

Assignment 2:

Integrating Artificial Intelligence into Smart Assessment Systems to Develop Education for Middle and Secondary Schools in Saudi Arabia

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Research Problem

This research belongs to the field of educational technologies and their development, focusing on the integration of artificial intelligence into intelligent assessment systems. In this research, we focus on the educational environment of middle and high schools in Saudi Arabia, where educational institutions face increasing challenges in improving the quality of assessments and keeping pace with the digital transformation of educational processes. This challenge falls within a broader context that includes the development of effective and personalized assessment tools that reflect individual differences among learners and provide immediate feedback that helps teachers address each student's weaknesses, as well as supporting the requirements of the Kingdom's 2030 Vision for smart education. Hence, the research highlights the field of AI-supported smart educational assessment and explores the possibilities of transforming traditional practices into more adaptive, effective, and equitable systems. With the rapid development of artificial intelligence technologies, student assessments remain traditional, relying on fixed paper tests or manual assessments that are unable to keep pace with the modern requirements of adaptive learning and immediate feedback. there is a lack of AI-based practical models that provide a more accurate and comprehensive assessment of students' educational performance within flexible interactive environments. In recent years, artificial intelligence has proven its effectiveness in supporting the educational process through personalization and predictive analysis technologies. According to a recent study, “AI will be able to understand the characteristics of each student: learning style, preferences, as well as the specifics of knowledge acquisition, and as a result, it will be able to provide educational materials and a learning experience appropriate for each student” (Zhuk & Zhuk, 2023, p. 7)

This possibility reflects the role of artificial intelligence in providing personalized education that accommodates individual differences, thereby contributing to improving educational outcomes and enhancing student achievement.

Research Objectives

- 1 .To review recent academic literature and identify the latest tools and techniques in artificial intelligence when applied to education.
- 2 .To analyze existing data on the benefits and drawbacks associated with the use of these AI-based educational systems—such as adaptive learning, personalized education, cheating detection, and educational efficiency assessment .
- 3 .To propose a practical AI-based framework for assessing student performance: the system includes automatic question generation, automatic grading, and a detailed report on student performance .
- 4 .To support adaptive evaluation through artificial intelligence: Questions are adjusted according to the student's level, allowing for performance improvement through interactive analytics and intelligent distribution of educational content.
- 5 .To employ performance analytics to display detailed data on each student's strengths and weaknesses, enabling teachers to intervene in a targeted manner and achieve more personalized education.

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