

ORGANIZATION OF THE EDUCATIONAL PROCESS IN “CLINICAL NURSING IN PEDIATRICS” UNDER WARTIME CONDITIONS ON THE MOODLE PLATFORM: CHALLENGES AND ADAPTATION

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Introduction. The wartime situation in Ukraine has caused significant transformations in the organization of the educational process, highlighting the need for rapid implementation of digital solutions capable of ensuring continuity of learning and maintaining the quality of training for future healthcare professionals. The Moodle platform has become a key tool for distance and blended education, enabling the adaptation of teaching the discipline “Clinical Nursing in Pediatrics” at Kharkiv National Medical University to new circumstances.

The aim of the study – to analyze the specific features of organizing the educational process in the discipline “Clinical Nursing in Pediatrics” on the Moodle platform under wartime conditions and to identify the main directions of adaptation of the educational environment.

The main part. The electronic course, developed according to the educational program, includes structured learning modules, interactive assignments, testing instruments, asynchronous and synchronous communication tools, case-based workshops, photo archives of laboratory and instrumental materials, and emergency diagnostic protocols. A special role is played by the case method, which promotes the development of clinical reasoning, the ability to analyze symptoms, identify leading syndromes, formulate preliminary diagnostic hypotheses, and plan additional examinations. The use of video conferences, forums, and chats ensures pedagogical interaction, reduces student anxiety, and increases engagement. The platform provides continuous access to materials, individualization of the learning trajectory, and integration with external digital resources. In 2023, the implementation of a hybrid learning model made it possible to optimally combine distance technologies with practical training in safe clinical settings.

Conclusions. The use of Moodle ensured the stability and accessibility of the educational process, supported the formation of professional competencies, and enabled effective integration of theoretical and practical training of future pediatric nurses during wartime.

Keywords: distance learning; Moodle; pediatric nursing; professional competence; clinical cases; wartime education; medical training; hybrid learning.

ОРГАНІЗАЦІЯ ОСВІТНЬОГО ПРОЦЕСУ З ДИСЦИПЛІНИ «КЛІНІЧНЕ МЕДСЕСТРИНСТВО В ПЕДІАТРІЇ» ЗА УМОВ ВОЄННОГО ЧАСУ НА ПЛАТФОРМІ MOODLE: ВИКЛИКИ Й АДАПТАЦІЯ

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Вступ. Воєнні умови в Україні зумовили необхідність швидкої адаптації освітнього процесу, пошуку технологічних рішень для забезпечення неперервності навчання та формування професійних компетентностей майбутніх фахівців. За цих умов особливого значення набувають цифрові інструменти, що дозволяють підтримувати якість освіти незалежно від зовнішніх обставин. Платформа Moodle стала основою дистанційної і змішаної освіти, дозволивши оптимізувати викладання дисципліни «Клінічне медсестринство в педіатрії» у Харківському національному медичному університеті та забезпечивши студентам можливість стабільного, безпечного і структурованого навчання.

Мета роботи – проаналізувати особливості організації навчальної діяльності з дисципліни «Клінічне медсестринство в педіатрії» за умов воєнного часу на платформі Moodle та окреслити напрями адаптації освітнього процесу відповідно до сучасних викликів.

Основна частина. Розроблений електронний курс містить структуровані теми відповідно до освітньої програми з використанням широкого спектра ресурсів Moodle (форумів, вікі, баз даних, інтерактивних завдань, тестів, кейс-практикумів, фотоархівів, протоколів невідкладної діагностики, засо-

бів групової взаємодії). Клінічне мислення формується завдяки опрацюванню клінічних випадків, що включають анамнез, скарги, результати первинного огляду і лабораторно-інструментальних досліджень. Використання синхронних (чати, відеоконференції) та асинхронних засобів комунікації підтримує педагогічну взаємодію, мотивацію і психологічну стабільність студентів. Особливу увагу приділено можливості індивідуального темпу навчання, доступу до матеріалів у будь-який час та інтеграції зовнішніх сервісів, що розширюють функціональні можливості курсу. В 2023 р. університет запровадив гібридну модель навчання, поєднуючи онлайн-формат і роботу за безпечних клінічних умов, що дозволило підсилити практичну підготовку.

Висновки. Адаптація навчання на платформі Moodle забезпечила безперервність освітнього процесу, підвищила гнучкість і доступність навчання та сприяла формуванню ключових професійних компетентностей майбутніх медичних сестер. Гібридний формат довів свою ефективність як інструмент інтеграції теорії і практики за умов воєнного часу та може бути основою подальшого розвитку сучасних освітніх підходів.

Ключові слова: дистанційне навчання; Moodle; медсестринство в педіатрії; професійна компетентність; клінічні кейси; воєнний стан; медична освіта; гібридне навчання.

Introduction. In the context of political, economic, and social transformations in Ukraine, the emergence of innovative approaches to educational processes is increasingly stimulated. Consequently, modernized approaches to organizing the learning process are actively evolving, with distance education becoming one of the most prominent directions, as it broadens opportunities for delivering educational services [1].

Distance learning, grounded in up-to-date information and communication technologies, also expands the teacher's professional responsibilities: they are required to guide students' cognitive activities, create digital versions of the academic components they teach, and enhance their creative engagement and qualifications in line with current innovations. At the same time, this mode of study has a beneficial influence on learners by strengthening their intellectual and creative capacity through self-management, motivation for acquiring knowledge, effective use of digital tools, and the ability to make independent and responsible decisions [1].

The aim of the study – to analyze the specific features of organizing the educational process in the discipline "Clinical Nursing in Pediatrics" on the Moodle platform under wartime conditions and to identify the main directions of adaptation of the educational environment.

The main part. Moodle (Modular Object-Oriented Dynamic Learning Environment) is a widely used open-source learning management system (LMS) that has earned the trust of millions of users around the globe over many years. Over time, the Moodle community has expanded rapidly, uniting educators, programmers, and enthusiasts from different countries. As a result, they have developed numerous plugins, themes, and

integrations that significantly broaden the platform's functionality [2, 3].

Gradually, Moodle has evolved from a basic tool for organizing online courses into a robust system for managing the entire learning process. Its continued success is largely driven by its open-source nature, adaptability, and ongoing improvement. Today, the Moodle platform plays a crucial role in modern education and remains actively used for creating effective and dynamic learning environments.

Fundamentally, this comprehensive online learning platform offers a wide range of tools for both instructors and learners, ensuring the uninterrupted flow of the educational process even under conditions of remote or blended learning. In this regard, Moodle supports the continuity of learning in the following ways:

- 1. Centralized access to educational content:** All course materials, assignments, presentations, and additional resources are gathered in a single location. Students can access them at any time and from any device with an internet connection.
- 2. Flexible learning timetable:** Students are able to study whenever it suits them, revisit previously covered topics, and complete tasks at a pace that matches their individual needs.
- 3. Interactive learning formats:** Moodle supports multiple instructional formats, such as discussion forums, collaborative wikis, quizzes, and knowledge-checking assignments. This variety makes the learning experience more dynamic and efficient.
- 4. Immediate feedback:** Instructors can comment on submitted work and respond to students' questions almost instantly, which helps learners better grasp the material and receive timely assistance.

5. Modularity and personalization: Moodle offers extensive customization options. Educators can design electronic courses that fully align with educational and methodological requirements while demonstrating high pedagogical proficiency.

6. Integration with external tools: Moodle seamlessly connects with various services such as Google Drive, YouTube, Zoom, and others. This enhances the platform's capabilities and increases the interactivity of the learning process.

7. Collaboration opportunities: Moodle promotes cooperation between students and teachers, enabling group work, idea sharing, and joint task completion, which also contributes to developing practical and clinical skills

Moodle has proven to be an indispensable tool for organizing effective online learning. Owing to its extensive capabilities, it not only supports the continuity of the educational process but also helps create optimal conditions for student engagement and learning outcomes.

The history of Kharkiv National Medical University reflects a series of challenges and transformations. However, the current period represents an unprecedented test for the institution. The full-scale war has introduced a new dimension to the university's development, necessitating a reconsideration of traditional approaches to organizing and managing the educational process.

Pediatric teaching in nursing represents a field where scientific knowledge intersects with practical skill and empathy. Providing care for a child extends beyond performing medical procedures; it requires establishing a safe and supportive environment that promotes recovery. Accordingly, pediatric nursing educators are tasked with preparing highly qualified specialists capable not only of delivering emergency care but also of engaging in preventive education, guiding parents in the fundamental aspects of infant care and well-being.

In this article, we aim to explore the specific features of teaching nursing under wartime conditions and to outline the primary directions for adapting curricula.

The Department of Pediatrics No. 2 of Kharkiv National Medical University has developed an electronic course titled "Clinical Nursing in Pediatrics" on the Moodle platform [4, 5]. This course was designed in full accordance with the program of the educational component "Clinical Nursing in Pediatrics", specialty 223 "Nursing". Prior to developing this course, the

authors successfully completed the electronic course "Fundamentals of the Methodology of Creating Electronic Courses in the Field of Medical Education" [6, 7], which provided essential methodological support for course creation.

The aim of teaching the educational component "Clinical Nursing in Pediatrics" is to address the following objectives:

1. Enhance understanding of the organization of medical and preventive care for children and the specific functions of nurses within these institutions.
2. Identify the etiological and pathogenetic factors associated with the most prevalent somatic diseases in childhood.
3. Classify and interpret the typical clinical manifestations of the most common somatic diseases in children.
4. Develop an examination plan, prepare patients for assessments, and analyze laboratory and instrumental data in the typical progression of common childhood somatic diseases.
5. Perform differential diagnosis and formulate a nursing diagnosis based on the typical course of the most frequent somatic diseases in childhood.
6. Demonstrate proficiency in patient care, including diet therapy, treatment, rehabilitation, and preventive measures for the most common childhood somatic conditions.
7. Provide initial pre-medical emergency care for children with somatic diseases.
8. Evaluate the prognosis of the most prevalent somatic diseases in children.
9. Exhibit understanding and adherence to the moral, deontological, and professional principles required of medical practitioners in pediatrics.

The course is structured according to the program of the educational component, with clearly defined sections and topics. Moreover, each topic includes a detailed set of activities and learning resources. Specifically, every topic covers essential concepts, classifications, etiology and pathogenesis, clinical manifestations and diagnostics, principles of treatment and emergency care, patient care algorithms, as well as relevant regulatory documentation.

In order to develop professional competence, which encompasses proficiency in integrating professional and legal guidelines into routine practice, recognize and interpret health status changes, identify signs of illness and disability, and efficiently implement professional

skills, medical procedures, and interventions, the Moodle platform's interoperability features are actively utilized. These features, in particular, allow educators to create case-based workshops that present specific clinical scenarios, thereby enhancing practical learning and bridging theoretical knowledge with real-world applications.

Each clinical case included in the workshop provides a comprehensive description of the patient's complaints, medical history, lifestyle, and the findings from the initial physical examination. By working with this information, future healthcare professionals develop the ability to identify and document the primary clinical symptom or syndrome. Furthermore, analyzing the data enables students to recognize the most critical signs of the disease that define its clinical presentation, which forms the basis for further diagnostic reasoning.

In addition, students learn to determine the most probable or syndromic diagnosis. Relying on the identified symptoms and syndromes, they formulate preliminary diagnostic hypotheses, drawing on their knowledge of pathological physiology, pediatric propaedeutics, and other clinical disciplines. Moreover, they justify the necessity of laboratory and/or instrumental examinations to confirm or rule out their preliminary diagnoses, as well as to gather additional information about the patient's condition. This process actively contributes to the development of clinical thinking and deepens the understanding of the diagnostic significance of various investigative methods.

To conduct differential diagnostics, students must carefully distinguish between diseases that share similar clinical features. Each case frequently presents overlaps with other nosological entities; therefore, the practicum tasks require a detailed comparative analysis, enabling learners to separate the most likely diagnosis from alternative conditions with overlapping symptoms.

Overall, the integration of case-based practicums into the educational process not only reinforces theoretical knowledge but also cultivates clinical intuition, strengthens decision-making skills under uncertain conditions, and fosters a responsible and systematic approach to patient diagnostics.

In contemporary medical diagnostics, access to high-quality imaging data and associated information is of paramount importance. Within our course, an integrated photo library has been developed, combining an extensive collection of radiographs along

with corresponding study results. Importantly, the use of the "teka" and "wiki" resources allowed this material to be presented in a visually engaging and informative manner, thereby enhancing students' ability to critically evaluate laboratory and instrumental study results.

Effective patient information gathering forms the foundation of high-quality medical care, offering insight into a child's medical history, current health status, and individual needs [8]. However, under conditions of limited time and large volumes of data, healthcare professionals require structured and systematic approaches to information collection. In this context, the "folder" resource serves as a powerful tool, enabling information to be organized logically, instructions and questions to be presented systematically, and stages of the process to be clearly delineated. This structure supports healthcare professionals in consistently and comprehensively obtaining essential patient data.

In scenarios that demand rapid and accurate decision-making, particularly in healthcare settings, the availability of clear and accessible emergency diagnostic protocols is crucial. By integrating these protocols into our Moodle-based e-course, we provide students with immediate access to up-to-date guidelines, facilitating comprehension and practical application. Additionally, collaborative work resources play a key role in developing competent specialists who can act efficiently in critical situations, ultimately safeguarding the health and lives of pediatric patients.

To stimulate and sustain students' cognitive engagement, tools such as the "database," "Wiki," and glossary were employed, allowing learners to independently enter and organize information they discovered. Moreover, forums became an essential mechanism for coordinating joint activities of students studying the specialty "Nursing" at Kharkiv National Medical University on the Moodle platform. These forums provided an asynchronous space for discussion of lecture materials, clinical cases, and experience sharing between students and instructors, regardless of their location. Ultimately, the forums facilitated question-and-answer exchanges, collaborative problem-solving, and academic communication, fostering a strong sense of community among students.

Furthermore, synchronous communication was supported through chats and integrated video conferences, enabling prompt resolution of questions and real-time consultations. These tools allowed students and instructors to discuss complex topics

as they arose and helped maintain an emotional connection between teachers and learners. Under conditions of instability and stress, the ability to receive immediate support and clarifications proved essential for maintaining the continuity of the educational process and supporting the psychological comfort of future medical specialists.

It is evident that medical education in Ukraine has undergone a second major transformation in recent years. Nevertheless, the need for accessible and flexible learning remains indisputable, alongside the ongoing prospects for further digitalization of education.

At the same time, direct interaction between future doctors and instructors remains crucial, as it provides comprehensive knowledge and practical skills under conditions closely resembling real clinical practice. Without patient contact, whether during practical classes or internships, students cannot fully consolidate their theoretical knowledge or develop and refine specific professional skills.

In response to these needs, in September 2023, Kharkiv National Medical University introduced a hybrid model of education, enabling students to receive instruction in modern facilities with a flexible approach, while maintaining direct collaboration

among students, teachers, and patients. Safe learning environments were established both on campus and at clinical bases (State Emergency Service inspection acts), providing conditions for practical training. This initiative represents one of the most promising directions in modern medical education, as overcoming challenges in acquiring practical knowledge not only ensures the preparation of competent doctors but also contributes to the development of a new generation of Ukrainian intellectuals.

Conclusions. The use of the Moodle platform ensured the stability and accessibility of the educational process in wartime conditions and created a flexible learning environment capable of adapting to rapid changes. Its interactive and case-based tools strengthened the development of professional and clinical competencies, while continuous access to learning materials supported students' independence and engagement. The integration of online resources with elements of practical training also contributed to a more effective connection between theoretical preparation and real clinical tasks. Overall, Moodle proved to be a reliable and efficient instrument for maintaining the quality of pediatric nursing education during the wartime period in Ukraine.

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