

# THE IMPACT OF CHATGPT ON TEACHERS ROLES: TRANSFORMATION IN TEACHING AND LEARNING PRACTICES

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**Abstract.** This study explores the educational transformation driven by ChatGPT, focusing on its effects on teaching methods, individualized learning, student engagement, teachers' evolving roles, and emerging challenges. Using a Systematic Literature Review (SLR) guided by the PRISMA 2020 framework, 16 peer-reviewed articles published between 2021 and 2025 were analyzed. The study's novelty lies in its integrative pedagogical, psychological, and technological perspective, revealing how ChatGPT redefines teachers from traditional instructors to AI co-facilitators of learning. The synthesis shows that ChatGPT enhances student engagement by 30–40%, supports personalized learning through instant feedback, and encourages project-based, dialogic instruction. However, challenges remain, including technological dependency, limited teacher digital literacy, and reduced human interaction. The study concludes that effective integration requires continuous AI literacy training and ethical guidelines. Practically, it contributes to educational policy by promoting human–AI collaboration and strengthening teacher capacity for responsible implementation.

**Keywords:** ChatGPT, artificial intelligence, teacher role, learning transformation.

## INTRODUCTION

The development of information and communication technology (ICT) over the past decade has brought significant transformation to the field of education. According to reports from UNESCO (2024) and the World Economic Forum (2023), more than 70% of educational institutions worldwide have integrated artificial intelligence (AI)-based technologies into their teaching and learning processes. In Indonesia, the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek, 2024) recorded a 62% increase in digital learning adoption between 2023 and 2024. One of the most popular applications of this technology is ChatGPT, an AI-powered language model developed by OpenAI. ChatGPT provides an interactive and adaptive learning experience through features such as *personalized learning*, high accessibility, and instant feedback or problem-solving capabilities for students' inquiries (Zhai, 2023).

While ChatGPT offers positive potential such as enhanced learning effectiveness, time efficiency, and broader access to learning resources (Kusumawati & Widodo, 2023), its presence also introduces new challenges for teachers. A key issue is the shift in teachers' roles—from being the primary source of knowledge to acting as facilitators of learning. This shift affects pedagogical strategies, teacher–student relationships, and overall classroom dynamics (Chen et al., 2020). In this context, teachers face a dilemma: how to utilize technology optimally while maintaining the humanistic values fundamental to education.

Several previous studies have examined the impact of artificial intelligence on education. Popenici and Kerr (2017) found that AI can enhance teaching efficiency and offer more personalized learning experiences, yet it may also reduce students' interpersonal skills and critical thinking abilities. Likewise, Adeshola and Adepoju (2023) revealed that although ChatGPT assists teachers in providing quick feedback, excessive reliance may undermine learners' independence. Halaweh (2023) further emphasized the importance of ethical and responsible implementation strategies to ensure that AI supports rather than replaces the human role in education.

Nevertheless, a clear research gap remains. Most prior studies have focused on the general benefits of AI technologies without deeply exploring how ChatGPT specifically reshapes the pedagogical relationship between teachers and students, or how teachers redefine their professional identity and

instructional strategies amid the growing presence of AI in classrooms. In fact, the teacher–student relationship is central to the educational process, shaping both learning success and character development (Santrock, 2021).

Based on this gap, the present study aims to analyze the impact of ChatGPT on teachers' roles in teaching and learning practices. Specifically, it seeks to explain how ChatGPT influences teachers' methods, classroom interactions, and management of learning processes, as well as to identify adaptation strategies that help teachers remain relevant in the AI era. The findings are expected to contribute theoretically and practically to developing a balanced model of education that integrates digital technology with humanistic pedagogy.

## RESEARCH METHOD

This study employed a Systematic Literature Review (SLR) approach guided by the PRISMA 2020 framework. This method was selected because it provides a structured, transparent, and replicable process for identifying, screening, and synthesizing relevant studies. The review aimed to gather and analyze research discussing the impact of ChatGPT on teachers' roles, teaching practices, and classroom dynamics in the context of digital transformation in education.

Data were collected using the Publish or Perish software with Google Scholar as the primary database. The keywords applied in the search were “*ChatGPT*”, “*teacher roles*”, “*AI in education*”, and “*teaching transformation*”. The search focused on studies published between 2021 and 2025, a period marked by the global adoption of artificial intelligence in educational settings. A total of 200 articles were initially identified, and after a careful screening process based on relevance, accessibility, and methodological rigor, 16 peer-reviewed articles were selected for final analysis.

The analytical process involved three main stages: identifying eligible studies, classifying them based on recurring themes, and synthesizing their findings to build a comprehensive understanding of ChatGPT's influence on educational practices. Through this process, the study summarized existing knowledge and highlighted how ChatGPT contributes to reshaping teachers' roles and pedagogical strategies in the era of artificial intelligence.

## RESULT AND ANALYSIS

Based on the analysis of 16 journal articles, the impacts of ChatGPT on teachers' roles representing the transformation in teaching and learning practices can be categorized as follows:

**Table 1.** Analysis of 16 Journal Articles on the Impact of ChatGPT on Teachers' Roles

| No | Cited Journal         | Impact of ChatGPT on Teachers' Roles                                                                                                      |
|----|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Ausat et al. (2023)   | 1. Changes in Teaching Methods<br>2. Changes in Teachers' Roles<br>3. Increased Student Engagement                                        |
| 2  | Suharmawan (2023)     | 1. Support for Individualized Learning<br>2. Challenges and Concerns                                                                      |
| 3  | Indriani (2024)       | 1. Changes in Teaching Methods<br>2. Increased Student Engagement<br>3. Support for Individualized Learning<br>4. Challenges and Concerns |
| 4  | Kusworo et al. (2024) | 1. Increased Student Engagement<br>2. Challenges and Concerns                                                                             |
| 5  | Puspita et al. (2023) | 1. Support for Individualized Learning                                                                                                    |
| 6  | Wibowo et al. (2023)  | 1. Challenges and Concerns<br>2. Increased Student Engagement                                                                             |

|    |                                |                                                                                                       |
|----|--------------------------------|-------------------------------------------------------------------------------------------------------|
| 7  | Baskara (2024)                 | 1. Changes in Teachers' Roles<br>2. Support for Individualized Learning                               |
| 8  | Ramadhan et al. (2023)         | 1. Challenges and Concerns                                                                            |
| 9  | Diantama (2023)                | 1. Increased Student Engagement<br>2. Changes in Teachers' Roles<br>3. Challenges and Concerns        |
| 10 | Faiz & Kurniawati (2023)       | 1. Changes in Teaching Methods<br>2. Changes in Teachers' Roles                                       |
| 11 | Maulana et al. (2024)          | 1. Support for Individualized Learning<br>2. Increased Student Engagement                             |
| 12 | Rohaizam (2024)                | 1. Challenges and Concerns<br>2. Increased Student Engagement                                         |
| 13 | Nair et al. (2023)             | 1. Challenges and Concerns<br>2. Increased Student Engagement                                         |
| 14 | Fernández-Cerero et al. (2025) | 1. Changes in Teachers' Roles<br>2. Support for Individualized Learning<br>3. Challenges and Concerns |
| 15 | Maulana et al. (2023)          | 1. Challenges and Concerns<br>2. Increased Student Engagement                                         |
| 16 | Alamsyah (2024)                | 1. Increased Student Engagement                                                                       |

**Tabel 2.** Summary of ChatGPT's Impact Categories on Teachers' Roles

| No | Category of ChatGPT Impact          | Number of Articles |
|----|-------------------------------------|--------------------|
| 1  | Changes in Teaching Methods         | 3                  |
| 2  | Support for Individualized Learning | 6                  |
| 3  | Increased Student Engagement        | 10                 |
| 4  | Changes in Teachers' Roles          | 5                  |
| 5  | Challenges and Concerns             | 9                  |

After classifying the findings, five main themes were identified regarding the impact of ChatGPT on teachers' roles and the transformation of teaching and learning practices, as described below:

### 3.1 Changes in Teaching Methods

ChatGPT has driven a significant shift in how teachers design and implement the learning process. According to Ausat, Hidayat, and Fikri (2023), the use of artificial intelligence technology has transformed teaching practices from traditional lectures into more task-oriented, dialogic, and reflective learning. Teachers can now integrate ChatGPT into three key instructional phases: pre-class for idea generation and initial planning, in-class for facilitating question-based discussions, and post-class for instant feedback and remedial support.

Fernández-Cerero, Pérez-González, and Domínguez-González (2025) found that combining ChatGPT with direct teacher feedback had a small to moderate positive effect on students' learning outcomes, particularly in higher-order reasoning. This aligns with a meta-analysis published in *Nature Education Review* (2025), which emphasizes that ChatGPT is most effective when used as a reflective assistant rather than merely a "machine for answers."

However, Indriani (2024) discovered variations across subjects; concept-based learning, such as physics and psychology, showed greater improvement than memorization-based courses. This highlights the importance of careful task design and discipline-specific use of ChatGPT (Baskara, 2024).

In the Indonesian context, this transformation requires a **redesign of assessments** toward more process- and performance-based evaluation. Suharmawan (2023) recommends reducing summary-based homework and replacing it with project-based assessments, oral examinations, or authentic learning tasks that cannot be replaced by AI. Moreover, features such as *Socratic mode* can encourage students' critical reasoning rather than passive copying (Kusworo et al., 2024).

### 3.2 Support for Individualized Learning

ChatGPT's contribution to individualized learning is evident in its ability to provide personalized scaffolding—additional explanations, contextual examples, and tiered exercises tailored to students' needs. Wibowo, Lestari, and Pradana (2023) reported that individual use of ChatGPT increased student motivation and engagement by up to 75%, particularly among those needing instant and personalized feedback.

Fernández-Cerero et al. (2025) further confirmed that ChatGPT integration in teacher education programs enhanced preservice teachers' digital pedagogical competence, provided that clear guidelines and supervision were in place. Similarly, Maulana, Rahmah, and Setiadi (2024) found that structured training combined with reflective practice helped teachers overcome ethical and technical concerns regarding AI use.

These findings suggest that individualized learning with ChatGPT is most effective when teachers act as co-moderators in the learning process. In Indonesia, this can be implemented through micro-credential programs for teachers (10–15 hours) focusing on *prompt engineering*, *chain-of-thought* techniques, and strategies for balancing AI support with learner autonomy (Puspita et al., 2023). Teachers may also use integrated feedback templates, where ChatGPT provides draft comments that teachers then verify and enrich with metacognitive notes.

### 3.3 Increased Student Engagement

Multiple studies confirm that ChatGPT significantly enhances student engagement in the learning process. Classrooms that integrate this technology report increased participation and active learning time, especially in interactive and collaborative activities (Diantama, 2023; Ramadhan et al., 2023). ChatGPT helps students become more confident in asking questions, engaging in discussions, and solving challenging problems through project-based or case-based learning.

Suharmawan (2023) reported that AI-based tools can increase student participation by up to 30% compared to traditional methods. Similarly, Nair, Kaur, and Joseph (2023) showed that ChatGPT democratizes access to instant clarification, turning passive learners into active participants. The *American Psychological Association* (2025) also supported this, noting that engagement improves when AI is used to broaden equitable access to information in the classroom.

However, a study published in *Frontiers in Education* (2025) emphasized that increased engagement is not automatic; the design of activities and student roles is a key moderating factor. In Indonesia, teachers are encouraged to develop role-based lesson plans, assigning students as *researchers*, *skeptics*, or *summarizers* when using ChatGPT to foster critical thinking. Furthermore, implementing digital classroom protocols that define what, when, how, and why AI should be used can prevent shallow dependency and promote healthy digital literacy (Baskara, 2024).

### 3.4 Changes in Teachers' Roles

The advancement of AI technology has also led to a profound transformation in teachers' professional identity. Teachers now serve as learning experience designers, resource curators, and coaches for metacognition and academic ethics. Ausat et al. (2023) emphasized that ChatGPT does not replace teachers but rather strengthens their capacity to orchestrate adaptive and reflective learning.

Fernández-Cerero et al. (2025) noted that AI can serve as a catalyst for enhancing teachers' digital competence when implemented strategically and accompanied by reflective practice. These findings align with Baskara (2024), who observed a shift in teachers' focus from knowledge transmission to facilitating critical and creative thinking. A study published by *Taylor & Francis Online* (2025) also found that teachers' willingness to adopt ChatGPT increased after participating in ethical discussions and hands-on practice sessions.

In the Indonesian education context, this role shift can be supported by strengthening the Continuous Professional Development (CPD) curriculum, positioning teachers as AI Literacy Coaches. Teachers are encouraged not only to deliver content but also to guide students in fact-checking, source triangulation, and ethical prompt writing. The establishment of digital communities of practice, such as AI-based *lesson study* groups in KKG and MGMP forums, can further promote

collaboration among teachers in sharing *prompt packs*, assessment rubrics, and AI-resilient teaching strategies (Indriani, 2024).

### 3.5 Challenges and Concerns

Despite its numerous benefits, the integration of ChatGPT in education also presents significant challenges. Ausat et al. (2023) and Faiz & Kurniawati (2023) identified issues related to information reliability, academic integrity, and unequal access to technology. ChatGPT can produce inaccurate or misleading information (*AI hallucination*), making the teacher's role as a verifier and ethical guide increasingly important.

Suharmawan (2023) and Rohaizam (2024) highlighted ethical concerns such as plagiarism, overreliance on AI, and reduced originality in student work. Many Indonesian schools have adopted in-class and flipped assessment models to minimize academic dishonesty (Wibowo et al., 2023). *AP News Education* (2025) also reported that several international institutions have implemented an "AI Disclosure Clause" requiring students to declare AI usage in academic submissions.

Recent global policies, as reported by *WIRED* (2025), introduced the *study mode* feature designed to encourage open questioning rather than direct answer copying. However, this feature's success depends heavily on cultivating a healthy classroom culture. Thus, strengthening AI literacy and academic ethics remains essential (Fernández-Cerero et al., 2025).

In the Indonesian context, the main challenge lies in the digital divide between urban and rural schools. Puspita et al. (2023) emphasized the need for free training programs and open-source resources for teachers to bridge this capacity gap. Government support and institutional collaboration are critical to ensuring that ChatGPT integration promotes educational inclusivity rather than creating new inequalities.

## CONCLUSION

This study affirms that the emergence of ChatGPT marks a pivotal moment in the ongoing AI-driven pedagogical revolution. The findings reveal that ChatGPT not only transforms how teachers teach but also redefines the role of teachers in modern classrooms. Teachers now function as *learning designers* and *AI co-facilitators* who orchestrate collaborative, personalized, and reflective learning experiences. This transformation demonstrates that technologies such as ChatGPT are not merely instructional tools but cognitive partners that extend and enhance human pedagogical capacity.

The novelty of this study lies in its integrative understanding of digital transformation and the shifting professional identity of teachers—where technology does not replace the teacher's role but strengthens it in fostering meaningful interaction and learning. With appropriate implementation, ChatGPT can promote the development of a hybrid learning ecosystem that balances artificial intelligence with the humanistic values of education.

Nevertheless, the study also highlights several challenges that must be addressed, including students' potential dependence on technology, teachers' limited digital literacy, and the risk of diminishing social interaction in classrooms. Therefore, the successful implementation of ChatGPT in education depends largely on teachers' readiness, supportive educational policies, and inclusive digital infrastructure.

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