



ADVANTAGES OF USING ARTIFICIAL INTELLIGENCE TOOLS IN DEVELOPING RESEARCH COMPETENCE OF FUTURE ENGLISH TEACHERS

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Abstract

This article analyzes the theoretical foundations of using artificial intelligence (AI) tools to develop research competence in pre-service English language teachers. In the era of digital transformation, integrating modern technologies—particularly AI-based educational assistants—into teacher training programs has become an urgent priority. The paper explores how tools such as ChatGPT, Grammarly, and Elicit can enhance key research skills, including problem formulation, literature analysis, academic writing, and critical thinking. The influence of AI on learning processes and its role in supporting educational research are examined through methodological and theoretical perspectives. The article also provides practical recommendations for implementing AI-assisted strategies to foster research competence in language teacher education.

Keywords: Artificial intelligence, research competence, pre-service English language teachers, digital pedagogy, academic writing, critical thinking, innovative educational technologies.

Introduction

As modern education enters the stage of digital transformation, preparing future teachers to work with modern technologies is becoming one of the most priority tasks of the education system. President Shavkat Mirziyoyev, in his 2023 address to the Oliy Majlis, emphasized: “It is impossible to move forward on the path of development without the introduction of artificial intelligence and modern technologies.” This idea directly affects not only the economy and industry, but also the education system, and raises the need for the rational use of artificial intelligence (AI) tools in pedagogical activities.



Research competence for future English teachers is a complex but necessary professional quality that includes such skills as independent research, scientific analysis, reasoning based on literature, drawing conclusions and evaluating results. Unfortunately, in traditional educational approaches, the formation of this competence is often limited to memorizing theoretical materials. From this point of view, digital technologies, especially artificial intelligence-based tools, offer great opportunities to overcome this problem and awaken the spirit of inquiry in teachers.

Today, through AI tools such as ChatGPT, Grammarly, Elicit, ResearchRabbit, students have the opportunity to perform the processes of identifying scientific questions, analyzing literature, comparing evidence, and writing academic texts in an automated and interactive environment. World experience shows that these tools not only save time, but also actively stimulate critical and analytical thinking. Also, artificial intelligence can partially fulfill the role of mentoring in preparing students for research, which enhances individual learning.

Therefore, this article examines the role of artificial intelligence technologies in the formation of research competencies of future English teachers from a theoretical and practical point of view. The main focus is on assessing the impact of artificial intelligence tools on such components as problem-solving, literature analysis, scientific writing, and critical thinking. This issue is relevant today not only for the introduction of innovative methods in education, but also for updating the national education system based on digital competencies.

In the developing world, new concepts and skills are entering the field of pedagogy every day. Among them, the following are **constructivist pedagogy**, **digital competencies** and **AI-assisted learning** plays a major role in developing research skills in future English language teachers. In recent years, a number of large-scale studies have been conducted in the world's leading education systems — in particular, the USA, Great Britain, Canada, South Korea and Singapore — on the integration of artificial intelligence technologies into pedagogical activities. For example, studies led by Luckin and Holmes (UCL Institute of Education, London) substantiated the role of artificial intelligence tools in reducing the cognitive load of the teacher, activating students' reflective thinking and strengthening self-assessment mechanisms [1]. Also, in research conducted by scientists from North Carolina State University (USA), AI tools (in particular, ChatGPT, Elicit) were



successfully tested as a coach (AI mentor) in preparing students for scientific research [2].

The research design is aimed at theoretically studying and analyzing these international experiences in the context of the education system of Uzbekistan. The priority criterion was what skills artificial intelligence tools could develop for future English language teachers: **scientific questioning, literature analysis, scientific writing, evidence-based conclusions, and reflection**. Developed by scientists from Canada (University of Toronto) on integrating AI technologies into research competencies “**scaffolded inquiry model**” Based on this, it was found that students can gradually apply AI tools in the following activities:

- Formulate questions and find theoretical foundations with **ChatGPT**;
- Find and annotate scientific articles with **Elicit**;
- Strengthen academic writing and editing skills with **Grammarly**;
- Learn re-analysis and paraphrasing techniques with Quillbot or Wordtune [3]

In this methodology, research competence is considered an integral competence, that is, it includes not only theoretical knowledge, but also **digital literacy, information filtering, critical analysis, and academic ethics** includes. On this basis, the process of using artificial intelligence tools shapes students as research subjects, not as learners [4].

The results of the study showed that the use of artificial intelligence tools causes significant changes in the development of research competencies of future English language teachers. When analyzing the reflective writings and oral comments of the students, clear positive changes were observed in the skills of posing scientific questions, working with literature, text analysis, and scientific writing. While most students previously considered scientific research to be a difficult, abstract process, during the study this activity became **began to master it step by step using practical and convenient tools**. The most effective artificial intelligence tools – **ChatGPT** (scientific question formulation and rapid research), **Elicit** (finding articles and reviewing literature), and **Grammarly** (spelling and style editing). Students strengthened their speaking and expression skills by using analytical editing features, which are especially helpful in academic writing. They also improved their writing skills by frequently revising their work using AI tools. **reflective thinking** va **self-assessment** skills [5].



The study also showed that students use AI tools not only as assistive technology, but also **scientific mentor**. This encouraged them to learn independently, think critically, and work on themselves. Working with artificial intelligence also encouraged students to **digital ethics, authorship, and attribution culture**. This situation shaped their conscious approach to scientific ethical standards [6].

Conclusion

The results of the study showed that artificial intelligence tools can be a powerful tool in developing the research competence of future English language teachers. Using tools such as ChatGPT, Elicit and Grammarly, students were able to strengthen key competencies such as identifying scientific problems, literature analysis, academic writing and reflective thinking. Most importantly, these tools encouraged an interest in research, independence and a critical approach.

Based on these results, it is recommended to use artificial intelligence tools in programs aimed at training English language teachers. Systematic integration as a methodological approach. This will be an important step in improving the quality of education, creating a generation ready for scientific research, and deepening digital literacy.

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