СЕКЦИЯ 2 ПЕРЕГРУЗОЧНЫЕ ПРОЦЕССЫ И ЭКОЛОГИЧЕСКАЯ БЕЗОПАСНОСТЬ В МОРСКИХ ПОРТАХ

СЕКЦИЯ 2ТЕҢІЗ ПОРТТАРЫНДАҒЫ ШАМАДАН ТЫС ЖҮКТЕМЕ ПРОЦЕСТЕРІ ЖӘНЕ ЭКОЛОГИЯЛЫҚ ҚАУІПСІЗДІК

SECTION 2 TRANSSHIPMENT PROCESSES AND ENVIRONMENTAL SAFETY IN SEAPORTS

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THE USE OF MOODLE COURSES TO INCREASE ENVIRONMENTAL AWARENESS OF CADETS WHILE MARITIME EDUCATION

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Abstract. Environmental security of society is closely linked to the levels of education, culture, and upbringing. The problem of developing ecological competence in future seafarers during their professional training is highly relevant. The purpose of this paper is to justify the relevance of studying the "Marine Environment" module in the "Maritime English" course and to foster the ecological competence of future seafarers. Recognizing the need to integrate environmental topics into the curriculum of maritime higher education institutions, the "Marine Environment" module was introduced as part of Maritime English language course.

Key words: Moodle, Maritime Education and Training, seafarers, Maritime English, MARPOL A crucial aspect in the methodology of forming ecological and natural competence in education is the individual's attitude toward nature as a value, the awareness of unity with the natural world, and the acquisition of ecological knowledge. Several researchers, including Culin J., Bielic T., and Jaksic K., have emphasized that the lack of ecological knowledge hinders the ecological awareness of future specialists and their attitudes toward environmental issues. To bridge this knowledge gap, educational activities designed to enhance ecological practice are proposed [1, p. 233]. Effective methods for students to acquire environmental knowledge include watching documentaries, participating in open discussions, going on online excursions, analyzing case studies, and more [2].

The purpose of this research is to justify the relevance of studying the "Marine Environment" module in the "Maritime English" discipline and to foster the ecological competence of future seafarers.

In today's rapidly changing world, Ukraine has adopted a competency-based approach to define the qualification requirements for graduates, aligning its educational content with European standards. Environmental education has also evolved, employing various teaching approaches and methods that prove most effective in nurturing the ecological competence of future specialists. Recognizing the need to integrate environmental topics into the curriculum of maritime higher education institutions, the "Marine Environment" module was introduced as part of Maritime English language course.

The world's rapid scientific and technological progress has led to environmental deterioration,

including pollution and the depletion of natural resources. Our waters face numerous challenges, including extensive plastic pollution, oil spills, wastewater discharge, storms, and overfishing. Consequently, fostering the ecological competence of future seafarers has become a priority for higher education institutions [3]. Future maritime professionals have a unique responsibility to manage oceans and waterways while minimizing their impact on the environment, both at sea and on the coast. Mishandling of spilled fuel, toxic cleaning agents, paints, improper waste disposal, and plastic pollution are common contributors to marine pollution [4]. Shipping, responsible for maritime and cargo transportation, significantly contributes to marine pollution. With over 70% of the Earth's surface covered by water, the maritime industry continues to grow rapidly. Such rapid industrial growth poses unwanted challenges to the marine ecological system, including marine waste and the consequences of sea pollution. Marine waste and associated litter are recognized as major causes of ocean pollution. International agreements to prohibit the discharge of polluted water and waste into open seas and oceans are becoming increasingly important in modern times.

While shipping plays a crucial role in the contemporary global economy, it should not come at the expense of the environment [5]. Owners of vessels can help reduce their environmental impact through careful planning and conscientiousness, such as slow steaming, employing environmentally-friendly vessels and clean energy sources, proper engine maintenance, using absorbent materials for spill containment, and installing oil containment booms. Vessel owners can also minimize waste production and manage it effectively. Even small changes can significantly contribute to environmental preservation.

The course on LMS MOODLE includes following activities: Assignments, Forum, Glossary, HotPot module, Lesson, Quiz, Resources, SCORM package, Wiki [6]. The beginning of the module includes list of competencies cadet will gain by the end of the module (Fig. 1).

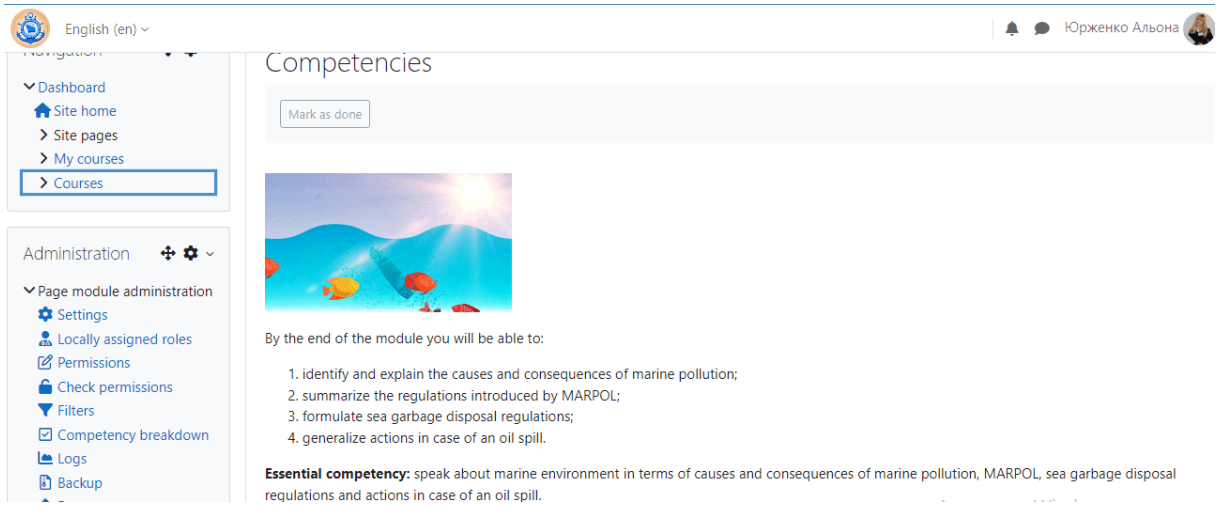

Fig. 1. List of competencies – Page activity on LMS MOODLE “Maritime English” course

Assignments are used during module to collect presentations, project works, individual tasks etc. the example of Assignment activity is given in the Figure 2.

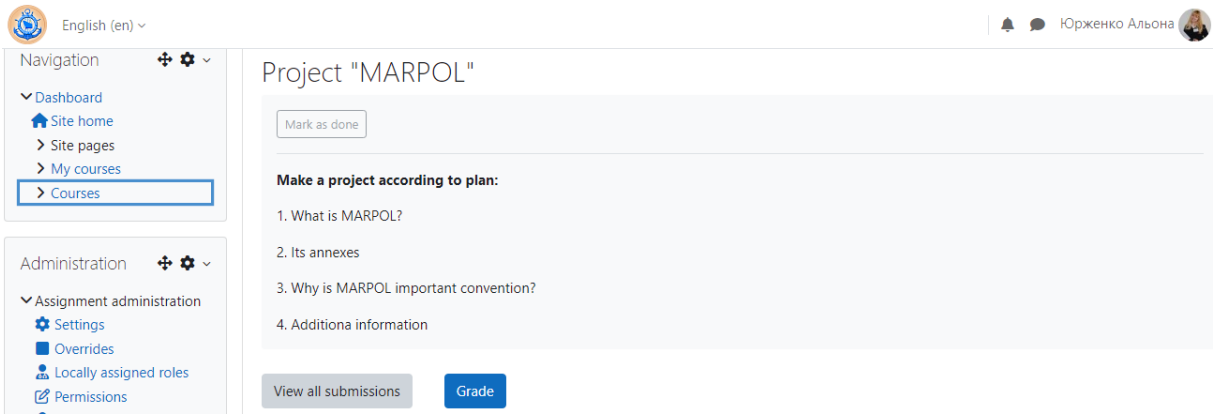

Fig. 2. Project work – Assignment activity on LMS MOODLE “Maritime English” course

SCORM packages allow to place games in MOODLE course from external sources (e.g. crossword made with the help of template on learningapps.org and devoted to Caspian sea environmental problems).

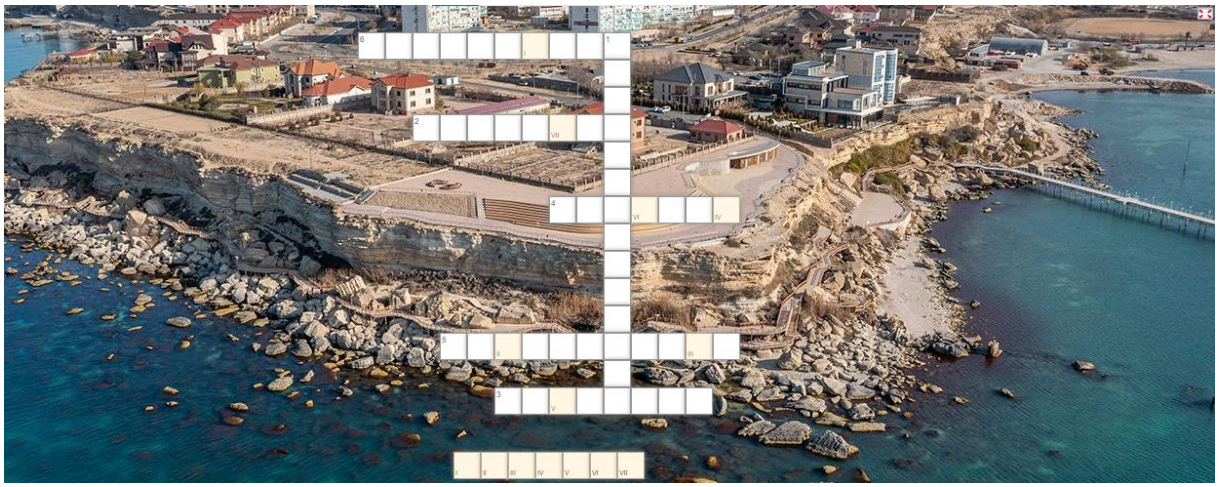

Fig. 3 Crossword – SCORM package activity on LMS MOODLE “Maritime English” course

In conclusion, the ecological competence of future seafarers involves the integrated development of knowledge, skills, and attitudes related to nature conservation. This research highlights the importance of integrating ecological aspects into the educational process to prepare environmentally-conscious and responsible maritime specialists. The "Marine Environment” module on LMS MOODLE has proven effective in achieving this goal by fostering the development of knowledge, skills, and positive attitudes towards marine environment conservation.

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ГРУНТОВОЙ ФОН И ПРЕДЕЛЫ ИЗМЕРЕНИЯ ФИЗИКО-МЕХАНИЧЕСКИХ ХАРАКТЕРИСТИК ГРУНТОВ ВОСТОЧНОГО ПОБЕРЕЖЬЯ КАСПИЯ

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Аннотация: в статье были установлены наиболее распространенные грунты по уровням залегания прилегающим зонам Мангистауской и Атырауской областей, необходимые для определения и прогнозирования условий работы ковшовых рабочих органов землеройных машин, разрабатывающих грунт на разных условиях залегания в соответствии с технологией выполнения земельных работ Тюб-Караганского залива Каспийского моря.

Ключевые слова: ковшовых рабочих органов землеройных машин, Тюб-Караганский залив, гистограммы вероятности появления грунтов различного типа.

Территория Казахстана подразделяется на пять внутриреспубликанских экономических районов: Западно-Казахстанский, Северо–Казахстанский, Южно–Казахстанский, центрально–Казахстанский и Восточно-Казахстанский районы [1].

Западно-Казахстанский экономический район включает Мангистаускую, Атыраускую, Актюбинскую, Уральскую области: занимает территорию 728,5 тыс.кв.км. Этот район делится на 43 административных района, имеет 14 городов и 35 поселков городского типа.

Западно-Казахстанский экономический район расположен на стыке Европейской и Азиатской частей СНГ и охватывает значительную часть Прикаспийской низменности, остроги Общего Устюрта и Уральских гор, полностью занимает Мугаджарские горы и полуостров Мангышлак, западную часть Устюрта. Рельеф региона, в основном, равнинный, за исключением Северо-восточной части. Климат района засушливый, резко континентальный. Снежный покров незначительный, особенно на юге, промерзание грунтов 0,8-1,2 м. Северная часть Западного Казахстана расположена в степной зоне, остальная - в зоне полупустынь и пустынь.

Мангистауской область занимает территорию площадью 165,6 тыс. км^2, что составляет 6,1% от общей площади территории Казахстана. В области расположены 3 города (Форт-Шевченко, Актау, Жана-Узень), 4 сельских района (Бейнеу, Тюб-Караган, Мангистау, Ералы), а также 8 поселков и 26 аульных и сельских округов. Плотность населения