COMPUTER-AIDED TOOLS TO ASSESS STUDENTS’ PROFESSIONAL LANGUAGE SKILLS

DOI: 10.14308/ite000605

Traditional teaching aids to develop students’ language skills are a coursebook, a tape recorder, an audio CD or a video. With a development of new technologies and opportunities they provide, teachers and students should not limit their cooperation to classroom activities only. To develop critical thinking, train learning strategies, and increase students’ autonomy in their attempts to practise English outside the classroom computer-aided language learning is an available instrument, that can provide an additional learning environment for both students and teachers, enhance language learning through involving additional resources. Computer-based language courses supply learners with plenty of language learning and professionally oriented materials and allow student to work at their own pace. Computer-aided tools can be used to reinforce the students’ language skills through additional practice or as a remedial tool to complete gaps in students’ knowledge.

The author of the article describes her own experience of utilizing computer-based aids to test the knowledge of seamanship and language skills of the future deck officers.

Keywords: computer-aided program, distance-learning course, educational platform Moodle, testing language skills, professional communication skills, tasks’ types.

Introduction. Operating in global industry, seafarers should continuously develop their professional knowledge, communication skills and ability to collaborate within cross-cultural environment in English, as their working language. Therefore, the task of English teachers is not only to teach students necessary linguistics knowledge (phonetic patterns, sea jargon and typical grammar units), language skills (reading and listening comprehensions, speaking and writing skills), but also training students’ ability to continue the process of life-long learning and improving their communicative competence during postgraduate practice aboard ships, in ports administrations, or in shipping companies.

Statement of the object of article. Students are more efficient learners when they are provided with effective learning tools and instructed on how to use them. Among these tools there are different information technologies, which can be widely used by learners (future seafarers) to enhance their professional and language knowledge and reach professionally oriented communicative goals. This article introduces an experience the teachers of Kherson state maritime academy have in applying Internet resources for Maritime English teaching, and discusses the way these courses can serve to increase proficiency level and effectiveness of classroom learning process. The author shares an experience of utilizing a computer-based language learning aids to create an effective assessment tool to evaluate students’ professional communicative competence.

The state of affairs in the field. One of the most effective way to motivate learning process, develop students autonomy, and provide new opportunities for language improvement is applying new technologies into a process of vocational education. Integrating computer software training programs, web-based resources, Internet social media sites (Twitter, Faceook), and maritime-related professional sites (GCaptain, Marine Insight, SEATALK) makes a strong emphasis on student-centred materials, expends professional vocabulary, improves listening and reading skills, provides place for discussion, sharing the ideas, integrating knowledge from other professional
subjects and self-studying. A significant contribution to solving a problem of computerization and language training for professional communication was made by V.Ayitov, P.Asoyants, O.Bihych, M.Bovtenko, T.Grygorieva, T.Karamysheva, O.Kosovan, P.Piotrowski, E.Polat, P.Serdyukova, N.Talyzina, D.Barr, R.Blake, D.Chun, T.Ellis, A.Kledecka-Nadera, R.Mayer, R.Moreno, D.Murray, who focused on the psychological, pedagogical, ergonomic, didactic and lingua-methodological issues. The authors emphasize a positive influence of computer-aided language learning to be embedded into a studying process on increasing students’ motivation to foreign language acquisition, and development of independent-learner strategies.

The basic material of the article. To meet the requirements of rapidly changing world and provide a high level of education the English teachers of Kherson state maritime academy (KSMA) are involved in a process of developing new training programs to achieve higher standards of professional competency in terms of developing English language communication skills, to meet the requirements of the STCW Convention, 1978, as amended. To provide their students with up-to-date information, train students’ communication skills and assess student’ knowledge they create new coursebooks based on Communicative and Competency-based Approaches to foreign language teaching. This year the teaching staff of KSMA has been involving in a process of creating a helpful and effective distance-learning website. The site of such type is on a high demand as it could provide a wide range of learners with an opportunity to learn new knowledge, train and assess language skills’ levels as well. The site is aimed to provide education and training for students while they are at their sea-going practice. After the apprenticeship such students are obliged to study the language course themselves and prepare to the exams and, what is more challenging, they are very restricted in time by the academic year terms.

The KSMA distance-learning course is constructed on the base of educational platform Moodle (Modular Object-Oriented Dynamic Learning Environment) and now is in a shape of e-library (depository) that supplies the students with some mandatory and additional literature on both vocational training and academic subjects. It also contains materials to test: a list of questions for self-correction, examples of tests on different topics, and an online test to assess their learning achievements. In addition students can attend a forum to organize discussion or to have a link with teachers and other students.

Let’s look at the content of Maritime English Rubric (English for Specific Purpose). The website includes language learning system, language testing system, learning repositories, and is designed to meet the needs of Maritime English Language teaching and learning, contains relevant job related materials. It is intended for the students of different courses – from junior to senior ones, to provide them with additional practice to develop communication skills, which are critical for their routine work on deck and Navigation Bridge.

The teaching materials reflect common aspects of a seafarer’s life, and are based on marine terminology and SMCP (Standard Marine Communication Phrases). The first information the visitor gets is a course description: purpose and structure of the course, course outlines, and summary of references on English language competence requirements from the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended. Scrolling down the visitor can see a list of recommended reading, notes on assessment scales (General English assessment – CEFR, and Maritime English assessment - IMETS) and some tasks on different professional topics to train a variety of language skills (pronunciation, use of vocabulary, use of grammar, listening and reading comprehensions, speaking and writing) to provide student with opportunity to practice them. Some of the tasks are accompanied with answers for self-correction; and a final online test that is checked automatically and results are delivered to the student and teacher both.

Let’s navigate the website.

1. Visit the website of KSMA (Kherson State Maritime Academy), in a rubric Educational structure choose Distance Learning Site (see Picture 1).
2. Choose the navigational faculty and a subject (English for deck officer). Click on the course you need (see Picture 2).

3. Create your personal account and log in.

4. Choose the test type you need, for example, an achievement test (see Picture 3).
Let’s scrutinize the way this test is organized in details. To start the process of developing any test the teacher needs to analyze the approaches existed to make tests more productive. You should always keep in mind what you want to test and try to make the tests as transparent, reliable, valid, authentic, and practical as you can.

The test is considered transparent when students have all necessary information about the test: what skills are measured, what types of tasks are used, how much time they have to complete it, and what the grading criteria are. Reliability of the test refers to the consistency of test scores. A reliable test would give similar results if it were given at another time. To make the test reliable the tasks used should be familiar for the students. If a different teacher were asked to mark the test, the results would be the same. A valid test "measures what it claims, or purports to be measuring" [1, c. 231]. A test that follows this principle accurately reflects the syllabus on which it is based, uses content that is relevant and appropriate for student, and tasks types match with what students have practiced in a classroom. The test is considered authentic when it reflects on real life situations or contexts, and mirrors the types of professional interactions the students would be involved aboard ship and communicate the target language. The test is practical if the teacher has all necessary resources to develop it. They can be: human resources (test-writers), material resources (equipment), and time (for designing, scoring, analyzing and giving feedback). Last but not least feature of a good test - a following backwash - the effects of testing on teaching and learning [4, c. 279]. It can be both positive and negative. It depends on a quality of a test and testing procedure.

Tests must be part of learning experiences for all involved.

Tests of English language competence should aim to assess the students’ communicative competence. A good test assesses the ability to integrate knowledge areas of English language with the various language communication skills in order to carry out a range of specific tasks. Assessment should not test the trainee’s knowledge of separate language areas alone [2, c. 109].

Testing organized on the base of Moodle is profitable for both teaching and learning processes as it provides the teacher with an opportunity to measure students’ achievements and a quality of the test as well.

An achievement test is conducted at the end of a semester, when students have already completed all five units. It evaluates the student’s language skills, and professional knowledge that has been covered in the syllabus, as well as determines weak points for further correction and reinforcement.

To prepare the test it was selected and uploaded 200 questions of different value (40 questions to each unit), organized them into different testing tasks to check students’ knowledge of vocabulary, grammar, listening, reading and writing skills as well.

To test students’ ability to comprehend and use vocabulary and grammar patterns the students should complete the tasks they have already been familiarized with: Multiple choice questions, Matching, Gap-filling, and Editing (see Chart № 1).

Chart № 1

<table>
<thead>
<tr>
<th>1. Make up word combinations</th>
<th>Choose from:</th>
</tr>
</thead>
<tbody>
<tr>
<td>find list personal positive get</td>
<td>a promotion brand of crewing agencies impression job bank curriculum</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Match the opposites</th>
<th>Choose from:</th>
</tr>
</thead>
<tbody>
<tr>
<td>generous optimistic hard-working careful considerate</td>
<td>mean reckless pessimistic thoughtless</td>
</tr>
</tbody>
</table>
There is a wide range of tasks which can be used to check students’ reading and listening skills, such as: Multiple choice questions, True/False questions, Short answer questions, Gap filling, Matching, Ordering, Sentence completion, and Cloze test (see Chart № 2).

**The Tasks to Check Reading and Listening Skills**

| 1. Put the words in the correct order | 1. / assistance / what / is / kind / of / required / ?  
2. / dangerous / MV ... / port / has / list / to . |
| 2. Fill the gaps with the missing words | Due to the ________ of wind and sea the vessel can make three different ________ motions and three ________ motions. |
| 3. Read the text and mark the statement as True/False | 1. The bulk carriers can be divided according to their size.  
2. Gearless carriers can discharge cargo at any port.  
3. There's a single definition of a bulk carrier. |
| 4. Complete the sentence: | 1. Call the Master if restricted visibility is …  
2. Call the Master if difficulties are experienced in …  
3. Call the Master if the ship meets any hazard to navigation, such as … |
| 5. Number the events | a) A screwdriver helped the author to deal with the rudder failure. |
The reliability of any test directly depends on the type of the task used to check the intended skills, and the way the task is structured. Teachers should take into consideration the advantages and disadvantages (pros and cons) of different task types to organize tests properly. Thus, multiple choice questions can be used to test grammar, vocabulary, reading and listening, but they are difficult and time consuming to construct; and wrong options (distracters) can distract even successful learners. True / False questions used for testing reading and listening comprehension, vice versa, are easy to construct, but they contain a high guessing element (50 per cent). Thus, Short answer questions, Sentence completion, and Cloze test make marking difficult and subjective as they involve students’ writing, not just marking options a, b, or c. The teacher should keep in mind before use them in a computer-based test that in some cases there may be several possible correct answers. Matching is suitable to test vocabulary and grammar, but more options need to be provided to avoid doing the last item “by default”. Ordering paragraphs or ideas is good enough to check listening and reading comprehensions, but it is impractical, as long as one answer is wrong, others are wrong too. It makes this task very difficult to mark. To sum up we should say all the task types mentioned can show reliable results when are used appropriately. To minimize their drawbacks it should be done more than one task to assess one skill or language knowledge to get a real picture of student progress.

To make proper tests teacher should follow some guidelines:
- instructions should be clear, precise and simple. They should not be more complex than the test itself;
- in multiple-choice items, make sure that there are no ‘obviously wrong’ options. All options need to be ‘possible’, but only one is correct;
- in matching items, there should always be more answers than questions, to prevent students from being able to answer the last question by process of elimination;
- write questions that measure what learners know, not what they do not know [9, с.279].

Due to a format of online test the test-writers are restricted in their ability to use such traditional types of tasks as writing a report, an e-mail, notes, an essay, a summary or a letter, which are commonly used to test productive writing skills. Such types of tasks are not suitable for assessing by data processing machine. Student usually writes such tasks and uploads them on a site, and teacher gives the feedback in some notes and recommendations. In a case of using online test to assess writing skills it usually comes up to checking spelling accuracy. Therefore the teacher to organize a writing test commonly applies such tasks as Labeling, Editing, Letters Rearranging, Gap-filling, and Abbreviations Deciphering to check students’ ability to spell.

Before creating a good speaking test the teacher should choose which skills to focus on: fluency, accuracy or language function. The common tasks to assess productive speaking skills are: Mini presentation on a given topic (or Report), Role play, and Information gap, describing a picture, Discussion and Interview. The mentioned types of tasks are suitable to target such sub-skills (language functions) as:
- giving and asking for information
- expressing opinion, attitude, reason, need, gratitude and apology
- giving and asking for advice, directions, recommendations and instructions
- making and responding to requests and invitations
- describing objects, pictures, people and places
- narrating and sequencing events

<table>
<thead>
<tr>
<th>from 1 to 5 to show their sequence</th>
<th>b) It was necessary to replace a rudder before taking the boat to sea.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>c) The insurers insisted on full boat examination ashore.</td>
</tr>
<tr>
<td></td>
<td>d) The surveyor warned the author about the biggest commandment</td>
</tr>
<tr>
<td></td>
<td>e) The surveyor forbade going for sea with a broken rudder.</td>
</tr>
</tbody>
</table>
Computer-based speaking tests are a kind of supportive assessment, as speaking skills are usually monitored in a process of oral interaction between students in a group or a pair, or student–teacher conversation. Thus, such conversations can be recorded and uploaded to the site or a discussion can be organized in Skype.

In compliance with international requirements Maritime English learning and teaching should be competence-oriented process that applies content-based learning and follows the principles of Communicative Approach as the main methodology. To follow these guidelines the ultimate goal of a speaking test is to assess STCW-based language competency, frequently referred to "an effective communication" [8, c.6]. Communication skills practice incorporates the abilities to comprehend and generate speech as an integral unit, because of a natural conversation is always dual. Interlocutors are listening, speaking or planning their response simultaneously. To check communication skills the teacher can assess the success of students’ interaction in a classroom environment or observing records made by students in YouTube, or it can be done online using such program as Skype.

To make a speaking test the teacher should first decide on target skills to check, and as a result of it choose proper test tasks.

To assess aural receptive skills:
- **Multiple choice questions**;
- **Brief answers to general comprehension questions**;
- **Who said what?**;
- **True or False**;
- **Identify the sequence in which sentences are said**;
- **Choose words to complete the sentences**;
- **Matching phrases to form sentences**;
- **Correct jumbled sentences**.

To assess Oral Productive Skills (Recorded on Video)
- **Report (Presentation)**
- **Questions and answers**;
- **Dialogues and interviews with the researcher**;
- **Role-play based on a learned dialogue**;
- **Description of pictures** [5, c. 33-35].

To select from a range of activities offered the teacher should follow the main guideline: speaking tests are to simulate tasks that people most likely to perform in work-related situations or in daily activities that are typical for a professional environment.

The example of the speaking test uploaded as a sample includes four different task types.

Part 1 – Interview with a teacher (2-3 min) (see Chart № 3).

**Questions to Discuss**

- Could you tell me about the course you are doing?
- Do you enjoy some parts of the course more than others?
- Why do you want to be a marine officer?
- Which parts of the course are the most difficult?

Chart № 3
Part 2 – Presentation (4-5 min). Student gets a card with a topic to introduce. He has 1 min to think about what he is going to say (see Chart № 4).

**Topic Card**

Prepare to talk about your duties as a cadet. You should talk about:
- Who you work with
- What you are responsible for
- What safety rules you follow to avoid any accidents

Part 3 – Report (3-4 min). Student is shown some pictures which tell a story about maritime incident. The student looks at the pictures for 1 min and tells the story to the teacher. The student should gain as much information from the pictures as possible (see Chart № 5).

**Story Telling**

Part 4 – Discussion (2 min). Student answers some follow-up questions (see Chart № 6).

**Follow-up Questions to Discuss**

What types of accidents are most common at sea?
What can cause these accidents?
What safety rules should you follow to avoid such accidents?

In our case the test lasts approximately 15-20 minutes. This speaking test measures different aspects of communicative competence: student’s ability to
- respond appropriately, within the time given;
- structure and organize ideas and opinions;
- keep a flow of language fluently;
- use a range of grammar structures, e.g. correct tenses, word order, etc.;
- use a range of vocabulary;
- pronounce words accurately and keep phrase and sentence intonation;
- understand the follow-up questions [7].

As it was mentioned before to make a test transparent students should be informed about time limits to each task and a value it costs. An adequate time distribution is very important to provide a reliability of the test. A lack of time can influence on student’s performance, and vice versa, too much time for preparation can make a communication artificial. Some features such as length and complicity of the test will also affect its reliability. The teacher should find a balance to avoid test overloading with a long range of single-type shallow tasks [6, c. 238].
In our case the time limit for the whole test that measures students’ knowledge of professional vocabulary and grammar, reading comprehension and communication skills is 1 hour and 20 min. Student is allowed to take 2 attempts to do the task, and a total score is 100 points. For each correct answer the student has got 2 points, if he uses the second attempt to get a right answer – 1 point, and he gets no points in case of wrong answer.

The student has not an open access to the test before he commences testing. When test is complete the student stores it and presses Check button. Green and red colours are used to indicate correct and incorrect answers. He also can see his result in points, time he spent, and a grade he gets.

As it has mentioned the test based on educational platform Moodle provides the teacher with an opportunity to see the results of each student individually and the whole group as well. The teacher can compare the results within the group and with other groups; give a productive feedback on students’ language levels and identify the items needed further improvement. To learn lessons from the test is an essential part of any testing. The system supplies teacher with necessary statistics to make a decision on a quality of the test, its validity and reliability; to make further development possible.

In a rubric Instruments the teacher can choose the function Show the results and see group’s statistic data (see Picture 4).

Here you can see more detailed information:
- Time each student spent to do the test;
- Grade in letters (A, B, C, D, E or F);
- Total score the student got and each task points.

The teacher can see students’ rating list based on the test’s results and test-papers of individual students. In rubric Statistics teacher can get information on the test itself which can be used to improve it in compliance with the main principles of high quality test (validity and reliability). The factors which usually effect test badly are an inadequate number of tasks or scoring, poor instructions; lack of item analysis procedure, reliability studies, and validity analysis. Educational platform Moodle uses G.Rasch models to calculate discrimination index, item independence, deleting data and success due to guessing element. The instruments of Moodle

![Picture 4. The test statistic data](image-url)
system give a rigorous and precise feedback on quality of each task. It provides more accurate picture of the student’s ability and academic achievement.

**Conclusions.** The implementation of distance learning courses opens new horizons for teaching and learning, especially for adults. The creation of distance language programs is a complex and rather time-consuming process; it should be done gradually and consistently starting with the introduction of separate aspects of distance training (testing, for example) into the educational process of students. In our case the further development of the computer-aided language learning course based on educational platform Moodle we can see in designing programs which will enable uploading students’ videos and organizing group online discussions to provide additional training for the students outside the classroom environment.

The ultimate goal of distance learning course is to create a new educational environment that gives learners opportunity to improve their English language proficiency skills through:

- easy and free access to a wide range of professional literature (IMO and maritime references, IMO Conventions, textbooks, maritime publications, IMO Model Courses, IMO training videos);
- easy and free access to a wide range of educational literature (guidelines for self-study, guidelines for completing control test, lists of questions for self-control, samples of exam papers and Stop & Check tests, tasks to English Olympiad, questions for preparing to interview with different crewing agencies);
- ability to do group projects (Wiki, forum, chat, webinar);
- monitoring learning progress as there is an access to all tests students did for a period of an academic year;
- communication with teacher or other students on a forum, or in a chat;
- uploading files with the assignments student did (Power Point Presentation, Video and Audio records, projects, articles for student conference, essay, CV, etc.).

The ultimate goal of distance learning course for teacher is providing a wide range of new opportunities to improve English language teaching through:

- providing new instruments to create individual courses;
- replacement educational literature (guidelines for self-study, guidelines for completing control test, lists of questions for self-control, samples of exam papers and Stop & Check tests, tasks to English Olympiad, questions for preparing to interview with different crewing agencies, as well as videos, audio-records and Power Point Presentations);
- sharing news with student;
- modifying teaching materials;
- organizing group discussions or group projects;
- monitoring student’s progress and giving an individual feedback on student’s performance;
- supervising student’s research work;
- making new tests of different types;
- facilitating the process of tests’ assessment;
- improving tests quality (learning from the tests).

**Prospects of the future research work in this area.** It should be also noted that the value and potential of distance learning has been recognized worldwide. Lots of training software programs have been developed recently (produced by Videotel, Marlins, Seagull, MarineSoft, IDESS Interactive, MARTEL, etc.) to support distance learning for both seafarers and students of maritime institutes [3, c.326].

The greatest advantage in using IT and distance learning courses is intensifying teacher - student, student - student, and teacher - teacher contact. In addition, employing multi-media not only motivates students learning and encourage them to an active and natural interaction; it provides teachers’ flexibility within course content. Computer-aided language learning embodies modern educational approaches (Communicative Approach, Content-based Language Learning, and Competency-oriented Language Learning). Nowadays studying process is inherently more learning than teaching, and aimed to develop students’ autonomy. In addition, an application of computer-
aided language learning can redistribute the number of hours available for teaching and training, as students can do all necessary preparation at home and use classroom environment for practice, revision and support.

To sum up, it is important to remember implanting computers into studying process creates a new learning environment, but it is the teacher, who does the teaching, initiates interactive communication, facilitates learning, monitors students’ progress and organizes the classroom environment encouraging personalized and autonomous learning. Teachers are expected to think critically and creatively about the processes of teaching and its place in modern society.

BIBLIOGRAPHIC REFERENCES
ИСПОЛЬЗОВАНИЕ КОМПЬЮТЕРНЫХ ТЕХНОЛОГИЙ ДЛЯ ТЕСТИРОВАНИЯ ИНОЯЗЫЧНОЙ ПРОФЕССИОНАЛЬНОЙ КОМПЕТЕНТНОСТИ БУДУЩИХ СУДОВОДИТЕЛЕЙ

Для обеспечения формирования иноязычной профессиональной компетентности преподаватели английского языка традиционно применяют такие средства обучения, как учебник, магнитофон, аудио CD или видео. Появление новых информационных технологий расширяет возможности взаимодействия преподавателей и студентов и выносит их за пределы учебной аудитории. Дистанционные образовательные курсы создают новую учебную среду, направленную на развитие автономии студента, формирование сознательного отношения к учебе, обеспечивают возможность самостоятельно тренировать речевые умения и навыки, повышают мотивацию к изучению иностранного языка. Активное внедрение современных образовательных Интернет технологий в учебный процесс обеспечивает студентов дополнительными знаниями по предмету и является связующим звеном между обучением и овладением профессией, что способствует формированию профессиональной компетентности.

Применение компьютерных программ позволяет создавать авторские курсы, обеспечить студентов разнообразной учебной литературой по предмету, улучшает качество обучения за счет возможности дополнительной тренировки речевых умений и навыков, приобретенных на занятиях по английскому языку.

Автор статьи описывает собственный опыт применения программы дистанционного курса Moodle для тестирования языковых знаний и речевых умений будущих судоводителей в процессе обучения английскому языку профессиональной направленности.

Ключевые слова: курс дистанционного обучения, учебная платформа Moodle, тестирование языковых знаний и речевых умений, типы тестовых заданий.