

Applying AI in the High Schools of Kazakhstan: A Strategic Approach to Enhancing Educational Outcomes

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Abstract:

The application of Artificial Intelligence in education is transforming school education systems, providing a foundation for improving academic outcomes. This study investigates the implementation of AI in high schools across Kazakhstan, focusing on its impact on student performance, teacher workload, and overall quality of education.

The research evaluates the effectiveness of a range of AI-driven educational tools, including adaptive learning platforms, automated grading systems, and AI-based tutoring applications. Quantitative data measuring changes in student performance and reductions in teacher workload was collected from a sample of 25 private and state high schools, located in major cities across Kazakhstan, where these tools had been implemented for at least a four-year period. In addition, qualitative data was gathered through surveys from a sample of 114 teachers and 308 students who were employees or enrolled in the mentioned schools. Twelve in-depth interviews with educational experts and school administrators were conducted.

The methodology employed a mixed-methods approach, integrating statistical analysis of performance data with thematic analysis of survey and interview responses. This approach allowed for a comprehensive evaluation of the impact of the AI on school education.

Study concludes that while AI has the potential to significantly enhance the quality of education overall, several crucial factors should be considered: successful implementation requires addressing key barriers, including the need for targeted teacher training and ensuring equitable access to AI technologies across all schools. The findings of the study can be generalized and applied to improve the efficiency of educational systems.

Keywords:

Artificial Intelligence, High Schools, Kazakhstan, Educational Innovation, Teacher Training, Digital Literacy.