a broader understanding of their strengths and challenges in lesson planning. In Colombia itself, and more specifically in the southwest region, further studies are needed to explore the use of ChatGPT in education. It would be highly relevant to not only compare AI-generated outputs with those created by humans but also to explore teachers' perceptions of ChatGPT's applications in areas beyond lesson planning.

Lastly, it would be interesting to explore its application in the design of assessment methods, feedback techniques, the creation of adaptive materials, and even situations of plagiarism. Such studies could lead to a more complete understanding of how artificial intelligence may be integrated within education, promoting its usefulness as we address the conscious management of ChatGPT and other AI machines.

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APPENDICES

Appendix 1 Consent Forms

Consentimiento Informado para Participar en la Investigación

Título de la investigación: ChatGPT vs EFL Pre-service and In-service Teachers' Lesson Planning

Investigadora: Luisa María Vallejo Moreno

Tutora: Maria Eugenia Guapacha Chamorro

Yo, _____, identificado(a) con la cédula de ciudadanía número _____, docente de XXX, participo en calidad de sujeto de investigación en el proyecto titulado "**ChatGPT vs EFL Pre-service and In-service Teacher's Lesson Planning**". Este proyecto es desarrollado por **Luisa María Vallejo Moreno** como requisito para la obtención del título de Licenciado en Lenguas Extranjeras (Inglés - Francés) de la Escuela de Ciencias del Lenguaje de la Universidad del Valle.

Este estudio tiene el objetivo de identificar y comparar la estructura y componentes de planeación de profesores en formación y en servicio con las planeaciones generadas por la inteligencia artificial. Es necesario investigar las prácticas de los docentes en la enseñanza del inglés como lengua extranjera y contrastarlas con las producidas por ChatGPT para explorar cómo se diferencian o complementan entre sí, ya que la planeación de clases influye significativamente en los procesos de enseñanza y aprendizaje. Este estudio contribuirá a mejorar nuestra comprensión del potencial de ChatGPT en la enseñanza de idiomas. En segundo lugar, podría ofrecer valiosos conocimientos que pueden influir en la formación profesional de los docentes de inglés como lengua extranjera (EFL). Además, arrojará luz sobre la efectividad de ChatGPT en el contexto único de la enseñanza de idiomas en Colombia. Finalmente, promete ser una contribución sustancial al cuerpo existente de literatura que aborda la integración de la tecnología en la educación lingüística, con un enfoque particular en el uso de ChatGPT.

Objetivos del Estudio:

1. Identificar similitudes y diferencias entre las planeaciones generadas por ChatGPT y por profesores en formación y en servicio de EFL.
2. Analizar los componentes de las planeaciones diseñadas por profesores en formación y en servicio, así como por ChatGPT.
3. Explorar las percepciones de los profesores en formación y en servicio sobre sus planeaciones y el uso de la inteligencia artificial.

Procedimientos: Como participante en este estudio, participaré brindando tres planeaciones sobre un tema específico y una entrevista sobre mis percepciones de mis planeaciones y el uso de la inteligencia artificial. Las planeaciones se realizarán de manera electrónica y asincrónica (Google Docs), y serán enviadas a la investigadora durante un plazo máximo de un mes (una planeación semanal). Además, la entrevista se llevará a cabo en un período no mayor a 30 minutos. Doy mi consentimiento para proporcionar información sobre mi experiencia y percepciones en la planificación de lecciones de inglés como lengua extranjera. Entiendo que mi participación es completamente voluntaria y que puedo retirarme en cualquier momento sin consecuencias negativas. Entiendo que la información brindada será para fines académicos y podrá ser beneficiosa para toda la comunidad educativa.

Confidencialidad y Privacidad: Entiendo que todos los datos recolectados en este estudio serán tratados de manera confidencial y serán accesibles únicamente para la investigadora y su equipo. Los resultados del estudio se presentarán de manera anónima y no se divulgarán detalles personales que puedan identificarme como participante.

Firma del Participante:

Firma de la investigadora:

Fecha:

Tu firma indica que has comprendido y aceptado participar en el estudio bajo los términos mencionados anteriormente y has recibido una copia del presente documento.

Appendix 2 Lesson plans' prompts

These are the prompts used for the collection of lesson plans.

Lesson plan (LP)	Prompt
LP #1	You are going to plan a lesson considering the following information: Subject: English (EFL). Type of institution: Public. Grade: 7°. Class size: 35. Ages: 12- 15 years old. Level: A2.1 according to the Common European Framework of Reference for Languages (CEFR). Thematic content: Daily routines. Focus on language skills: Speaking, writing, and culture. Class duration: 60 minutes. You can propose any lesson plan structure and methodology.
LP #2	You are going to plan a lesson considering the following information: Subject: English (EFL) Type of institution: Private. Grade: 10°. Class size: 25. Ages: 15-19 years old. Level: B1 (CEFR). Thematic content: The environment. Focus on language skills: Speaking, listening, reading, writing, and culture. Class duration: 75 minutes. You can propose any lesson plan structure and methodology.
LP #3	You are going to plan a lesson considering the following information: Subject: English (EFL) Type of institution: Public. Grade: 11°. Class size: 30. Ages: 16-17 years old. Level: A2 (CEFR). Thematic content: Local traditions and festivals. Focus on language skills: Listening and speaking and culture. Class duration: 45 minutes.

You can propose any lesson plan structure and methodology.

Appendix 3 Interviews' Protocol

The researcher elaborated a protocol to describe each of the steps involved in the development of the interview.

Interview's protocol

ChatGPT vs EFL Pre-service and In-service Teacher's Lesson Planning

Estimated time: 30 minutes

During the interview, the researcher will ask open-ended questions to understand the participant's thoughts about AI-generated lesson plans and AI integration in teaching. The researcher will maintain a close rapport without influencing the results. Participants have signed consent forms before the interviews. Recordings will ensure accurate capture of responses, with detailed notes taken for key insights.

Section 1: Participants' demographic information

1. What is your full name?
2. How old are you?
3. What is your educational background?
4. How many years of experience do you have teaching English? Which proficiency levels have you taught?
5. In what kinds of educational institutions have you been employed?

Section 2: Views of planning

1. What is your view on planning?
2. What do you like about planning?
3. How do you plan a lesson?
4. What is your emphasis when planning?
5. What resources do you use when planning?
6. What are the components of your lesson plan?
7. How often do you plan?
8. What are the difficulties you encounter when planning?

Section 3: Views on Artificial Intelligence

- 1.** Have you used ChatGPT for lesson planning, finding materials, etc? If so, why?
- 2.** What are the advantages and challenges you perceive in utilizing artificial intelligence for lesson planning?

(The researcher proceeds to show the participant the lesson plans generated by ChatGPT)

- 1.** In your opinion, what are the distinctions between lesson plans generated by artificial intelligence and those crafted by yourself?
- 2.** What aspects of the lesson plans generated by ChatGPT did you find most useful or interesting? Do you think these aspects could be implemented in your lesson plans?
- 3.** What are your expectations and concerns about integrating artificial intelligence into teaching practices?
- 4.** What are your thoughts on the ethics of using AI in education?
- 5.** What are your insights on the future implications of AI in EFL teaching?