

INTEGRATION OF OLP OTG AND LABSTER PLATFORMS INTO LMS MOODLE: IMPACT ON EDUCATIONAL QUALITY AND STUDENT PROFESSIONAL SKILLS

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Introduction. The educational sector is undergoing significant transformations, driven by rapid technological advancements and changes in the global educational landscape. Current conditions, including the state of war and the COVID-19 pandemic [1], require adaptability and flexibility in teaching methods, leading to the necessity of implementing innovative educational platforms. Lms Moodle, widely used in many educational institutions, has proven effective over the last decade, but today's challenges demand even greater integration with modern technologies to ensure high-quality education.

To enhance interactivity and increase the functionality of the educational process, Lms Moodle integrates with advanced platforms such as OLP OTG and Labster. OLP OTG specializes in training for maritime and inland water transport [2–4], offering courses designed according to international standards such as IMO and IHO, ensuring the relevance and professionalism of educational materials. On the other hand, Labster revolutionizes natural science education through virtual laboratories that allow students to immerse deeper into scientific disciplines via interactive simulations.

This integration meets the contemporary demands of the educational process, where accessibility, clarity, and interaction are key, facilitating not only better material assimilation but also enhancing student motivation and engagement. Implementing these platforms into Lms Moodle creates a single flexible and adaptive educational environment capable of effectively responding to rapid changes in educational needs and challenges [5, 6].

Methodology. This study aims to determine the effectiveness of integrating OLP OTG and Labster platforms into the Lms Moodle KSMA system, focusing on changes in student educational outcomes and the overall efficiency of the educational process. The research methodology is based on a mixed approach, incorporating several key data collection and analysis methods:

Observation: Monitoring the use of platforms in real educational settings allows for evaluating changes in student behavior and interaction with educational materials. Observations are conducted during the execution of educational tasks, particularly during work in Labster's virtual laboratories and while using courses on OLP OTG.

Surveys: Surveying students and teachers helps gather self-assessments of the educational process's effectiveness and satisfaction with the new platforms. Surveys include questions about the perception of material interactivity, ease of use of the platforms, and impact on learning motivation.

Analysis of student educational outcomes: Collecting quantitative data on grades, successful completion of educational tasks, and participation in virtual laboratories. Data from before and after the platforms' implementation are used to assess changes in academic results.

Statistical data analysis: Using statistical software (e.g., SPSS or R) to analyze the collected data to identify statistically significant changes in student performance. The analysis may include t-tests for dependent samples, correlation analysis, and regression analysis to assess the impact of platform use on educational outcomes.

Case studies: Analyzing specific examples of platform use, describing successful cases or particular challenges faced by students and teachers. This allows for a detailed analysis of individual integration cases and their impact on the educational process.

This approach enables a comprehensive assessment of the effect of implementing OLP OTG and Labster platforms and provides a scientific basis for conclusions about their effectiveness in the educational environment.

Main Part.

Overview of the OLP OTG platform:

Specifics and purpose of the platform: The Ocean Learning Platform (OLP) OTG is specifically designed for training maritime personnel. The platform offers courses covering a broad spectrum of maritime disciplines, from navigation to engineering sciences, considering the specifics and demands of modern seafaring.

Impact on the quality of maritime education and compliance with international standards: The use of OLP OTG ensures high-quality education that meets international standards such as IMO (International Maritime Organization) and IHO (International Hydrographic Organization). This provides academy graduates with competitive advantages and higher employability on a global scale.

Overview of the Labster platform:

Description of interactive virtual laboratories: Labster provides access to virtual laboratories that allow students to perform complex scientific experiments in a safe and controlled environment. These laboratories use advanced graphical technologies and simulation algorithms to model real scientific processes.

Effectiveness in teaching physical disciplines through simulations: Labster's simulations significantly improve the assimilation of complex scientific concepts, allowing students to better understand theoretical material through practical experience. This enhances motivation and activity in learning, evidenced by positive changes in academic results.

Integration and synergy with Lms Moodle:

Technical aspects and organizational challenges: Integrating additional platforms into Lms Moodle requires developing technical solutions to ensure compatibility and stability of operation. One of the key tasks is ensuring continuous access for students to courses on both platforms through a single interface.

Increasing student activity and interest: Integrating state-of-the-art platforms such as OLP OTG and Labster with Lms Moodle promotes student engagement, enhances their interaction with educational materials, and improves the overall quality of education, facilitating deeper knowledge assimilation.

Conclusions. The results of the study clearly show that the integration of OLP OTG and Labster platforms into the Lms Moodle educational environment has a significant impact on the learning process:

Enriching educational content: The introduction of OLP OTG and Labster significantly expands the capabilities of the traditional Moodle educational environment, adding depth and practical application to theoretical knowledge. This provides students with access to specialized and high-quality resources necessary for their professional training.

Improving understanding of subjects: The interactivity and realism of Labster's virtual laboratories, as well as the purposefulness of OLP OTG's training courses, allow students to better assimilate complex scientific and technical concepts, fostering a deeper understanding of the subjects.

Enhancing professional skills: Practical experience gained through simulations and specialized training improves student skills, making them more competent and prepared to address real-world challenges in their professional activities.

Increasing students' competitiveness in the job market: Students who use these platforms gain an advantage due to an enhanced level of understanding of subjects and deeper professional skills, providing them with higher competitiveness compared to their peers who study using traditional methods.

This research confirms that integrating innovative educational platforms into traditional educational systems can significantly improve the quality of higher education, making the learning process more effective, interactive, and relevant to the needs of the modern job market.

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