

AUTOMATING EDUCATIONAL PROCESSES AT KHERSON STATE MARITIME ACADEMY: CHALLENGES, IMPLEMENTATION, AND FUTURE PROSPECTS

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Introduction

Overview of global trends in digital transformation in education:

Global Perspective: At the dawn of the 21st century, global education began undergoing significant changes, particularly through the adoption of digital technologies. The deployment of the Internet of Things, artificial intelligence, machine learning, and cloud computing has transformed methods of teaching and managing educational data. There is a particular emphasis on increasing the accessibility of education through Massive Open Online Courses (MOOCs) and e-learning platforms, which offer flexible opportunities for distance learning.

Efficiency and Challenges: Digital transformation enhances the quality of education by providing broader access to resources and personalized learning. However, it also presents challenges, including issues related to data security, privacy, and the need to improve digital literacy among teachers and students.

Specific challenges for Kherson State Maritime Academy:

Urgent Need for Adaptation: Kherson State Maritime Academy faced an urgent need to adapt its educational and administrative processes in response to military actions and the COVID-19 pandemic [1]. These events led to a rapid transition to distance learning, requiring immediate changes in teaching methods and management.

Crisis Response: The academy's response included developing rapid solutions to ensure the continuity of education, necessitating the integration of new technologies and teaching methods, including electronic document management and ensuring access to educational resources online.

Initial response strategies and the need for robust, scalable digital infrastructures:

Strategic Initiatives: The response to the crisis included strategic planning and the deployment of digital tools such as Google Workspace to support distance learning and administration. An infrastructure was developed to ensure the stability and security of educational processes.

Scalability and Continuity: During the deployment of new systems, attention was paid to their scalability to adapt to changing user volumes and needs. The systems were designed to ensure the reliability of the educational process under any conditions.

Methodology

Overview of academic and technical literature on digital transformation in higher education:

Purpose of the Review: To identify and analyze existing research and publications that highlight various aspects of digital transformation in education, including technology implementation, challenges, outcomes, and best practices.

Methodology: A systematic review of the literature, including scholarly articles, books, industry reports, and academic discussions covering topics such as knowledge management, digital learning platforms, and measures to ensure data security and privacy.

Case study method with a focus on the approaches of Kherson State Maritime Academy:

Object of Study: Kherson State Maritime Academy as an example of an institution actively integrating digital technologies in response to contemporary challenges.

Procedure: Detailed case analysis based on project documentation, internal academy reports, and an assessment of implemented changes. This method allows for a deeper

understanding of the context, processes, and challenges, as well as evaluating the effectiveness and impact of digital transformation.

Data collection through interviews with key stakeholders (deans, department heads, IT staff) and analysis of implementation results:

Data Collection Method: Conducting semi-structured interviews with key stakeholders to collect primary data on the experience of implementing and using digital systems.

Analytical Approach: Coding and analysis of responses to identify common themes, issues, and successes associated with digital transformation at the academy. Where possible, quantitative data analysis is used to assess changes in productivity, process efficiency, and user satisfaction.

Main Part

Challenges leading to automation:

Impact of war and pandemic on traditional processes:

War and the pandemic introduced sudden changes to the regular rhythm of academic life, disrupting access to physical classrooms and limiting interpersonal interactions [2]. This necessitated a rapid rethinking of teaching methods and administrative processes.

The inability to maintain usual paper documentation prompted the introduction of extraordinary measures to restore the educational process in digital format.

Analysis of immediate impacts and academy's response:

The academy's response included urgently implementing measures to ensure the accessibility of education through distance platforms. A series of initiatives were developed and launched to minimize disruptions in education.

Development and implementation of automated systems:

Google Workspace: implementation and integration:

Choosing Google Workspace was a logical decision due to its extensive functionality, scalability, and reliability. The platform allowed for the integration of communications, document flow, and task management into a single digital space, significantly simplifying the transition to distance learning.

Development of the Department KSMA System:

Technical specifications and functionalities: The system was designed as a comprehensive solution for managing educational processes and documentation [3–5]. It includes modules for student registration, academic record management, and integration with internal and external databases.

Role of the system: Department KSMA became a central element in ensuring the digital integrity and security of the academy's educational data, providing real-time access to information and a high level of data protection [6].

Results and evaluation:

Evaluation of the effectiveness of digital systems: Analysis of the effectiveness of the new systems showed significant improvements in data processing and reporting efficiency, as well as increased user satisfaction due to the convenience and accessibility of the services.

User feedback: Positive feedback from students and teachers confirmed that the systems not only resolved the issues of educational continuity during crises but also provided better organization of the educational process.

Challenges during implementation: Despite the successes, there were challenges, such as the need for continuous technical updates, staff training, and student adaptation to new tools.

Conclusions

Summary of the impact of automation on the academy's educational processes:

Automation at Kherson State Maritime Academy has significantly transformed educational processes, providing a crucial leap in quality and efficiency. The introduction of systems such as Google Workspace and Department KSMA has enhanced accessibility, ease of use, and integration of educational resources, ensuring the continuity of educational activity even under challenging conditions of war and pandemic.

Reflections on the stability and scalability of implemented systems:

The systems implemented at the academy demonstrated high resilience and scalability. However, to ensure long-term stability, continuous updates to technical support, staff training, and responses to changes in the technological landscape are necessary. The educational institution must actively work on updating and adjusting systems to ensure their readiness for future challenges.

Future prospects and potential expansion of digital systems at the academy:

Given the success of automation and positive user reception, Kherson State Maritime Academy faces the prospect of further expanding digital systems. Opportunities include developing proprietary mobile applications, enhancing integration with artificial intelligence for personalized learning, and expanding digital resources to ensure more effective data and resource management.

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