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AN E-COURSE BASED ON THE LMS MOODLE TO TEACH "MARITIME ENGLISH FOR PROFESSIONAL PURPOSE"

Abstract. "Maritime English for professional purpose" e-course based on the LMS MOODLE was created in accordance with the requirements of modern society for the formation of communicative English competence of future maritime industry workers. Our research is devoted to the description and analysis of the work of the future maritime specialists in the e-course. One of the main elements of the course is the Forum (the exchange of questions, answers, messages etc., leaving the message, or creating questions). It is the forum that provides a two-way communication between a teacher and the cadets. The course also contains some elements of gamification (badges, games, Easter eggs, leaderboard, points etc.). Educational content is provided using a system of elements, which greatly enhance the motivation of students to study. QR code quest (a maritime subject chain of activities using two-dimensional code) helps students to find the necessary information, analyze it, organize it, solve tasks etc. Prezi's presentations have additional depth and context, increase students' motivation to learn. The Quizzes of our course correspond to six levels of Bloom's taxonomy (knowledge, understanding, application, analysis, synthesis and evaluation). The Gradebook has a clear structure: two types of tests, language competencies and additional points in a limited number. In our study, we have produced statistics on the leaders and outsiders of e-course, a comparative description of the groups studying in the course. As a result of our research it was proved that LMS MOODLE e-courses have a potential educational opportunity as an effective means for forming the foreign professional competence of future seafarers. Interactive exercises bring cadets closer to the real-life communication in the absence of a natural linguistic environment and can be used as part of the system of formation of foreign professional competence of future maritime specialists. It was also proved that the system of blended learning helps to master the English language faster and more easily.

Keywords: blended learning; e-learning; e-course; LMS Moodle; maritime English; language skills; teaching materials.

1. INTRODUCTION

Problem statement. Nowadays training of maritime specialists has undergone significant changes introduced by the new international law, a dynamic transport environment, the growing influence of the modern technologies and new challenges of the seafarers' labor market. The development of information and communication technology requires a new level of training of a competent specialist. Today, the problem of losing interest in learning is one of the most important issues of modern pedagogy. The lower interest in learning is, the worse is its effectiveness.

Analysis of recent research and publications. The research of the problem of teaching a competent specialist was carried out by scientists from many countries. The most systematic materials of research are reflected in the works of the following Ukrainian scientists: O. Chasnikova, I. Rodigina, S. Trubachova, O. Ovcharuk, V. Serikov, A. Khutorsky, V. Sharko, I. Yakimanska and others [1]. Among foreign scientists who studied the possibilities of introducing a competence-based approach to the teaching of students and cadets, the following scholars can be considered: J. Raven, C. Brandt, T. Hilbert, and others. The training of a highly qualified specialist is an important priority of the modern system of

professional education, which is highlighted in many studies: the essence and requirements of the general scientific methodology for professional training is studied in the researches of V. Bepalko [1], B. Gershunsky [2] and others, the methodological foundations of professional education were the subject of scientific research of V. Andryushchenko [3], Boardman and Woodruff [4]; the professional training of specialists in higher education is reflected in the scientific works of M. Lovett, L. Lacerenza, M. de Palma, N. Benson, K. Steinbach, J. Frijters [5]; Professional training of specialists in the marine profile was explored by S. Voloshynov [6], I. Sokol, E. Pyatakov [7], M. Sherman, O. Bezbakh [8] and others; professional training of ship engineers by means of the English language was studied by U. Lyashenko [9], O. Denderenko [10], N. Ogorodnik. Recently new technologies and approaches in the maritime education and training have been introduced by O. Erdogan, E. Demirel [16] (Turkish experiment), Y. A. Alia [17] (impact of new technologies on the development of maritime English courses), J. Xie [18] (new technologies in the development of the maritime English test and evaluation system in China), M. Sugimoto, F. Yoshidome (a blended learning approach to improve the maritime English training at Oshima national college of maritime technology), N. Takagi, Y. Uchida (computer-based maritime English vocabulary developing program), Zhongliang Cui (modern educational technology in maritime English teaching from the perspective of constructivism), C. Cope, P. Ward (integrating learning technology into classroom), Su Dingfang, Z. Zhixiang (modern foreign language teaching – theory practice and method in Shanghai), Xiu Yuezhen (research on English teaching reform in multimedia and Internet environment), Zhang, Jianping (modern educational technology: theory and application), Zhong, Zhixian (informationized teaching mode: theory and practice), Zhu, Zhiting (modern educational technology: road to informatization) and others [14]. But educational process organization has its own peculiarities in the maritime educational establishments.

The purpose of the article is to analyze innovative tools of the e-course “Maritime English for special purpose” based on LMS MOODLE which enable to develop the communicative competence of future ship engineers.

2. FINDINGS

The system of distance learning based on the LMS MOODLE is an integral part of the educational process at the Maritime College of Kherson State Maritime Academy (MC KSMA). Studying English is an essential part of the training of future marine specialists. E-course "Maritime English for professional purpose" was created for developing communicative competence of students as a means of professional communication on board a ship. The study of this subject is based on the principles of interrelated types of speech activity, the theory of phased contextual learning.

The purpose of our course involves solving specific tasks:

- to form a general idea of the specificity of communication on the ship, which will provide the necessary communicative capacity in the spheres of professional communication in oral and written forms;
- to develop creative thinking when performing practical tasks in special educational situations, which require the professional competence of specialists of the maritime merchant fleet;
- to form the basic skills of communication in professionally oriented situations, to develop the ability to perceive the language of hearing and to respond accordingly, to develop skills of reading professional texts, to develop skills of using original technical literature, to develop writing skills, to apply the acquired knowledge during

an interview in crewing companies and in preparation of tests of professional direction.

The subject "English for professional purpose" belongs to the cycle of professional and practical training and at this stage the training of maritime specialists is generalizing and systematizing, therefore, in accordance with the provisions of the international conventions, the primary importance is given to the generalization of the English studied, as well as activation of knowledge on professional subjects.

The syllabus "English for professional purpose" is compiled in accordance with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) (Section II, Table A-II / I) and IMO Model Course 3.17 "Maritime English". This course uses the standard phrases of IMO for communication at sea and the use of English in written and oral forms, as stipulated by STCW (Section II, Table A II / I) [[11]].

"Maritime English for professional purpose" is studied by second year cadets in the first semester using "Welcome aboard" Student's book, which was developed by the teachers of the English language of the KSMA. The Maritime English course includes 5 modules aimed at obtaining professional communicative competencies according to STCW.

Example: Module 1. Maritime education.

Essential competence: to explain the importance of maritime education and its components for successful seafaring career.

Module 1 Maritime Education



By the end of the module you will be able to:

explain the importance of maritime education and its components for successful seafaring career.

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-  KSMA rooms and spaces
-  Prepositions: in, on, at.
-  Hangman
-  Horse race
-  The Millionaire Game
-  Check your competency 1
-  Stop & check 1 Welcome aboard

Fig. 1. Module 1: Maritime education

One of the main tools of our interactive course is Forum. This activity allows cadets and teachers to exchange ideas, leave messages, or create their own questions. For the correct answer or an interesting question, cadets receive points. Participants can post a picture, video, or resource link and connect it with their post. The advantages of the forum can also include

the following: the development of critical thinking, individual or group work, the ability for each participant to express their opinions anywhere and at a convenient time for it etc.

The next element of our course, which helps to increase the interest of students in the training is called Gamification (the presence of educational content using elements similar to games). Exercises that are presented in the form of games include the following: A puzzle (for example, split words / sentences / drawings etc. according to the classification), Find a pair (compare words and definitions / drawings / synonyms / antonyms etc.), Chronological ruler (put in the correct order words / sentences / actions etc.) Who wants to become a millionaire (give answers to questions), Crossword, Hangman (write a word or word combination), Word Search (find the words), Horse Racing (different activities) etc. Almost all games support audio and video content, and some of them (for example, "Where is it located ? ") are connected with Google maps (e.g. "Mark Up the Largest Oil Spills" activity after completing which the students should be able to tell about the marine environment with the causes and consequences of marine pollution).

Audio on our course is presented in mp3 format. Activities with it are different: listen and repeat, listen and complete the text/answer the questions, according to the dialogues write an essay etc. Audio materials help to practice and improve listening skills.

Videos from YouTube are presented in the form of links. Some of them are recorded on board of ships and in ports, which helps learners to master their English. They improve pronunciation, listening skills, help to understand Standard Maritime Communication Phrases etc.

Another tool that is related to gamification and helps to motivate cadets is an electronic system of badges (honors), developed in accordance with the maritime topics taught in the course. A badge is a digital certificate or diploma that appears on a user's page and identifies and shows the skills, knowledge etc. of the participant.

Leaderboards are one of the most competitive gamification elements, as they encourage students to surpass their peers in order to achieve "first place". Students are able to see their points and points of other course participants on the main course page. After writing a test a list of points appears on the course page. The date of the test can be seen in the calendar.

One of the gamification elements is called Easter eggs, which was borrowed from computer games. The purpose of it is to create a chain of unrelated tasks and to hide in each task some kind of hint. Finding all the hidden hints, the cadet can go to the main activity, which uses the entire collection of tips from previous tasks. As an example, there is a task that is called "Secret task", whose purpose is to inform the course participants that this module has several games, after which the cadets will find unusual letters, using which they will create a word, and with this word-password will open a secret test, passing which they can receive a secret badge.

QR code quest in our e-course is one more gamification activity to master English. In the process of doing a chain of tasks, where two-dimensional code is used, the cadets revise vocabulary, grammar, improve reading skills, develop critical thinking etc.

Every module of the course has storytelling elements. That is an element of gamification design process. The entire course has one maritime theme throughout its five modules. The plot starts from coming to college and finishes at the topic "Am I ready for my maritime career?" There are many dialogues during the course which are presented in audio or video format. The characters present in the dialogue are different: Master, Chief engineer, cadets, officers, ratings etc. The stories of the course are real life situations (e.g. extracts from Captain M. Lloyd's Book "In command") or fictitious. We find storytelling comfortable and effective in our maritime context. It provides personalized learning. It also helps to develop the following skills: speaking, communication skills, information literacy, visual literacy, media literacy, written/oral skills, presentation skills, listening skills etc.

Glossary is an activity which allows participants to create and edit a list of definitions, such as a dictionary. Each course module has its own glossary, where unknown terms are added by cadets. To enhance the knowledge and study Maritime English, cadets add definitions, synonyms, antonyms, drawings, videos, examples in context etc., which allows the user to easily navigate in the linguistic process, successfully master the maritime vocabulary etc.

The course has maritime theme presentations in an unusual format that is different from static view of two-dimensional slides. Prezi website, which provides templates for presentations, gives the ability to reflect the connection between a large picture and small details. We have developed presentations on the following topics: General and Bulk Cargo, Ship Structure, Cargo Types, SuperTanker, Security Signs, Tools etc. Additional depth and context make presentations more motivating and memorable.

Virtual ship tour is a 360° panoramic tour. A virtual tour on our course is a visualization tool that allows to organize a virtual journey around the ship. Being an element of the module "Types of ships and ship's construction", this is the task where students need to investigate the vessel and to schematically depict its superstructure, included in the topic "Superstructure of the ship". This activity allows learners to get closer to the real working conditions of future seamen.

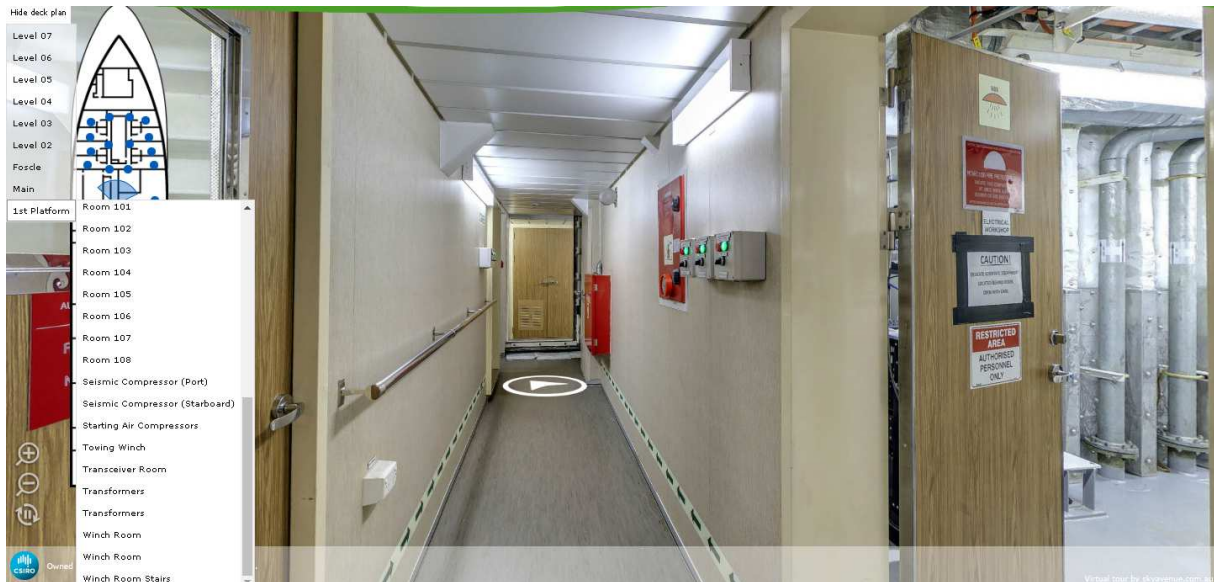


Fig. 2 Virtual ship tour activity: first platform

The Task is an activity that allows the teacher to assign tasks (for example, in the topic “Types of Life saving appliances (LSA)” students in groups of three need to make a Power Point Presentation, describing one LSA and giving its examples), collect and then evaluate them.

Adaptive tests are a form of computer-based tests that adapts to the examinee's ability level. When testing students, there is a complexity regulation – the issues of these tests become easier or more difficult, depending on how well the student knows the subject of the test. If they answer correctly, questions become more difficult. If wrong, then the student returns to the beginning of the topic. Such tests can take place unlimited times, but correct answers are not displayed. Such tests improve motivation, produce scores with greater precision than conventional tests.

Next innovative component of our e-course is Quiz and different types of questions in it. According to Bloom's taxonomy [13] – [14] (taxonomy of pedagogical goals in the cognitive field), the types of quiz questions are divided into six levels, namely:

- The first level – Knowledge (checks knowledge of certain data - terminology, concrete facts).
- The example is “Matching” question where the answer to each of a number of sub-questions must be selected from a list of possibilities.
- The second level – Understanding (helps to explain ideas and concepts).
- The example (“Drag and drop onto image” question) is to name the signs and match them with their definitions.
- The third level – Application (applying new rules, laws and methods in new situations). The example (“Essay” question) is to write full answer according to the rule.
- The fourth level – Analysis (allows to break the information into related parts and establish a connection between them).
- The example (“Short answer” question) is to read the text, analyze it and to find something.
- The Fifth level – Synthesis (means the ability to merge information, combine elements to get a new entity that explains any phenomenon).
- The example (“Essay” question) is to write an essay.
- The Sixth level – Evaluation (student evaluates the logic of constructing a material in the form of a written text, evaluates the conformity of conclusions etc.)
- The example (“Essay” question) is to write an essay.

In the Gradebook, the total score for the course is maximum 100 points. The categories included in the Final Evaluation for the semester include: test tasks and language competencies (Stop and Check - a test consisting of 30 questions of one topic; Speaking Competency - language competence, which teacher tests in the audience and writes the mark in the electronic journal personally; Progress test - a test that includes several topics; Extra - additional points that can be obtained for extracurricular tasks: QR code quest, Easter eggs, Forums activities etc). Structural elements required by e-course are: Stop and Checks 1-5 (5 points); Speaking Competencies 1-5 (10 points); Progress test 1-2 (10 points); Extra – (5 points).

We decided to analyze the average results of second year cadets of Maritime college ship engineering department in the Tests performance in Maritime English e-course: Stop and Check 1 - 3.45 (Interval 0.00-5.00); Stop and Check 2 - 3.49 (Interval 0.00-5.00); Stop and Check 3 - 2.86 (Interval 0.00-5.00); Progress test 1 - 6.33 (Interval 0.00-10.00); Stop and Check 4 - 3.12 (Interval 0.00-5.00); Stop and Check 5 - 3.99 (Interval 0.00-5.00); Progress test 2 - 7.1 (Interval 0.00-10.00), the overall average test score was 3.46. The competencies and outcomes which describe the learning gained by students in the course are as follows: 1 - explain the importance of maritime education and its components for successful seafaring career; 2 - characterize a cargo type focusing on the possibilities and requirements to its transportation according to SOLAS convention; 3 - classify and describe ships by types; 4 - describe key responsibilities of crewmembers focusing on the ship maintenance and watchkeeping procedures according to STCW convention; 5 - list and explain the basics of safe working practices aboard ships.

The leaders of the e-course are the cadets who actively participated in solving all tasks in the course, showed the highest results in quizzes etc.: the average score of the leaders of the course is 93.6 (Interval 0.00 - 100.00). All leader cadets of the course belong to K211 and K212 groups of the MC KSMA ship engineering department (in the beginning of the year the division into groups was carried out using the level of English knowledge).

The course outsiders are cadets who did not take active part in the course during the semester, did not do home tasks and additional tasks, passed tests for low or unsatisfactory grades, rarely visited classroom lessons, as well as the electronic course etc. The average rate of outsiders is 16.41. All cadets-outsiders belong to groups K213 and K214 of the ship engineering department of MC KSMA.

3. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

After a detailed analysis of statistics data, we drew the following conclusions:

- The combination of a real educational environment with a virtual educational space based on electronic educational courses helps not only to revive the "dry" presentation of the material during college practice, but also to be productive and effective;
- Multivariate use of the didactic capabilities of information technologies for teaching English in higher marine establishments is a necessity and time requirement;
- Using the e-course makes English training more effective, enhances the possibilities for obtaining knowledge, stimulates self-education, increases the efficiency of education;
- The tools of the course that contribute most to increasing the motivation for learning include: Forum, elements of the gamification (Game-based Exercises, Easter eggs, Leaderboards, Points, QR Code Quest), Glossary, Presentations, Test Tasks (Quizes), Gradebook;
- A clear division of the types of questions in test tasks according to the levels of Bloom's taxonomy helps to control the students' work and systematize its results.

We see the prospects of further research in the study of the peculiarities of the growth of qualitative indicators of the level of English in conditions of blended learning in MC KSMA on LMS MOODLE.

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ЕЛЕКТРОННИЙ КУРС НА БАЗІ LMS MOODLE ДЛЯ ВИКЛАДАННЯ "МОРСЬКОЇ АНГЛІЙСЬКОЇ МОВИ ЗА ПРОФЕСІЙНИМ СПРЯМУВАННЯМ"

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Анотація. Електронний курс «Морська англійська мова за професійним спрямуванням» на базі платформи MOODLE було створено відповідно до вимог сучасного суспільства для формування комунікативної англомовної компетентності у майбутніх працівників морської галузі. Наше дослідження присвячено опису та аналізу роботи впровадженого в навчання майбутніх фахівців морського профілю електронного курсу. Одним з основних елементів курсу ми вважаємо Форум (обмін питаннями, відповідями, повідомленнями тощо, коли залишаються повідомлення або створюються власні питання). Саме Форум забезпечує двосторонній зв'язок викладача з курсантами, курсантів між собою. У курсі наявні деякі елементи гейміфікації (відзнаки, ігри, приховані елементи, таблиця лідерів тощо). Навчальний контент подається з використанням гейміфікованих елементів, що значно підвищує мотивацію курсантів до навчання. QR code квест (ланцюг завдань морської тематики з використанням двомірного коду) допомагає курсантам знаходити необхідну інформацію, аналізувати її, систематизувати, розв'язувати поставлені завдання, розвивати пізнавальну діяльність. Презентації на сайті Prezi мають додаткову глибину та контекст, мотивують курсантів. Тести нашого курсу відповідають шести рівням Таксономії Блума (знання, розуміння, застосування, аналіз, синтез і оцінка). Електронний журнал оцінок має чітку структуру: два види тестів, мовні компетенції та додаткові бали в лімітованій кількості. У нашому дослідженні ми підготували статистичні данні про лідерів та аутсайдерів курсу, порівняльну характеристику груп, що навчаються на курсі. У результаті нашого дослідження було доведено, що електронні курси LMS MOODLE мають потенційну освітню можливість як ефективний засіб для формування іноземної професійної компетентності майбутніх мореплавців. Інтерактивні вправи наближають курсантів до живого спілкування за відсутності природного мовного оточення і можуть бути використані як частина системи формування іноземної професійної компетентності майбутніх морських спеціалістів. Було доведено, що система змішаного навчання позитивно впливає на оволодіння англійською мовою.

Ключові слова: змішане навчання; електронне навчання; електронний курс; LMS Moodle; морська англійська мова; навички усного мовлення; навчальні матеріали.

ЭЛЕКТРОННЫЙ КУРС НА БАЗЕ LMS MOODLE "МОРСКОЙ АНГЛИЙСКИЙ ЯЗЫК ПРОФЕССИОНАЛЬНОЙ НАПРАВЛЕННОСТИ"

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Аннотация. Электронный курс «Морской английский язык профессиональной направленности» на базе платформы MOODLE был создан в соответствии с требованиями современного общества для формирования коммуникативной англоязычной компетентности у будущих работников морской отрасли. Наше исследование посвящено описанию и анализу работы внедренного в обучение будущих специалистов морского профиля электронного курса. Одним из основных элементов курса мы считаем Форум (обмен вопросами, ответами, сообщениями и т.д., оставляя сообщения или создавая собственные вопросы). Именно Форум обеспечивает двустороннюю связь преподавателя с курсантами, курсантов между собой. Курс также содержит некоторые элементы геймификации (значки, игры, скрытые элементы, таблицы лидеров и т.д.). Учебный контент подается, с использованием элементов геймификации, что значительно повышает мотивацию курсантов к обучению. QR code квест (цепь задач морской тематики с использованием двухмерного кода) помогает курсантам находить необходимую информацию, анализировать ее, систематизировать, решать поставленные задачи, развивать познавательную деятельность. Презентации на сайте Prezi повышают интерес студентов к получению знаний. Тесты нашего курса соответствуют шести уровням Таксономии Блума (знание, понимание, применение, анализ, синтез и оценка). Электронный журнал оценок имеет четкую структуру: два вида тестов, языковые компетентности и дополнительные баллы за разные виды деятельности. В нашем исследовании мы подготовили статистические данные о лидерах и аутсайдерах курса, сравнительную характеристику групп, обучающихся на курсе. В результате нашего исследования было доказано, что электронные курсы LMS MOODLE имеют потенциальную образовательную возможность как эффективное средство для формирования англоязычной профессиональной компетентности будущих мореплавателей. Интерактивные упражнения сближают курсантов с реальным живым общением при отсутствии естественной языковой среды и могут быть использованы как часть системы формирования иностранной профессиональной компетентности будущих морских специалистов. Было доказано, что система смешанного обучения оказывает позитивное влияние на овладение английским языком.

Ключевые слова: смешанное обучение; электронное обучение; электронный курс; LMS Moodle; морской английский язык; навыки устной речи; учебные материалы.

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