Applying information and communication technology in the teaching of foreign language to maritime cadets

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Abstract. The article deals with the role of information and communication technologies as a set of methods, software and hardware used for the collection, processing, storage, distribution and exchange of information about the state of the studied object, process or phenomenon in the educational process, in particular in teaching a foreign language. Foreign language teaching in a maritime university based on the blended learning model contributes to the effective combination of traditional methods and new educational technologies for the formation of cadets' language skills and the development of skills in all types of speech activities. Applying ICT in foreign language classes contributes to increasing motivation to learn a foreign language; improving foreign language communicative competence; increasing linguistic knowledge; expanding the scope of knowledge of the socio-cultural specificity of the country of the studied language; developing the ability and willingness to study English independently.

1 Introduction

The problem of training a new type of professional who adapts quickly and flexibly to constantly changing conditions, who thinks critically and creatively, who constantly works on developing his intellectual and cultural level and who is capable of creatively realising himself in professional activity, is especially relevant at the current stage of society development.

The profession of shipmaster is one of the most in-demand in the external and internal labour markets, offering relatively rapid career progression, decent pay, and ever-increasing social guarantees. The vast majority of shipping companies employ international crews with seafarers from all over the world and, consequently, the working language on such vessels is English.

English language training at the State Maritime University named after Admiral F.F. Ushakov is part of the overall objective of training highly qualified personnel for the merchant marine fleet. English, being an integral part of the training of a ship engineer (watch officer), is a special subject by decision of the Academic Council of Admiral F.F. Ushakov State Maritime University.

The modern specialist should manage to interact effectively with the information environment, to use the full range of possibilities it offers [1]. The main requirements are not so much the amount of knowledge in a particular professional field, but rather the ability to develop it independently; the ability to identify professional tasks and to have the skills to solve them effectively.

The training of maritime cadets is based on a profession-oriented approach to teaching English, which provides for the formation and development of the ability of foreign language communication in specific professional, business, scientific spheres, and situations, with the organisation of motivational and orientational research activities. Communication in English is becoming an essential component of the professional activity of shipbuilders, and the role of the disciplines Foreign Language, Maritime English and Maritime Technical English in maritime universities contributes significantly to the quality of training [2].

2 Materials and Methods

The Foreign language discipline curriculum focuses on the study of English and complies with the requirements of the Federal State Educational Standard of Higher Education for specialization "Navigation", the requirements of STCW-78 (as amended), Table A-II/1, A-II/2, STCW-78 Code as amended, the curriculum for specialization "Navigation", profile "Navigation on the waterways" and IMO Modular Course 7.03 "Navigation. Officer in charge of a navigational watch" and 7.01 “Navigation. Master and chief mate” [3]. The programme reflects the current requirements for teaching practical foreign language skills in everyday communication and reflects the specific application of the foreign language in the professional sphere.

The Convention requires the watch officer to have adequate knowledge of the English language to enable the person in command to use charts and other navigational aids, understand meteorological information, communicate with other ships and shore stations, and perform the duties of a person in command of a multilingual crew. Communication on board in a

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multilingual crew environment emphasises the need to understand commands and the ability to be understood on matters relating to the performance of duties on the vessel. Shipmasters should also learn how to conduct business correspondence on commercial and legal aspects of vessel operations: completing the necessary documentation for vessel arrivals/departures, cargo operations, bunker and food ordering, etc.

Cadets study the disciplines of Maritime English and Maritime Technical English during their senior year. The main objective of the discipline "Maritime English" is the practical mastery of the English language in accordance with the requirements of the STCW Convention 1978 as amended (STCW - 78 as amended), SOLAS - 74 Chapter 5. The Convention requires written and oral English language proficiency, as well as the use of the IMO Standard Maritime Dictionary and Standard Phrases for communication at sea. At the end of the Maritime English course, cadets should be prepared to communicate in English on the following topics: reporting to watch; health and safety briefings, pollution prevention; and various exercises on board ship. Cadets should be able to transmit and receive information using the GMDSS subsystems, provide radio communication in emergencies; carry out the duties of the watch mate when sailing with a pilot on board and using English; ensure communication with coastal services to ensure safe navigation in coastal waters (VTS, Pilot Service, Port Authority, etc.); ensure communication with shore services to ensure safe navigation in coastal waters (VTS, Pilot Service, Port Authority, etc.); ensure the communication component of the ship and shore security system in accordance with the ISPS Code; establish and maintain effective communication in English during loading and unloading; use navigation charts and other navigational aids in English; conduct written and business communication and ship documentation in English; perform duties as a person in command of a multilingual crew; communicate with other ships.

It is hard to overestimate the role of information and communication technology (ICT) in the educational process in general, and in foreign language teaching in particular [4]. We define ICT as a set of methods, software and hardware used to collect, process, store, disseminate and share new quality information about the state of the object, process, or phenomenon under study.

**3 Results and Discussion**

Current research shows the positive results of ICT integration in English language teaching in groups and individually, providing freedom of choice of time and place according to the needs and convenience of the learners [5].

The main objectives of the use of ICT in foreign language classes are to increase motivation for learning a foreign language; to improve foreign language communicative competence; to increase the volume of linguistic knowledge; to expand knowledge of the socio-cultural specificity of the country of the studied language; to develop the ability and willingness to learn English independently.

The most significant ICT software and hardware tools used in foreign language (FL) teaching include the following:

1. Internet One of the fastest, most accessible, convenient, and cost-effective means of communication. It provides a platform for exchanging thoughts and ideas. The Internet provides students with wide access to a variety of authentic materials and helps form a foreign language communicative competence. Students can join foreign language study groups and take advantage of the exchange of information. A variety of e-books, magazines, manuals, textbooks, reference books and webinars (online seminars) of all kinds have made their way into our lives, and the availability of various social sites such as Facebook, Twitter, Instagram, etc. provides additional opportunities for learning situational language.

2. Television. The number of TV channels broadcasting news, entertainment, informative and educational programmes in foreign languages increases every year, shaping the audience's listening and understanding of foreign language speech and developing sustained interest and motivation to learn a foreign language.

3. Computers. As the most important tool of information and communication technology, it has the function of storing, preparing, collecting, disseminating, and exchanging information about the subject of study. Creating and introducing various special computer programmes in the process of teaching the foreign language, contributes to a significant increase in the level of knowledge of the language studied [6]. Computer technology enables students to choose individual learning paths with a focus on varying depth and complexity of subjects, and the electronic presentation of learning material creates the conditions for strengthening its professional orientation.

The use of computers, the Internet, television, e-mail, on-line audio, and video conferencing makes foreign language learning attractive, informative, and variable [7].

A special role in teaching a foreign language is played by video material. The use of video materials significantly increases the success of teaching a foreign language, since, having an unconditional positive emotional impact on students, it contributes to more active learning in all types of speech activity (reading, speaking, listening, writing) since the visual support of the foreign language sound range sounding from the screen helps to more complete and an accurate understanding of its meaning, the formation of linguistic abilities (through language and speech exercises), the creation of a situation of communication while guaranteeing favorable conditions for the formation of communicative competence.
Equipping the classrooms of the State Medical University named after Admiral F.F. Ushakov with various multimedia equipment and open access to the Internet allows you to include in the process of teaching professionally oriented English the display of video materials on topics provided for by the program of the relevant discipline. So, when studying a foreign language in the first year, cadets are shown video films not only of a country-specific orientation but also educational videos on maritime safety, types of ships and cargoes, arrangement of cargo ships, and various equipment both on deck and in the engine room. The use of video material in the second year on the topic “International buoy fencing system” allows cadets to visualize the theoretical knowledge gained, and to consolidate the learned vocabulary through audio and video material.

In the third year, the maritime English training program provides for familiarization with such important topics for navigators as: “Sailing with a pilot when communicating in English”, “Narrows and channels”, “Anchoring and anchorage”, “Mooring”, “Towing”, etc. Showing a video in English on the relevant topic by the teacher significantly increases the effectiveness of training, contributing to a better understanding and assimilation of the vocabulary on the topic and the procedure for conducting the corresponding operation.

Educational films on the application of the requirements of the main international maritime conventions, and investigations of various accidents at sea with audio accompaniment in English, are an essential addition to the traditional methods used in the process of teaching a foreign language in the fourth and fifth years.

Demonstration of video material can be carried out at various stages of studying the topic, depending on the goals and objectives set. When presenting a new topic, the video is exploratory. As a rule, for this purpose, the teacher selects a video film or a video with off-screen text, in which the volume of new lexical units would be small, not complicating the perception of information with an abundance of terms and grammatical structures. At the stage of working out and consolidating the studied material, the requirements for the selection of audio accompaniment of video material increase in the direction of increasing its complexity. And, finally, at the final stage, the content of the video and audio material must comply with the criteria for mastering a particular topic provided for by the curriculum. It is important to remember that the video material is only an additional learning tool and its use should not upset the overall balance of the methods and techniques used.

The use of video materials for educational purposes includes several stages: 1) preparation; 2) viewing; 3) work after viewing. For each stage, a set of exercises and tasks, both written and oral, is selected to solve the tasks set, increasing the efficiency of using video material and its role in teaching a foreign language.

The introduction of ICT into the educational process is designed to significantly optimize the transfer of knowledge and learning experiences, accelerating adaptation to the environment and the social changes taking place, receiving better quality learning and education; to contribute to the reform of the traditional education system in accordance with the requirements of the time [8].

The educational process of teaching a foreign language in a maritime university is based on the blended learning model, which helps to combine traditional methods and new educational technologies reasonably and effectively [9] to form language (lexical and grammar) skills and develop skills in all kinds of speech activities (reading, listening, speaking, and writing) among cadets.

The Department of Foreign Languages at Ushakov State Maritime University has all the necessary resources to successfully achieve the goals set by the disciplines studied and to meet their main objectives. Each classroom is equipped with a TV and a computer with Internet access.

<table>
<thead>
<tr>
<th>Name of course</th>
<th>Name of curriculum topic</th>
<th>IMPL</th>
<th>Marlins</th>
<th>Seagull</th>
<th>Sea Talk Pro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign language</td>
<td>Types of vessels</td>
<td>Section 2/1</td>
<td>Pack1. Unit 1</td>
<td>–</td>
<td>Part 2 Section 3</td>
</tr>
<tr>
<td>Cargo operations</td>
<td>Section 4/4</td>
<td>–</td>
<td>CD#0027 Ballast Water Management</td>
<td>Part 4 Section 1</td>
<td></td>
</tr>
<tr>
<td>Buoys and beacons</td>
<td>Section 4/3</td>
<td>–</td>
<td>–</td>
<td>Part 5 Section 4</td>
<td></td>
</tr>
<tr>
<td>Tides and tidal streams</td>
<td>Section 5/4</td>
<td>–</td>
<td>–</td>
<td>Part 5 Section 4</td>
<td></td>
</tr>
<tr>
<td>Maritime English</td>
<td>COLREGs–72</td>
<td>Section 4/1</td>
<td>Pack1. Unit 16</td>
<td>CD#0149 Incident Investigation</td>
<td>Part 5 Section 3</td>
</tr>
</tbody>
</table>

Table 1. List of computer programmes in the subjects studied.
<table>
<thead>
<tr>
<th>situations analysis</th>
<th>Unit 17</th>
<th>CD#0123</th>
<th>Risk Assessment and Management</th>
<th>Part 1 Section 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life–saving appliances</td>
<td>Section5/1</td>
<td>Pack1. Unit 4</td>
<td>CD#0001 PersonalSafety</td>
<td>Part 5 Section 2</td>
</tr>
<tr>
<td>Port services and procedures</td>
<td>Section4/2</td>
<td>Pack1. Unit 15</td>
<td>CD#063 Mooring</td>
<td>Part 5 Section 2</td>
</tr>
<tr>
<td>Passage Planning</td>
<td>Section4/1</td>
<td>Pack1. Unit 21</td>
<td>CD#0026 Voyage Planning</td>
<td>Part 5 Section 6</td>
</tr>
<tr>
<td>ISPS Code</td>
<td>Section5/1</td>
<td>–</td>
<td>CD#0115 Security Awareness</td>
<td>Part 3 Section 1</td>
</tr>
<tr>
<td>VHF radio telephone communication</td>
<td>Section1/1</td>
<td>Pack1. Unit 20</td>
<td>–</td>
<td>Part 6 Section 3</td>
</tr>
<tr>
<td>GMDSS procedures</td>
<td>Section1/3</td>
<td>Pack1. Unit 10</td>
<td>CD#121 Ship Security Officer Training system</td>
<td>Part 6 Section 4</td>
</tr>
<tr>
<td>Navigation bridge equipment</td>
<td>–</td>
<td>Pack1. Unit 12</td>
<td>CD#0064 ECDIS</td>
<td>Part 3 Section 4</td>
</tr>
</tbody>
</table>

Each computer database contains audio and video material on the topics covered in the programme of the respective discipline. These include Headway Spoken English e-learning aids with audio and video files, marine English study guides, educational films, and presentations.

Each classroom has an on-line Sea Talk Pro modular course programme, as well as Seagull Tests, IMPL, etc.

Cadets in years 1–5 of the Faculty of Navigation have the opportunity to run computer programmes in various disciplines, both in “training” and “testing” mode.

Table 1 presents an indicative list of computer programmes according to the topics of the disciplines studied.

4 Conclusion

The choice of methods and educational technologies to solve problems and achieve the objectives of the disciplines “Foreign English”, “Maritime English” is conditioned by the need to ensure the required quality of education and to form in cadets a set of general cultural and professional competencies necessary for interpersonal interaction and cooperation in an intercultural communication.

Applying ICT in foreign language classes contributes to increasing motivation for learning a foreign language; improving foreign language communicative competence; increasing linguistic knowledge; expanding the scope of knowledge of the socio-cultural specificity of the country of the studied language; developing the ability and willingness to study English independently [10].

References

2. S. Magenes, A. Cancer, S. Curti, C. Pradella, A. Antonietti, Learning and Motivation 79, 101829 (2022)