

Chapter 4

Integrating ChatGPT into Teaching: Educators' Insights Using the SAMR Model and Bloom's Taxonomy

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ABSTRACT

This research investigates how educators can incorporate ChatGPT into teaching, utilizing the SAMR (Substitution, Augmentation, Modification, Redefinition) model and Bloom's Taxonomy as guiding frameworks. The study aimed to explore educators' readiness to adopt ChatGPT and understand its potential to enhance teaching and learning. A qualitative methodology was employed, involving structured interviews, semi-structured interviews, and reflective documents with 10 educators from China, selected via purposive sampling for diverse perspectives. Data collection focused on AI familiarity, attitudes towards its use, and how ChatGPT aligns with SAMR and Bloom's Taxonomy. Thematic analysis revealed varied levels of readiness and confidence, despite educators recognizing ChatGPT's transformative potential. Key challenges identified include concerns about AI-generated content accuracy and

DOI: 10.4018/979-8-3373-0847-0.ch004

the need for professional development, while opportunities were seen in fostering higher-order thinking and interactive environments.

INTRODUCTION

The rapid advancement of technology, particularly in the field of artificial intelligence (AI), has significantly impacted the landscape of education (Alam, 2021). One notable example is ChatGPT, a large-scale language model developed by OpenAI (Haleem, Javaid, & Singh, 2022). ChatGPT has gained immense popularity among educators due to its ability to mimic human-like dialogue and provide feedback, making it a valuable tool for enhancing teaching and learning (Abdullah, Madain, & Jararweh, 2022). This innovative technology has the potential to revolutionize traditional teaching methods in the classroom by increasing student engagement and making the learning process more interactive and engaging.

A Brief History of OpenAI and ChatGPT

OpenAI is a research facility dedicated to promoting and developing “friendly AI” for the benefit of humanity (Floridi & Chiriatti, 2020). ChatGPT, OpenAI's most important project, is a large-scale language model trained to respond to user input in a human-like manner. Its applications are wide-ranging and include virtual assistants, customer support chatbots, and language translation services (George & George, 2023). OpenAI was founded in December 2015 by several prominent figures in technology and AI (OpenAI, 2015). Their vision was to create AI that would benefit all of humanity. Initially, OpenAI followed the path of traditional AI research, focusing on areas like reinforcement learning, generative modeling, robotics, and natural language processing (Arulkumaran et al., 2017). The development of GPT (Generative Pre-trained Transformer), first unveiled in June 2018, marked a significant shift in OpenAI's research. GPT is a large-scale, unsupervised language model trained on a vast dataset of internet texts. It utilizes the Transformer architecture, allowing it to generate coherent and contextually relevant sentences (Habib et al., 2021).

OpenAI's continued development of GPT resulted in several iterations, each with improved capabilities. GPT-2, released in 2019, demonstrated the ability to generate more coherent, context-rich sentences and even plausible short stories (Liu, 2023). GPT-3, released in 2020, further revolutionized the AI landscape by leveraging 175 billion machine learning parameters, enabling it to produce incredibly human-like text (Ferruz & Höcker, 2022). Its applications include writing essays, answering questions, translating languages, and even generating poetry that is indistinguishable

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