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THE ROLE OF ENGLISH IN TRAINING CYBERSECURITY SPECIALISTS IN THE CONTEXT OF DIGITAL TRANSFORMATION OF EDUCATION

Abstract: *the article examines the role of the English language in the educational process of cybersecurity specialists in the context of digital transformation of modern education. The relevance of the study is determined by the widespread of the English terminology in the fields of information technology and cybersecurity. The paper considers the influence of digital educational technologies, online learning platforms and international digital resources on the professional education of students. Close attention is paid to the specifics of using the English terminology in technical documentation, software interfaces and cybersecurity training systems. The results display that knowledge of the special English terminology contributes to the development of student's professional competencies, increases the effectiveness of training future cybersecurity specialists.*

Keywords: *digital transformation of education, the English terminology, cybersecurity, digital education, professional communication, online learning, cybersecurity education, IT technologies.*

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РОЛЬ АНГЛИЙСКОГО ЯЗЫКА В ПОДГОТОВКЕ СПЕЦИАЛИСТОВ ПО КИБЕРБЕЗОПАСНОСТИ В КОНТЕКСТЕ ЦИФРОВОЙ ТРАНСФОРМАЦИИ ОБРАЗОВАНИЯ

***Аннотация:** в статье рассматривается роль английского языка в процессе обучения специалистов по кибербезопасности в контексте цифровой трансформации современного образования. Актуальность исследования определяется широким распространением английской терминологии в сферах информационных технологий и кибербезопасности. В работе рассматривается влияние цифровых образовательных технологий, онлайн-платформ обучения и международных цифровых ресурсов на профессиональное образование студентов. Особое внимание уделяется особенностям использования английской терминологии в технической документации, программных интерфейсах и системах обучения кибербезопасности. Результаты показывают, что знание специальной английской терминологии способствует развитию профессиональных компетенций студентов и повышает эффективность подготовки будущих специалистов по кибербезопасности.*

***Ключевые слова:** цифровая трансформация образования, английская терминология, кибербезопасность, цифровое образование, профессиональная коммуникация, онлайн-обучение, образование в области кибербезопасности, ИТ-технологии.*

Modern education is currently experiencing a large-scale digital transformation caused by the fast development of information technologies, artificial intelligence, cloud computing and global communication systems. Educational institutions are increasingly using online learning platforms, virtual laboratories, electronic libraries and interactive educational resources [2].

These technologies considerably change the standard educational process and create new requirements for both students and teachers [3; 6]. The transformation is

especially noticeable in technical and technological fields such as computer science, information technology and cybersecurity.

Cybersecurity has become one of the most crucial areas of a professional activity in the digital age. The rising number of cyberattacks, data breaches, malware incidents and phishing campaigns have increased the demand for highly qualified cybersecurity specialists. Modern specialists have to possess not only technical knowledge but also the ability to work with international digital resources, software documentation and professional communication systems. Since the majority of technological innovations are developed in English-speaking countries, English has become the dominant language of cybersecurity and information technology. As a result, the English terminology occupies the central place in cybersecurity education. In technical and technological disciplines it often appears because of the rapid spread of digital technologies.

The development of programming languages, network technologies and security tools has led to the formation of an international professional vocabulary based mostly on the English terminology. In cybersecurity it is used in practically every field of a professional activity. Such terms as «ransomware», «exploit», «hashing», «endpoint» and «authentication » are extensively used by not only IT professionals but also students and teachers. Many of these concepts do not have a full-value equivalent in the Russian language or lose a part of their technical meaning when translated into Russian.

Therefore, the original English forms are often preserved in professional interaction and educational materials. However, they can often make communication more problematic for those who do not comprehend speech in English well. In cybersecurity they are used almost on a daily basis while working with software, protecting data and analyzing cyber threats.

Here are some prevalent English terms that are widely used in cybersecurity (table 1) [5].

Table 1

Key English terms in the field of cybersecurity

№	Word	Meaning
1	Hacker	A person who breaks into computer systems
2	Phishing	Online fraud used to steal personal data
3	Malware	Harmful software
4	Firewall	A system that protects a network
5	Backup	A copy of important data
6	Password	A secret word for access
7	Login	Entering a system or account
8	Spam	Unwanted messages
9	Bug	A software error
10	Update	A software renewal
11	VPN	Protected internet connection
12	Cyberattack	An attack on computer systems
13	Data breach	Leakage of confidential data
14	Antivirus	Software that protects against viruses
15	Encryption	Protection of information by coding

A large number of English terms has already grown into the element of professional communicating. For instance, a system administrator may say «We have to make a backup of the database». People also often pronounce such phrases as «The user has just received a phishing email» or «Remember to update the antivirus».

Some words are used almost without translation, as they are. For example, the word «hacker» is widely known even by people who are not professionals in IT. The term «spam» is also very common in social networks and email communication for a wide range of users.

The principal reason for the spread of English terms is the international nature of the IT sphere. Most programs, websites and technologies are created in English-speaking regions. Paperwork, manuals and professional courses are largely written in the English language [1]. Moreover, anglicisms facilitate specialists to exchange data much faster. One short term like «bug» is a lot easier and quicker to use than a time-consuming phrase such as «a software error».

The process of digital transformation in education has significantly increased the influence of English-language resources on the educational environment. Modern students actively use international online platforms and digital services for professional training. For example, when students work with penetration testing laboratories or network security simulators, they encounter commands, protocols and instructions written entirely in English. Operating systems such as Linux and Astra Linux also use English-based command-line interfaces. Students studying cybersecurity constantly

work with the commands such as «sudo», «ping», «echo» and «whoami» [7]. Thus, understanding English jargon has become an essential professional skill.

The use of the English terminology in cybersecurity education offers several significant advantages. Firstly, it allows students to get direct access to up-to-date scientific publications, technical manuals. As cyber threats progress rapidly, the availability of current information is of paramount importance. English-language sources often provide the most recent data about vulnerabilities, cyberattacks, and security technologies. Secondly, the use of English terminology improves students' professional communication skills. Cybersecurity specialists commonly cooperate with worldwide companies and take part in international conferences. The knowledge of professional English lets students integrate more effectively into the international IT environment and boosts their competitiveness in the labour market. Finally, English terminology assists in the development of technical literacy. Students who have managed professional terminology can more easily configure software, analyze system log, read technical documentation, and address practical security tasks.

At the same time, the active use of English words may create several educational challenges. Some English terms have complex meanings and require an additional explanation from teachers [4]. For instance, the term «threat intelligence» cannot be translated without losing its technical specificity. Another problem is the excessive use of English borrowings. The unnecessary use of anglicisms may create communication barriers for beginners. Therefore, teachers should maintain a balance between professional terminology and accessibility of educational content. To improve the effectiveness of education teachers should use bilingual glossaries, visual materials and contextual explanations of technical terms.

In addition, artificial intelligence technologies and adaptive learning systems create new opportunities for studying professional terminology. Modern educational platforms can automatically translate technical texts, generate personalized vocabulary exercises and provide interactive simulations for cybersecurity training. They increase student motivation. Thus, the digital transformation of education has significantly

strengthened the role of English in cybersecurity training. The professional English terminology has become an integral component of modern technical education.

The English language performs not only a linguistic function but also an educational and professional one in training of cybersecurity specialists. Therefore, the integration of the English terminology into cybersecurity education remains the essential element of training highly qualified specialists, who are capable of working effectively in the global digital environment.

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