FROM PROMPT TO PEDAGOGY: COMPARING AI PLATFORMS IN AUTOMATED LESSON PLAN DESIGN

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Abstract:

The pervasiveness of digital technologies and the breakthrough of AI-generated content in numerous fields have significantly impacted education and teaching practices. AI platforms are increasingly being integrated into all segments of instructional design, delivery and assessment. This paper investigates the characteristics and quality of lesson plan designs generated by four AI platforms – ChatGPT, Gemini, Claude, and DeepSeek – by contrasting and comparing the solutions each provides. The aim of this study is to identify the possibilities AI platforms offer in creating English-speaking classes, with particular attention to pedagogical aspects underlying lesson planning processes. Since the quality of automated plan designs depends heavily on the formulation of prompts, this paper used an identical prompt for all models. Based on clearly defined evaluation criteria, a comparative analysis of four AI-generated lesson plans is conducted, highlighting their key similarities and differences. Ultimately, the paper emphasizes the pedagogical implications of utilizing AI platforms in the creation of English-speaking lesson plans and supports an informative and reflective teaching approach.

Keywords:

Lesson Planning, AI-Sssisted Lesson Design, Speaking Skills, Communicative Approach, TPACK Framework.

INTRODUCTION

As a fundamental constituent of effective teaching, lesson planning specifies instructional and learning objectives and provides a coherent structure of stages that guide the teacher toward achieving the intended learning outcomes. A systematic approach to lesson planning is considered one of the key factors ensuring the quality of teaching [1]. An effective lesson plan supports teachers in aligning learning objectives with instructional activities, materials, methods and assessment tools. Additionally, systematic planning enhances student engagement, anticipates learners' needs, and identifies potential challenges.

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In order to respond effectively to increasingly diverse educational settings, contemporary approaches to foreign language teaching emphasize the need to create learning environments that are meaningful and relevant for all students. Designing comprehensive lesson plans that effectively address diverse learners' needs is rather demanding; it poses a challenge for every instructor – to have a strong foundation of professional knowledge and pedagogical competencies. In recent years, there has been a growing tendency in teachers' use of AI tools when planning and designing lessons. These tools offer valuable support in everyday lesson planning activities, assisting instructors in organizing lessons, and making teaching, learning and assessment practices a coherent and purposeful whole. Instructors can choose among various AI tools and platforms that improve the practice of lesson plan creation, helping teachers define objectives more clearly, formulate personalized instructions, incorporate student-centered strategies, and create differentiated activities tailored to suit a wide range of learners' needs.

This paper examines the key characteristics and elements of lesson planning through an analysis of specific lesson designs created by four AI platforms, or Large Language Models (LLMs) capable of generating structured pedagogical content – ChatGPT, Gemini, Claude, and DeepSeek. The aim is to compare and contrast different solutions provided by each platform when given the same prompt for designing an English-speaking lesson, with particular emphasis on the pedagogical implications of integrating AI platforms into the lesson-planning process.

2. REVIEW OF LITERATURE

Lesson planning is a complex and demanding process, providing short-term and long-term designs that align with course aims and learning outcomes. Short-term instructional planning includes daily lesson plans that specify teacher's and students' activities and outline steps toward achieving learning objectives [2]. When planning a lesson, teachers consider the following: students' needs, prior knowledge and experiences, teaching content, instructional materials and activities [3]. Furthermore, lesson plans also define clear aims and learning outcomes, specify lesson stages and appropriate assessment activities [4].

Although defined by the above-mentioned framework, which helps instructors "shape the space, time and learning we share with students," lesson planning is also characterized by flexibility – teachers do not need to adhere to it rigidly "come hell or high water" [3]. A similar perspective is offered by Jeremy Harmer, who argues that "planning a lesson is not the same as scripting a lesson". When implementing a lesson plan, instructors make various decisions and adapt what they intended to do to what is actually happening in the classroom, having an ongoing dialogue with students [5].

Ever-growing demands imposed on the teaching profession and education in general have also influenced contemporary foreign language teaching, which nowadays faces numerous challenges, including the imperative to actively engage students in the learning process. Traditional approaches, including one-size-fits-all models, proved to be inefficient to adequately address a wide range of students' needs, interests, learning styles and abilities. Therefore, educators have been encouraged to adopt learner-centered approaches so as to respond to the growing demands more purposefully [6]. Additionally, the rapid development of technology has further intensified the existing challenges, including a demand imposed on teachers to incorporate differentiated instructions and active learning strategies in order to respond to digital-native students' learning styles and habits. Addressing these challenges effectively requires solid pedagogical knowledge, continuous professional development enhanced by relevant research findings coming from the field of language teaching, and a carefully planned integration of digital tools and AI platforms.

The introduction of the Digital Education Action Plan (2021-2027) highlights the imperative to incorporate technology into educational systems, teaching, learning and assessment practices in a planned and systematic way across EU countries [7]. Educators and policy makers have also recognized the need for the d velopment of digital literacy, emphasizing that teachers need support and training on how to use IT tools effectively in the classroom [8]. In recent years, researchers' attention has focused on how various aspects of teaching – including lesson planning – can be improved through the use of AI tools. While AI has long been studied within computer science, broader public and academic interest intensified following the release of OpenAI's text generation technology, the release of GPT-4 [9]. Since then, numerous AI writing tools have become widely used for generating ideas, conducting research, structuring and creating text, becoming common everyday practice in the workplace, education, entertainment, and beyond.

The potential of Generative AI (GenAI) to support personalized learning is an advantage most frequently cited in the literature [10]. When utilized effectively, AI tools help create dynamic teaching and learning environments that cater for learners' individual needs and active engagement. Instructors can use AI tools to create "adaptive, personalized lesson plans, provide real-time feedback, and curate resources tailored to diverse learning needs" [11], thus addressing varying levels of students' interests, abilities and learning preferences more meaningfully.

On the other hand, when using AI-generated lesson plans, instructors need to apply solid pedagogical knowledge and critical skills while evaluating the suggested content. To ensure quality, authenticity and meaningful teaching and learning practices, instructors need to review and assess AI-generated content carefully, aligning it with relevant lesson planning tenets [12]. The purpose of AI use is not to replace teachers' expertise, but rather to serve as a supportive tool, helping the instructors improve rational decision-making. When integrated thoughtfully, AI can also contribute to the development of skills needed for the 21st century – such as critical thinking and problem-solving skills – thus preparing students and educators for the fourth and fifth industrial revolution. Additional advantages identified in studies include time efficiency, rapid access to information, clear objectives, varied activities and differentiated instructions generated by AI tools [13]. Automated lesson plan designs, when used responsibly and critically, can contribute to the development of creativity and flexibility. Although many advantages have been reported, in research, several challenges remain: accuracy and relevance issues, reduced opportunities for pedagogical reflection, and ethical concerns [14]. In order to respond effectively to these challenges, some researchers suggest that AI should be integrated across different levels: theoretical, pedagogical, and methodological. This approach aligns with the Technological Pedagogical Content Knowledge (TPCK) model, developed by Punya Mishra and Matthew J. Koehler, which prescribes that the three main components – content, pedagogy and technology – should be integrated into learning environments [15].

3. METHODOLOGY

In order to explore how theoretical explanations are reflected in the outputs created by AI, a comparative methodological framework was designed.

3.1. CONTEXT AND SELECTED PLATFORMS

Although the interest in AI-assisted teaching has been constantly growing, there is not enough research that systematically examines AI-generated lesson plans. This analysis focuses on a comparative qualitative–quantitative research design, the aim of which is to evaluate the pedagogical quality of four lesson plans generated by different AI language models: ChatGPT 5.2, Gemini, DeepSeek, and Claude. All the models received an identical prompt, which was:

1. Design a 90-minute English language lesson for C1-level university students focusing on speaking skills. Students attend lessons in a hybrid environment, with some of them being in person and others attending online. The number of students is around 20;
2. The topic is AI and the future of work;
3. The lesson plan should include: learning objectives, a warm-up activity, at least two main speaking activities, interaction patterns (pair/group/whole class), teacher and student roles, a follow-up or homework task.
4. The lesson should encourage critical thinking and sustained oral interaction.

All lesson plans were generated during February 2026 using default model settings without regeneration to ensure consistency across outputs.

3.2. EVALUATION CRITERIA

Upon receiving different outputs from each of the models, the plans were compared following the six key pedagogical criteria: lesson structure, teaching methods, alignment with learning objectives, effectiveness of speaking tasks, suitability for hybrid teaching and assessment and feedback opportunities. The analysis combined qualitative descriptive evaluation with quantitative scoring. Each lesson plan was first examined descriptively according to six pedagogical criteria. Subsequently, a Likert-scale rating (1–5) was applied to enable structured comparison and basic quantitative interpretation. The lesson plans were evaluated independently by two researchers. Minor differences that appeared were discussed until a consensus was reached.

Each criterion was rated on a Likert scale using marks from 1 (Very limited) to 5 (Excellent) for lesson plan quality.

3.3. QUALITATIVE ANALYSIS

ChatGPT is one of the most used AI tools among educators. The plan it provided has clearly distinguished six parts with appropriate timing, types of interaction, teachers' and students' roles, and the division of longer tasks into stages. It starts with stating the objectives that are obviously taken into account when producing the main activities. The use of a communicative approach is evident in all parts of the lesson, including some task-based activities with a focus on meaning, rather than the form, particularly not grammar form, but some language support is provided. Even though students are at the center of communication, teachers use scaffolding to maintain the flow of the lesson. The interaction patterns are also versatile. The final part of the lesson includes a part for language and feedback, as well as a follow-up with a simple homework offering students a choice. Overall, the plan is strong, but could benefit from a bit more detailed assessment. Moreover, it does include the students attending the lesson online, but some of the difficulties that could be encountered with hybrid lessons were not mentioned, and contingency plans for working with them are lacking.

Claude platform created a very detailed and precise lesson plan, including additional explanations and suggestions for teachers after the main lesson structure was presented. This lesson plan is the strongest because of its comprehensive approach to all criteria. The main distinction from the other lesson plans is the focus on creating a collaborative vocabulary bank during the initial stages of the lesson and further practicing this C1 vocabulary. Claude does not give a simple debate, but a debate carousel, which is an engaging and challenging activity. Problems could arise in a hybrid environment, but Claude elaborates on all the strategies for overcoming these obstacles. Nevertheless, it can be challenging for teachers to manage all of these aspects, so the plan can be used by more experienced teachers. The assessment section distinguishes between formative and summative approaches with rubric criteria specified and the assessment criterion distinguishes this plan from the others most clearly.

Gemini produced the shortest lesson plan of all of the AI platforms. Although it is straightforward and easy to follow, it could have been more developed. The number of activities is smaller, particularly compared to Claude's lesson plan and the timing is not precise. There is not enough language scaffolding and even though the topics are familiar and adaptable to a hybrid environment, it is only mentioned and not specifically taken into account when making a plan. There is almost no assessment, so this plan could be considered the least effective.

DeepSeek provides a small lesson procedure overview at the very beginning, listing the activities, timing, interaction and skills focus, which is of extreme importance for a teacher. Moreover, it is the only platform that provided a lesson rationale at the end encompassing all the main aspects of the lesson. The structure of the plan is clear and it offers a hybrid adaptation at the end of every stage of the lesson, not just in the end. Nonetheless, the stages are not developed in as many details. The platform did include personal aspects, making the lesson more engaging, but it should include more specifications about the target language.

3.4. QUANTITATIVE ANALYSIS

The table above demonstrates that quantitative results support the qualitative observations. The highest overall score is achieved by the lesson plan generated by Claude (30), followed closely by ChatGPT (28.5). A substantially lower score was assigned to Gemini (18), mostly due to the problems with the assessment. Finally, DeepSeek indicates moderate performance (21.5) with results much stronger than Gemini, but weaker than both Claude and ChatGPT.

Table 1. Scores for different AI-tools

Criterion	ChatGPT	Claude	Gemini	DeepSeek
Lesson structure	5	5	3	3
Teaching methods	5	5	3	4
Achieving goals	5	5	4	4
Speaking tasks effectiveness	5	5	3	4
Suitability for hybrid teaching	4.5	5	3	3.5
Assessment	4	5	2	3
Total score	**28.5**	**30**	**18**	**21.5**

4. DISCUSSION

The comparative analysis of AI-generated lesson plans has revealed significant differences among the LLMs that were used, despite the use of an identical prompt. This shows that AI models do not simply reproduce templates, but have to include certain pedagogical perspectives and methodological awareness.

According to the results, both quantitative and qualitative, it can be concluded that Claude generated the best lesson plan, taking into consideration principles of Communicative Language Teaching (CLT) and Task-based instruction [16]. It begins with the vocabulary activation, leading towards more demanding activities, showcasing scaffolding techniques and gradually working on developing students' skills. The feature that sets it apart from other plans is assessment, since it explicitly highlights formative and summative assessment options. Timing breakdown, notes for teachers and language focus summary are added in the final part of the plan, indicating that this is not a simple sequencing of activities, but a carefully devised plan. Another aspect that stands out is a separate paragraph focusing on the differentiation for a hybrid environment. It is clearly defined what online students are supposed to do and what the task is for in-person students.

The objectives and structure of a plan produced by ChatGPT are efficient and clear, very well structured from a pedagogical perspective. The focus is also on communication; sequencing is logically organized. However, the part with the assessment is less elaborate than in Claude's output. DeepSeek provided a rationale, which was not included in the other outputs, along with a simple structure. It also presented good awareness of a hybrid environment and overall good organization, but it lacks satisfactory assessment procedures. Gemini, on the other hand, produced the least elaborate lesson plan, with limited assessment strategies and without sufficient focus on the hybrid environment. Therefore, all of these variations show that the results are far from uniform and that there are significant differences between all of these models.

From a theoretical perspective, and looking through the prism of the TPACK framework [15], all models show a technological ability to produce structured content, but pedagogical principles vary. The most successful plans had a balance of content, technology, and pedagogy, the key parts of a TPACK format. Weaker lesson plans mostly relied on the technological generation of content, whereas they did not show deeper pedagogical reasoning.

The other conclusion is that AI models cannot fully replace teachers' expertise. They can provide an efficient framework that has to be adapted through the professional judgement of teachers. The flexibility mentioned in traditional lesson planning [5] is essential, and AI models cannot anticipate classroom dynamics, particularly not so well as experienced language instructors. One of the main drawbacks of these models is their inability to deal with unexpected situations in the classroom.

Even though most of them did take into consideration a hybrid environment, there are some issues with this type of teaching that require experience in working with such groups. Therefore, some examples proposed as parts of the activities in the derived lesson plans are impossible to incorporate into a typical hybrid classroom.

The communicative parts of the lessons are mostly well-structured, and the biggest weakness is creating an appropriate assessment plan. This does not mean that such an issue could not be overcome by more specific prompt development.

Generally, this study shows that LLMs can provide significant support to teachers, give them structured outlines for a lesson, offer varied interaction patterns and interesting task suggestions. When used responsibly, including critical thinking and experience, such plans could boost creativity.

There are several limitations of this study. First of all, the study is based on a single prompt and does not include classroom implementation of the obtained lesson plans nor learners' feedback. Furthermore, evaluation has a subjective element and could be more developed by including a larger number of experts for a revision process. The important point is that a lesson plan does not depend on the technology, but on the engagement of educators in adapting it for a specific classroom.

5. CONCLUSION

This study compared lesson plans generated by four AI platforms based on an identical prompt and revealed that there are significant differences in the quality of derived plans. While all models show technological capacity to produce a proper structure of the lesson and identify clear objectives, Claude and ChatGPT stood out in the quality of interactive tasks, sequencing of activities and providing more details within the plans. The most prominent difference was, definitely, the assessment part, which was clearly emphasized in the lesson plan created by Claude, while in the other ones it was less specific. A further distinction is the adaptation to a hybrid environment, which was done with varied success in different lesson plans.

The results confirm that the use of technology and AI generation of plans does not guarantee the proper use of all pedagogical principles. Focusing on the TPACK framework, the most effective lesson plans managed to achieve balance by integrating content, pedagogy, and technology, whereas weaker outputs relied primarily on the proper structure.

To sum up, AI tools can provide valuable support in creating lesson plans by giving a good structure and task ideas. However, they cannot substitute for teachers' experience, pedagogical knowledge and their judgement, particularly in situations where unpredictable changes in the classroom occur and in order to deal with them teachers' awareness and adaptability is required. They can be used to bring some interesting changes to classrooms, but it is essential to apply critical thinking skills when adapting them.

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