

Chapter 8

Enhancing Students' Writing Skills Through a Dialogic Process With Instructional AI in the Post-Pandemic Era

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ABSTRACT

Over the pandemic period, most schools at all levels were equipped with several online platforms for teaching and learning and introduced to several AI-based instructional systems, such as generative AIs and AI-based search engines. Considering the process of adapting to this new teaching and learning environment with advanced technologies in the post-pandemic era, this study strived to construct a theoretical foundation for adaptive AI pedagogies and develop a practical instructional sequence that engages students with AI in their composition through a dialogic process between students and instructional AIs. In addition, this study will further discuss human instructors' role in the student learning process assisted by instructional AI.

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INTRODUCTION

The world has entered the age of human-machine communication, as artificial intelligence (AI) technology has been integrated into many daily devices used for private and work lives. Such socio-technological trend has accelerated through the COVID-19 pandemic when shutdowns, social distancing, and quarantines limited interpersonal communication. Over the pandemic period, most schools at all levels were equipped with several online platforms for teaching and learning and introduced to several AI-based instructional systems, such as generative AIs and AI-based search engines. Considering the process of adapting to this new teaching and learning environment with advanced technologies in the post-pandemic era, this study strived to construct a theoretical foundation for adaptive AI pedagogies and develop a practical instructional sequence that engages students with AI in their composition through a dialogic process between students and instructional AIs. In addition, this study will further discuss human instructors' role in the student learning process assisted by instructional AI.

REDEFINING AI IN THE CLASSROOM

There is polarity between individuals who advocate for using Artificial Intelligence (AI) or not in teaching students is fervent. First, those who support the use of AI in education highlight that it addresses several challenges we face in school systems. First of all, AI enables personalized learning experiences by tailoring content, pace, and assessments. Adaptive algorithms will adjust difficulty levels, recommend necessary resources, and provide targeted feedback[REMOVED HYPERLINK FIELD] to individual students (Akgun & Greenhow, 2021). In addition, AI-powered assessment systems can grade assignments, quizzes, and exams promptly, which most teachers desire to do more effectively and immediately. In the assessment process, immediate feedback helps students understand their strengths and weaknesses, leading to better learning outcomes. AI tools can even more closely engage students through interactive content, simulations, and gamified learning experiences. For example, virtual tutors and chatbots can provide real-time assistance, fostering active participation (Popenici & Kerr, 2017). Furthermore, based on the machine learning technology, AI can analyze vast amounts of data on each student's performance and achievement to identify their patterns in learning, which help maximize the learning effectiveness with other advantages explained above.

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