

## TRANSDISCIPLINARY APPROACH TO TEACHING ENGLISH FOR IT STUDENTS

**Abstract.** Modern approaches to teaching/learning ESP for CS & IT university students are analysed from the perspective of ESP teaching experience of the authors. Transdisciplinary approach which integrates wide use of ICT and involves cooperation with subject teachers and potential employers has proved its effectiveness for CS & IT contexts.

**Ключові слова:** English for Specific Purposes (ESP), Information technology (IT), Information and communication technology (ICT), digitalization, digital literacy, target situation, needs analysis, expected learning outcomes, online learning, MOOC, educational platform, applications.

**Introduction.** Globalization processes in all areas of human life have increased the role of English as a means for international communication and led to internationalization of education at different levels, especially at tertiary level. There is a strong need in sharing new knowledge and skills worldwide that nowadays is impossible without English as lingua franca and digital literacy. Moreover, according to Global digital overview made in 2020, English is the most common language used for web content (nearly 60% of web content is presented on the Internet) (2020). That is why English taught at Ukrainian universities is no more General, but English for Specific Purposes (ESP) of learners.

Digitalization that started last century has changed not only business, making it digital, but education as well. COVID-19 and long-lasting quarantine have crucially transformed the educational processes by transition from traditional F2F teaching and blended learning to distance learning provided online with the help of various IT instruments, tools and applications. Having been an umbrella for various specialism areas at the beginning of the millennium, today IT and digital literacy have become core skills without which modern professionals cannot function adequately and efficiently. Thus, English is needed for getting and sharing new knowledge that in its turn, demands effective use of ICT. The way how to integrate ICT in an ESP course is described in this paper, referring to nearly 30-year experience of teaching ESP for Computer Sciences (CS) and IT university students.

**Problem statement.** The changes in teaching and learning ESP started with introducing National ESP Curriculum for Ukrainian Universities (2005), which was designed on the basis of innovations, descriptors of communicative language competencies given in CEFR (2003) and the Baseline Study of the Current Situation in ESP in Ukraine (2004). The latter (Baseline Study) analysed the needs of primary and secondary stakeholders, where potential employers were treated as the secondary ones, those who will benefit from changes in English course indirectly (2004:10).

Though the documents mentioned some of the approaches to teaching/learning ESP as well as the use of IT for learning languages, the university teachers are still facing the problem which one of the approaches to use, especially with CS & IT students, to make the ESP teaching and learning process effective and to provide quality assurance of Ukrainian universities compatible with European universities.

**The main content of the work.** The specific approaches to ESP teaching and learning are described by Hutchinson and Waters (1987) and Dudley-Evans and Jo Maggie St John (1998). They are based on the specificity of the needs analysis of English language learners and focused on meeting these needs by filling in learning lacks and gaps. Hutchinson and Waters see learning as a process rather than a product, that is learning-centred approach, i.e., “learning by doing”, very close to experiential learning based on the reflective cycle of David Colb (1984). According to them, to use English adequately in future professional environment, ESP learners perform a series of actions in the situations, simulating real life situations that are identified by the thorough needs analysis. Needs analysis encompasses target situation identified in Educational Qualification Standard(s) (EQS) and potential job characteristics, and learners’ needs identified with the help of ongoing analysis of their lacks and gaps in learning ESP.

Dudley-Evans and Jo Maggie St John were the first to mention ESP as a multidisciplinary approach to ESP that is also explained by the specific needs in learning English. The purpose of multidisciplinary approach, which is based on tasks and treated also as task-based approach promoted by Prabhu in 1987, is to create tasks which will help to develop various skills within learners, not limited to language only, while doing tasks close to real-life.

So, students are provided with the series of communicative tasks aimed at problem-solving with the help of critical thinking, analysing, evaluating information, and using English for communication. While performing tasks students develop various language skills: reading, speaking, listening, and writing, as well as ability to work individually, in pairs or teams. Such approach to learning develops self-organising, (self)-management skills of future IIT specialists. Reflecting on the tasks performed, students raise their self-awareness and develop self-evaluation skills which are initial for taking decisions on changes and transformation, when there is a need. These skills are transferable to various professional environments of English language learners.

Though there is no problem with identifying needs in learning English and designing descriptors of language behavior in terms of expected outcomes, using EQS for a specialism area, there is a set of problems ESP teachers face. They are mostly concerned with the specialism itself: what notions and linguistic objects to focus on, what materials to choose for ESP courses, which skills are more demanded for learners, in our case CS & IT students. The way out is in close co-operation with subject teachers from the very beginning of the course(s).

Such innovation as Topic Web borrowed from the Framework Curriculum for Learning German for Specific Purposes and introduced in the University ESP course (2007) proved its effectiveness. The topic web for IT students is firstly agreed with the University subject teachers and/or built with the help of the original authentic

materials – ESP coursebooks provided by leading publishing houses. Then, it is agreed with students, taking into consideration the knowledge they already have in this or that topic.

As soon as the topic web is ready, both teachers and learners can easily find the information on the Internet. In this case, while searching the information, students develop their language skills, especially reading skills. Sometimes subject teachers share the materials to be processed at ESP courses. To process the information students are recommended to take notes, visualize the text, using various applications appropriate to their needs (<https://www.mindmup.com/>, <https://gitmind.com/>, <https://www.mindmeister.com/>, <https://tobloef.com/text2mindmap/> etc).

In our teaching practice we use specialist texts of various genres specific for CS & IT more as TAVI (Text As a Vehicle of Information) rather than a Text As Linguistic Object (TALO). When preparing and making presentations, obtained from the texts processed and/or resulted from group-discussions, students may choose any application they like and find easy to use: MS PowerPoint Presentation, Socrative (<https://www.socrative.com/higher-ed/>), Mentimeter (<https://www.mentimeter.com/>), SlideShare (<https://www.slideshare.net/>) etc.

For teamwork and information exchange we widely use collaborative applications and tools such as MS Teams and Padlet (<https://uk.padlet.com/>), digital interactive whiteboard Jamboard (<https://jamboard.google.com/>) etc. Social media: social media websites popular among students and professionals such as Facebook, TikTok, Instagram, LinkedIn, and social media services such as Youtube, Telegram, Viber and others are widely used for socializing and communication in English both in F2F classrooms and when being at a distance.

This proves that while learning English, university students develop their digital literacy, IT and other professional skills and at the same time develop their communication skills and construct new knowledge, when performing tasks created by an ESP teacher. Constructive approach is also applied by ESP teachers, when creating online courses on MOOC, MOODLE, Edmodo etc., as a series of tasks of various complexity and specificity based on Bloom's learning taxonomy and using Bloom's taxonomy digital planning verbs as a prompt taken from TeachThought University website.

**Innovation(s).** The described integration of modern approaches to teaching/learning ESP in CS & IT context, integration of ICT in ESP teaching contributes to constructing new knowledge and skills in a harmonious manner because of transdisciplinary nature of the tasks performed through an ESP course.

**Conclusions.** Though there is a variety of modern approaches to teaching and learning ESP, transdisciplinary approach is considered the most effective for CS & IT university students. The wide use of ICT reinforced by COVID – 19 quarantine and transformation of higher education resulted from its digitalization and internationalization proves its applicability both in F2F and virtual classrooms.

When choosing various educational software and social media, mobile applications, and functions, we recommend to use the following criteria: personalization (Group profile and specialism area), content and context, usability and technical performance, interactivity and engagement, integration of social

interaction, meaningful (immediate) feedback, accountability to lessons (aims, learning objectives etc.), higher order thinking skills (HOTS).

When applying this approach in a virtual classroom, one needs to limit ICT use to 3 instruments: one – for asynchronous communication (Moodle, MS Teams, Edmodo etc.) and two – for synchronous meetings, choosing one collaborative application (ZOOM, MS Teams, Google meeting etc.) and digital interactive whiteboard (Jamboard, Padlet etc.) or educational game applications (Kahoot, Pear Deck, wordwall.net etc.)

## REFERENCES

1. Програма з англійської мови для професійного спілкування = National ESP Curriculum for Ukrainian Universities. /Колектив авторів: Г.Є. Бакаєва, О.А.Борисенко, І.І.Зуєнок, В.О. Іваніщева, Л.Й. Клименко, Т.І. Козимирська, С.І. Кострицька, Т.І. Скрипник, Н.Ю. Тодорова, А.О. Ходцева. – К: Ленвіт, 2005. - 119 с.

2. СВО НГУ НМЗ – 07 Нормативно-методичне забезпечення дисципліни «Іноземна мова за професійним спрямуванням». Стандарт вищої освіти Національного гірничого університету. / Колектив авторів: Кострицька С.І., Зуєнок І.І., Поперечна Н.В., Швець О.Д. – Дніпропетровськ: НГУ, 2007–165 с.

3. *Common European Framework of Reference for Languages: Learning, Teaching, Assessment* (2001). Cambridge: Cambridge University Press. – 273 p.

4. *Digital 2020 Global Digital Overview* (January 2020) by Hootsuite [online]. Available at: <https://www.slideshare.net/DataReportal/digital-2020-global-digital-overview-january-2020-v01-226017535>

5. Dudley Evans, T., and Maggie Jo St John (1998) *Developments in ESP (A multi-disciplinary approach)*. Cambridge: Cambridge University Press. – 301 p.

6. Heike, T. & TeachThought Staff. Bloom's taxonomy digital planning verbs. *Bloom's Taxonomy Is a Hierarchical Framework For Cognition And Learning Objectives*. TeacherThought University Digital Library for Teachers [online]. Accessed at: <https://www.teachthought.com/learning/what-is-blooms-taxonomy/>

7. Hutchinson, T. and A. Waters (1987) *English for Specific Purposes*. Cambridge: Cambridge University Press. – 183 p.

8. Kolb, D.A. (1984) *Experiential learning: experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall. Available at: [https://www.researchgate.net/publication/235701029\\_Experiential\\_Learning\\_Experience\\_As\\_The\\_Source\\_Of\\_Learning\\_And\\_Development](https://www.researchgate.net/publication/235701029_Experiential_Learning_Experience_As_The_Source_Of_Learning_And_Development)

9. Moon, J. A. (1999) *Reflection in Learning and Professional Development*. London: Kogan Page. - 229 p