

## THE RELATIONSHIP BETWEEN ENGLISH LESSON PLANNING AND THE USE OF ARTIFICIAL INTELLIGENCE (AI)

### ЗВ'ЯЗОК МІЖ ПЛАНУВАННЯМ УРОКІВ АНГЛІЙСЬКОЇ МОВИ ТА ВИКОРИСТАННЯМ ШТУЧНОГО ІНТЕЛЕКТУ (ШІ)

*This study investigates the current state of Artificial Intelligence (AI) adoption in English Language Teaching (ELT) lesson planning among secondary school teachers in Transcarpathia, Ukraine. While AI presents significant potential for enhancing lesson planning, its implementation in this region faces challenges including varying digital literacy, insufficient training, and limited infrastructure. The research aimed to contribute to educational technology by exploring factors influencing AI adoption in an under-researched context, identify training needs, and guide institutions on maximizing AI's pedagogical value.*

*A survey administered to 25 secondary English teachers, primarily a younger, tech-familiar cohort (48% aged 20–30, 44% with less than 5 years' experience), revealed evolving AI integration. Research findings prove that while 48% occasionally use AI in general education, specific interest in AI for lesson planning is higher, with 32% interested but not yet using it, and 52% using it occasionally or regularly. Notably, regular AI use for lesson planning is exclusive to the 20–30 age group, highlighting a generational divide. Teachers predominantly employ a combination of digital and analogue planning (56%), indicating a desire for AI to complement existing methods.*

*The leading perceived benefits of AI in lesson planning are creativity (48%), efficiency (24%), and personalization (16%). Teachers expressed a strong desire to delegate tasks, particularly "practice tasks" (40%), to AI. However, significant barriers persist, including ethical concerns (32%), adaptation challenges (28%), and accuracy concerns (28%). Despite these, moderate optimism dominates expectations for AI's impact on lesson quality, with 48% expecting incremental improvements and 36% anticipating substantial improvements. Desired AI features include interactivity (52%), personalization (28%), and real-time feedback (20%). These findings suggest a growing interest in AI to enhance lesson planning, emphasizing the need to address infrastructure, training, and ethical considerations for successful integration in Transcarpathian ELT.*

**Key words:** Artificial Intelligence (AI), English language teaching (ELT), lesson planning, benefits of AI in English lesson planning, creativity.

*У статті вивчено поточний стан впровадження штучного інтелекту (ШІ) у планування уроків з англійської мови як іноземної серед вчителів середніх шкіл Закарпаття,*

*Україна. Хоча ШІ має значний потенціал для покращення планування уроків, його впровадження в цьому регіоні стикається зі значними викликами, зокрема різним рівнем цифрової грамотності вчителів, недостатньою підготовкою та обмеженою інфраструктурою. Метою дослідження було зробити внесок у розвиток освітніх технологій шляхом вивчення факторів, що впливають на впровадження ШІ в малодослідженому географічному контексті, визначити потреби у навчанні та надати рекомендації щодо максимізації педагогічної цінності ШІ.*

*Опитування 25 вчителів англійської мови середніх шкіл, які переважно належать до молодшої, технічно обізнаної когорти (48% віком 20–30 років, 44% з досвідом викладання менше 5 років), виявило поступову інтеграцію ШІ. Доказано, що хоча 48% вчителів епізодично використовують ШІ в загальній освіті, інтерес до ШІ саме для планування уроків є вищим: 32% зацікавлені, але ще не використовують його, а 52% використовують його епізодично або регулярно. Примітно, що регулярне використання ШІ для планування уроків притаманне виключно віковій групі 20–30 років, що підкреслює поколінний розрив. Вчителі переважно використовують комбінацію цифрових та аналогових методів планування (56%), що свідчить про бажання, щоб ШІ доповнював наявні методи.*

*Показано, що провідними перевагами ШІ у плануванні уроків є креативність (48%), ефективність (24%) та персоналізація (16%). Вчителі висловили сильне бажання делегувати ШІ завдання, зокрема «практичні завдання» (40%). Однак, існують значні перешкоди, серед яких етичні занепокоєння (32%), виклики адаптації (28%) та проблеми з точністю (28%). Незважаючи на це, помірний оптимізм домінує в очікуваннях щодо впливу ШІ на якість уроків: 48% очікують поступових покращень та 36% передбачають суттєві покращення. Виявлено, що бажані функції ШІ включають інтерактивність (52%), персоналізацію (28%) та зворотний зв'язок у реальному часі (20%). Ці висновки свідчать про зростаючий інтерес до ШІ для покращення планування уроків, підкреслюючи необхідність вирішення проблем інфраструктури, навчання та етичних аспектів для успішної інтеграції в процес навчання англійської мови на Закарпатті.*

**Ключові слова:** штучний інтелект (ШІ), викладання англійської мови, планування уроків, переваги ШІ в плануванні уроків англійської мови, креативність.

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**The problem statement and its connection with important scientific or practical tasks.** While Artificial Intelligence (AI) offers significant potential to enhance lesson planning, personalize learning, and streamline administrative tasks globally, its implementation in Transcarpathia faces substantial challenges. These

challenges include varying levels of digital literacy of teachers and insufficient training, or intermittent internet connectivity and limited hardware. This is deeply connected to several important scientific and practical tasks:

- to contribute to the broader field of educational technology by investigating the factors influencing AI

adoption in a specific, under-researched geographical and linguistic context;

- to leverage AI to create more effective, engaging, and personalized English language lessons for a diverse student population;
- to identify specific training needs and professional development strategies required to equip teachers with the skills to effectively integrate AI into their lesson planning;
- to guide educational institutions in Transcarpathia (and similar regions) on how to best allocate resources and provide institutional support to maximize the pedagogical value of AI in ELT.

In essence, the research tackles a practical challenge (integrating AI into ELT lesson planning in Transcarpathia) that has significant implications for both the scientific understanding of educational technology adoption and the practical improvement of teaching and learning outcomes in diverse contexts.

#### **Analysis of recent studies and publications.**

Artificial intelligence (AI) is fundamentally transforming education, particularly in English Language Teaching (ELT), by reshaping how instruction is designed, delivered, and assessed [1]. Modern educational innovation, including lesson planning, increasingly relies on AI tools such as adaptive learning platforms, intelligent tutoring systems, and language processing applications [2]. AI in education goes beyond mere technical upgrades; it represents a pedagogical shift where algorithms facilitate personalized learning, provide formative feedback, and even generate content [3]. Specifically within ELT, AI tools like language generation models and speech recognition systems boost the efficiency of creating differentiated tasks tailored to various learner proficiencies [4].

Lesson planning is considered the foundation of successful English language teaching, serving as a detailed guide for teachers outlining content, materials, and activities to meet instructional goals [5]. Well-designed lesson plans align content, timing, and methodology with specific learning objectives, encompassing language areas like grammar and vocabulary, as well as pedagogical elements such as communicative tasks and guided practice. Shen, Coombe, and Wang [6] emphasize that lesson planning is a reflective process, prompting teachers to deeply consider pedagogical content, anticipate student difficulties, and select appropriate resources to make language input comprehensible. This means lesson planning is more than an administrative task; it is a complex, constructive reflection on curriculum interpretation and responsiveness to learners' needs.

Despite its importance, many teachers, especially new ones, struggle with effective lesson planning. Li and Zou [7] observed that inexperienced EFL teachers face challenges with planning flexibility, whereas experienced teachers adopt a more intuitive approach. Richards and Bohlke [5] note that beginning teachers

often focus on listing activities without connecting them to objectives or student needs. Conversely, seasoned teachers use planning as a tool for professional development, refining their plans based on post-instruction reflection for future improvements [6]. This highlights that lesson planning is not a mechanical task but an art refined through experience. Overall, ELT literature recognizes lesson plans as vital for organizing language input and classroom interaction, while also acknowledging that creating effective plans is time-consuming, requires training, and demands reflective practice [5; 6]. Understanding ELT lesson planning requires viewing it as a dynamic process that establishes learning objectives, structures communicative classroom tasks, and involves deliberate pedagogical choices to meet learners' language needs.

There is a growing global interest in using artificial intelligence (AI) to assist teachers with planning and instructional tasks [8]. This trend accelerated dramatically with the late 2022 emergence of advanced language models like ChatGPT, prompting educators and policymakers worldwide to experiment with generative AI chatbots for creating teaching materials, quizzes, and classroom activities. For instance, many schools quickly explored leveraging AI to generate lesson plans and customize assignments [9]. Similarly, EdTech companies are integrating AI assistants into their products; platforms like MagicSchool.ai and Eduaide.ai are piloting tools that claim to automate aspects of lesson planning. These applications typically allow teachers to input learning objectives and receive draft plans with suggested activities, materials, and assessments. Early indications suggest an "80/20" workflow, where AI handles much of the initial content generation, with teachers providing subsequent review and refinement [3].

In response to this trend, major international organizations and professional bodies are issuing guidance on AI in education. UNESCO [9] has introduced competency frameworks to help teachers and students navigate the AI era, stressing the importance of teachers developing critical understanding and digital literacy for responsible AI application in planning and learning. Likewise, the Organisation for Economic Co-operation and Development [10] has published guidelines, developed with teachers' unions, promoting effective and equitable AI use in education, emphasizing the need for teacher training in AI literacy and their active involvement in policymaking. It is widely recognized that successful AI implementation depends heavily on substantial teacher participation.

In summary, the rapid experimentation with AI-based lesson-planning tools is paralleled by efforts to establish ethical frameworks for their use. There is a global push, from tech startups to education ministries, driven by AI's potential for teaching. While early adopters highlight AI's capacity to handle initial lesson

design, there is a growing consensus that human oversight remains crucial. If appropriately developed, these trends suggest that AI could soon become a standard collaborative partner for educators in lesson planning.

**Outline of previously unresolved issues.** Many Ukrainian teachers, including those in Transcarpathia, initially lacked prior training in online instruction and were "unprepared" for online teaching at the start of the COVID-19 pandemic [11]. While emergency training helped with basic tools, there is still a need for professional development for teachers to become AI-literate.

Weak internet infrastructure in Transcarpathia, including slow service and frequent power outages, regularly disrupts online lessons [12]. This significantly limits access to and effective use of high-tech AI tools for many rural schools. Beyond internet connectivity, widespread adoption of AI lesson-planning tools in Ukraine depends on strengthening basic digital infrastructure in schools, such as reliable internet and interactive whiteboards.

While most English teachers in western Ukraine express interest in using digital tools, they cite a lack of time and training to integrate them fully [11]. This applies to Transcarpathian teachers as well. This is the problem that we have decided to look into more deeply and understand the underlying issues.

**The purpose of the article** is to explore the current state of Artificial Intelligence (AI) adoption in English Language Teaching (ELT) lesson planning among secondary school teachers in Transcarpathia, Ukraine. It specifically investigates their existing planning methods, current AI usage, perceived benefits of AI, and the features they desire in AI tools. The study also aims to identify the significant challenges hindering AI implementation in this specific region.

**The study undertakes key tasks** to achieve its purpose: to contribute to educational technology research, i.e. it aims to deepen the understanding of factors influencing AI adoption within an under-researched geographical and linguistic context (Transcarpathia), thereby enriching the broader field of educational technology, and to enhance lesson quality through AI.

**Research methods.** To comprehensively understand the adoption of AI in English Language Teaching (ELT) among secondary teachers in Transcarpathia, a 16-question questionnaire was administered to 25 participants. The questionnaire, designed with a mix of multiple-choice, and open-ended questions, was delivered in Hungarian via Google Forms to ensure accessibility. Data collection was extended to account for regional connectivity issues, aiming for broad participation. The analysis employed a mixed-methods approach: quantitative

data (frequencies, percentages, ordinal scores) were cross-tabulated with demographic information, while qualitative responses underwent thematic analysis to uncover recurring patterns and unique insights. This robust methodology underpins the detailed findings presented in the article. It details the questionnaire responses from 25 secondary English teachers in Transcarpathia, Ukraine, focusing on their experiences, perceptions, and challenges concerning AI-assisted lesson planning. The integration of AI into educational practices, particularly for lesson planning, represents a significant opportunity for the region's ELT educators. Each of the 16 questions is meticulously examined, considering demographic influences, qualitative feedback, correlations between questions, and practical implications specific to Transcarpathia's unique context.

**Results and discussion.** A survey of 25 secondary English teachers in Transcarpathia reveals insights into their current planning methods, AI use, perceived benefits, and desired features. It offers a glimpse into the integration of AI into educational practices, particularly within lesson planning. The sample is predominantly younger, with 48% aged 20–30, and 44% having less than 5 years of teaching experience, indicating a tech-familiar cohort new to the profession (participation in the survey was voluntary). This is often seen as early adopters of new technologies, and their perspectives provide valuable insights into the potential trajectory of AI in education.

The findings suggest a cautious yet growing embrace of AI. While nearly half the teachers (48%) occasionally use AI in their general educational activities, and only a small percentage (16%) use it regularly (Figure 1), the picture shifts when focusing specifically on lesson planning. Here, interest is higher, with 32% expressing a desire to use AI even if they haven't yet, and a combined 52% either using it occasionally (28%) or regularly (24%). It is particularly noteworthy that regular AI use for lesson planning is exclusive to the youngest age group (20–30 years old) (Figure 2). This underscores the generational divide in technology adoption and suggests that as this younger cohort gains experience, AI integration in lesson planning may become more widespread.

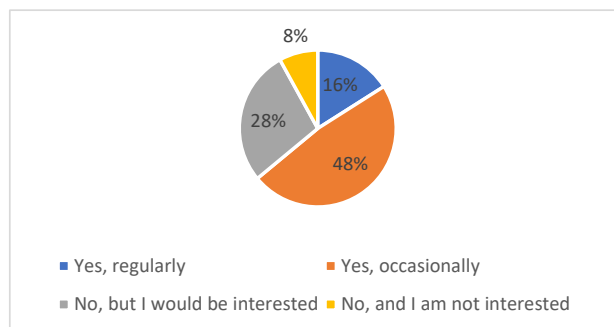
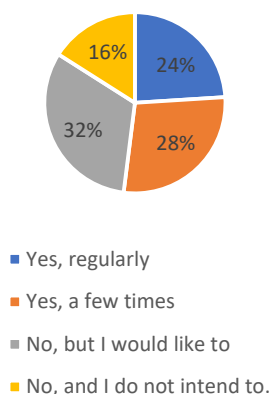
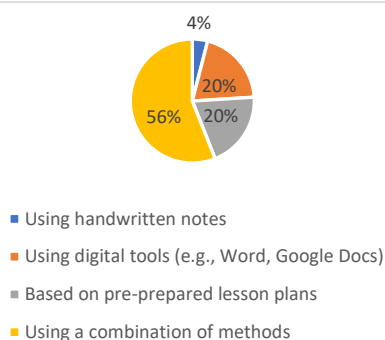


Fig. 1. Teachers' Use of AI in Education



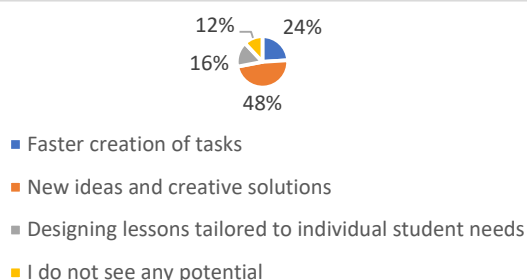
**Fig. 2. Teachers' AI Use for Lesson Planning**

Teachers in Transcarpathia are not abandoning traditional methods. The majority (56%) reported using a combination of digital and analogue planning methods, indicating a pragmatic approach where technology complements existing practices rather than completely replacing them. This blended approach suggests that for AI to be truly effective, it needs to seamlessly integrate with current workflows, offering genuine enhancements rather than demanding a complete overhaul (Figure 3).

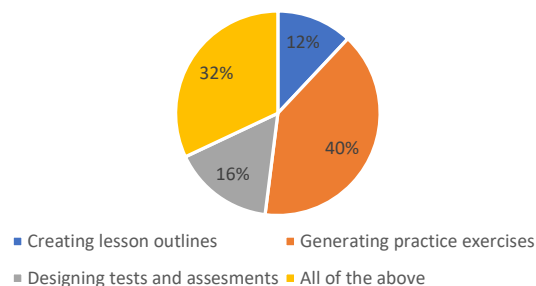


**Fig. 3. Teachers' Lesson Planning Methods**

Creativity (48%) is the leading perceived benefit of AI in lesson planning, followed by efficiency (24%) and personalization (16%) (Figure 4). When it comes to delegating tasks to AI, 40% prefer "practice tasks," while 32% would delegate "all tasks" (Figure 5).

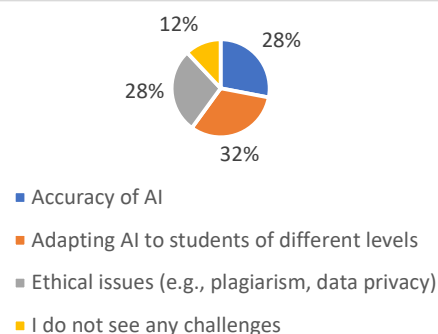


**Fig. 4. AI Use Benefits in Planning Lessons**



**Fig. 5. Teachers' Preferred AI Tasks**

Despite the above optimism, significant barriers to AI adoption persist. Ethical concerns (32%) and adaptation challenges (28%), alongside accuracy concerns (28%), are notable obstacles. Ethical considerations might stem from worries about data privacy, or the potential for AI to diminish human interaction in learning. Adaptation challenges could relate to the learning curve associated with new tools, lack of adequate training, or insufficient technical support. Concerns about accuracy are also understandable, as teachers rely on precise and reliable information to create effective lessons. Addressing these concerns will be crucial for broader AI integration (Figure 6).



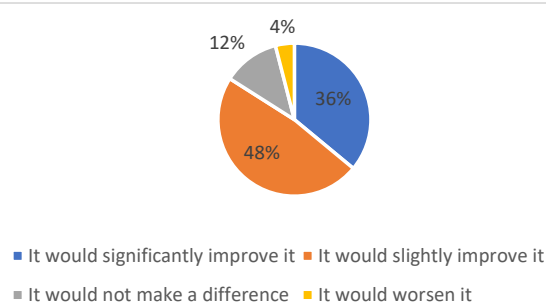
**Fig. 6. Perceived Obstacles to Integrating AI into Lesson Planning**

When surveyed about how AI might influence lesson quality, most teachers expressed moderate optimism, with nearly half (48%) expecting incremental improvements. A significant portion (36%) anticipated substantial improvements, highlighting a strong belief in AI's potential to transform lessons. Conversely, a small minority foresaw no change (12%) or even a decline (4%) in lesson quality, possibly due to concerns about lessons becoming too impersonal or standardized (Figure 7).

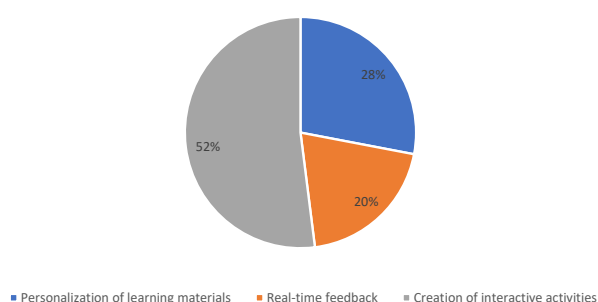
Finally, the most desired AI features for lesson planning tools provide a clear roadmap for developers. Interactivity (52%), personalization (28%), and real-time feedback (20%) are highly sought after. Teachers want AI to be a dynamic, responsive partner that can adapt to their needs, offer tailored suggestions, and provide immediate insights, thereby



making the planning process more engaging and effective (Figure 8).



**Fig. 7. Teachers' Hopes for AI's Impact on Lesson Quality**



**Fig. 8. Teachers' AI Features for Lesson Planning Tools**

In conclusion, while AI adoption in Transcarpathian English language teaching is still in its early stages, there is a clear and growing interest, particularly among younger educators. The findings highlight a desire for AI to enhance creativity, efficiency, and personalization in lesson planning, but also point to the critical need for addressing ethical considerations, easing adaptation, and ensuring accuracy to unlock AI's full potential in the classroom.

**Conclusions and perspectives of further research.** This research provides valuable insights into AI integration in English Language Teaching (ELT) lesson planning among secondary teachers in Transcarpathia, Ukraine. Our findings reveal a compelling duality: a burgeoning interest and cautious optimism towards AI's potential, alongside persistent practical and ethical concerns.

The survey of 25 secondary English teachers showcased a predominantly younger, tech-familiar cohort (48% aged 20–30; 44% with less than 5 years of experience). This demographic is crucial, as they appear to be early adopters, with regular AI use for lesson planning exclusively observed in the 20–30 age group. While general AI use in education is still occasional for nearly half the teachers (48%), interest in AI for lesson planning specifically is higher, with 32% interested but not yet using it, and a combined 52% using it occasionally or regularly. This highlights a

clear trend towards greater AI integration as this younger generation gains more experience.

However, the path to widespread AI adoption is not without obstacles. Ethical concerns (32%), adaptation challenges (28%), and accuracy concerns (28%) represent notable barriers. These concerns likely encompass issues of data privacy, potential algorithmic bias, the learning curve associated with new tools, and the reliability of AI-generated content. Addressing these will be paramount for successful implementation.

Despite these challenges, optimism prevails regarding AI's impact on lesson quality. A substantial majority of teachers anticipate improvements, with 48% expecting incremental improvements and 36% anticipating substantial improvements. This collective hope signals a recognition of AI's transformative potential. The desired features for AI lesson planning tools – interactivity (52%), personalization (28%), and real-time feedback (20%) – provide a clear direction for developers to create tools that are dynamic, adaptable, and genuinely supportive of teachers' needs.

In essence, AI adoption in Transcarpathian ELT shows promising signs of growth, driven by a desire for enhanced creativity, efficiency, and personalization in lesson planning. To fully unlock AI's pedagogical value, future efforts must strategically address existing infrastructure limitations, provide targeted professional development, and carefully navigate ethical and accuracy concerns, ensuring AI becomes a reliable and effective collaborative partner for educators.

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