ARTIFICIAL INTELLIGENCE IN TEACHERS' PROFESSIONAL ACTIVITIES: OPPORTUNITIES FOR LESSON PLANNING, TASK CREATION, AND ASSESSMENT

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Abstract

The rapid development of Artificial Intelligence (AI) has created new opportunities for improving teachers' professional activities and transforming traditional approaches to education. AI-based technologies can support teachers in lesson planning, educational task creation, assessment, feedback, and the adaptation of learning materials to students' individual needs. This article examines the potential of AI in three important areas of teachers' professional practice: lesson planning, task creation, and assessment. The study is based on a review and analysis of relevant academic literature concerning artificial intelligence, educational technology, personalized learning, and AI-supported assessment. The findings indicate that AI can reduce teachers' routine workload, provide ideas for differentiated activities, generate diverse learning tasks, and facilitate faster feedback. At the same time, effective implementation requires teachers to maintain professional judgment, verify AI-generated content, protect students' data, and develop appropriate AI literacy. The article concludes that AI should not replace teachers but should function as a supportive tool that enhances their professional capabilities and contributes to more flexible, personalized, and effective teaching.

Keywords: Artificial Intelligence, teachers, lesson planning, task creation, assessment, AI in education, personalized learning, teacher professional development, educational technology, digital literacy.

Introduction

The digital transformation of education has significantly changed the roles and responsibilities of teachers. Modern educators are expected not only to transmit knowledge but also to design engaging learning experiences, create differentiated tasks, assess students' progress, and provide timely feedback. These responsibilities require considerable amounts of time and professional effort. In this context, Artificial Intelligence has emerged as one of the most promising technologies capable of supporting teachers in their daily professional activities.[1]

Artificial Intelligence refers to computer-based systems capable of performing tasks that traditionally require human intelligence, including language processing, pattern recognition, prediction, content generation, and decision support. The rapid development of generative AI systems has expanded the possibilities for educational applications. Teachers can use AI tools to generate lesson ideas, prepare activities, adapt texts to different proficiency levels, develop questions, create assessment materials, and provide preliminary feedback.[2]

However, the integration of AI into education should be approached critically. AI-generated materials may contain inaccurate information, inappropriate language, bias, or pedagogical weaknesses. Therefore, teachers remain responsible for evaluating and adapting AI-generated content. UNESCO emphasizes the importance of a human-centered approach to generative AI in education and research, particularly with regard to ethics, privacy, inclusion, and responsible use.

The purpose of this article is to examine the opportunities and challenges associated with using AI in teachers' professional activities, with particular attention to lesson planning, task creation, and assessment.[3]

Methods and Literature Review

The study employs a qualitative literature-review methodology. Relevant academic and institutional publications concerning AI in education, teacher professional activities, automated assessment, personalized learning, and generative AI were analyzed. The literature was examined thematically to

identify the major opportunities, benefits, limitations, and pedagogical implications of AI-supported teaching.[4]

Several researchers have emphasized that AI can transform educational practices by supporting personalized learning and providing intelligent assistance to both teachers and students. Luckin et al. (2016) argue that AI can contribute to more personalized educational environments by analyzing learning processes and supporting teachers in making informed decisions.

Zawacki-Richter et al. (2019), in their systematic review of AI applications in higher education, identified several important areas, including assessment and evaluation, adaptive systems, prediction, and intelligent tutoring. Their research also highlighted the need for greater attention to pedagogical perspectives and the role of educators.[5]

Holmes, Bialik, and Fadel (2019) emphasize that AI should be viewed as a technology that can augment teachers' professional capabilities rather than simply automate teaching. According to this perspective, teachers remain central to educational decision-making.

More recent discussions concerning generative AI have focused on the opportunities and risks associated with tools capable of producing human-like text and educational content. UNESCO (2023) points to the importance of teacher training, ethical principles, data protection, and human oversight when implementing generative AI in education.

The literature therefore suggests that AI has significant potential for supporting teachers, but its educational value depends largely on how effectively and responsibly teachers integrate it into pedagogical practice.[6]

Results

The literature analysis identified several major opportunities for the use of AI in teachers' professional activities.

1.AI for Lesson Planning

AI can significantly assist teachers during lesson preparation. Teachers can provide information about the subject, grade level, learning objectives, lesson duration, and students' proficiency levels, and AI can generate a preliminary lesson structure.

- AI can support teachers by:
- suggesting learning objectives;
- generating lesson stages and activities;
- proposing warm-up and introductory activities;
- recommending individual and group tasks;
- adapting activities to different proficiency levels;
- creating homework assignments;
- suggesting formative assessment activities;
- generating ideas for interactive and communicative activities.

For example, an English teacher can use AI to develop a lesson plan on environmental issues for intermediate learners. The generated plan may include vocabulary activities, reading comprehension, group discussions, and writing tasks. The teacher can then evaluate and modify these suggestions according to the curriculum and students' needs.[7]

2. AI for Task Creation

Another important application of AI is the generation of educational tasks. AI can produce multiple versions of exercises based on a particular topic, language level, or learning objective.

For language teachers, AI can generate:

- vocabulary exercises;
- grammar activities;
- reading comprehension questions;
- dialogue-based tasks;
- writing prompts;
- multiple-choice questions;
- matching exercises;

- gap-filling activities;
- discussion questions;
- project-based learning tasks.

One of the major advantages is differentiation. A teacher can ask AI to create easier, intermediate, and more challenging versions of the same task. This can help accommodate students with different levels of prior knowledge and learning needs.

3. AI for Assessment

AI can also support teachers in the assessment process. It can assist in generating quizzes, creating answer keys, organizing assessment criteria, and providing preliminary feedback on students' written work.

AI-supported assessment may help teachers:

- generate assessment questions;
- create rubrics;
- classify responses according to predefined criteria;
- identify common errors;
- provide preliminary feedback;
- organize assessment data;
- develop formative assessment activities.

Automated feedback can be particularly useful because students can receive information about their performance more quickly. Nevertheless, AI-based assessment should not completely replace teacher evaluation, especially when assessing complex skills such as creativity, critical thinking, argumentation, and communicative competence.[8]

Analysis and Discussion

The findings demonstrate that AI can contribute to greater efficiency in teachers' professional activities. One of the most significant advantages is the reduction of time spent on routine preparation. Teachers can use AI-generated drafts as starting points instead of creating every lesson activity from the beginning.

At the same time, AI changes rather than eliminates teachers' responsibilities. The teacher becomes an evaluator, editor, designer, and decision-maker. AI may generate ten possible activities, but the teacher must determine which activity is appropriate for the specific class.

Another important benefit is personalization. Traditional teaching environments may make it difficult for teachers to prepare different materials for every learner. AI can help produce differentiated resources relatively quickly. This can support inclusive and student-centered teaching.

However, several challenges should be considered. First, AI-generated information may be inaccurate or outdated. Teachers must therefore verify factual information before using it in the classroom. Second, AI-generated tasks may not always correspond to curriculum requirements or students' actual needs. Third, excessive dependence on AI may reduce teachers' independent planning and creative decision-making if the technology is used without reflection.[9]

Ethical and privacy issues are also important. Teachers should avoid entering sensitive personal information about students into AI systems. Educational institutions should establish clear policies concerning responsible AI use, data protection, academic integrity, and transparency.

Teacher AI literacy is therefore essential. Teachers need to understand not only how to operate AI tools but also how to formulate effective prompts, evaluate generated content, recognize errors and bias, and integrate AI outputs into sound pedagogical practices.

AI should consequently be viewed as a co-pilot for teachers rather than a replacement for teachers. The most effective model is human-AI collaboration, in which AI performs supportive and repetitive functions while teachers retain responsibility for pedagogical decisions.[10]

Conclusion

Artificial Intelligence offers significant opportunities for improving teachers' professional activities. Its application in lesson planning, task creation, and assessment can reduce routine workload, increase the variety of educational materials, support differentiation, and facilitate faster feedback.

The study demonstrates that AI can make lesson preparation more flexible and efficient. It can generate lesson structures, educational tasks, assessment materials, and differentiated activities. However, the effectiveness of AI depends on teachers' professional competence and their ability to critically evaluate AI-generated content.

AI should not be regarded as a substitute for teachers. Human expertise, creativity, empathy, classroom experience, and pedagogical judgment remain essential elements of effective education. Therefore, successful AI integration requires a balanced human-centered approach, appropriate teacher training, ethical guidelines, data protection, and continuous professional development.

In the future, the combination of teachers' pedagogical expertise and AI technologies may contribute to more personalized, interactive, and efficient learning environments. The key challenge is not whether AI should be used in education, but how it can be used responsibly and effectively to strengthen teachers' professional practice and improve students' learning outcomes.

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