Book review

ENGLISH PROFICIENCY IN CYBERNETICS TEXTBOOK AS A REFLECTION OF ESP PERSPECTIVES IN UKRAINIAN HIGH EDUCATION

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1. GENERAL DESCRIPTION

The *English Proficiency in Cybernetics* textbook (Rebenko, 2017), published by Taras Shevchenko National University of Kyiv, Ukraine (http://www.univ.kiev.ua/en/), has been designed for the B2-C1 students completing their 4th year of undergraduate study in Applied Mathematics, Computer Sciences, System Analysis, IT and Software Engineering. As a part of its author's – Associate Professor, Ph.D. in Philology Maryna Yu. Rebenko – in-depth research, this course applies to the Cybernetics students who have a specific area of academic and/or professional interest in ESP. Technology-integrated English for Specific Purposes content of the textbook allows the students to develop their English competences, particularly reading, writing and speaking, successfully. Based on recent trends in ESP/EAP methodology, the textbook under review meets national and international academic standards, professional requirements, and students' personal needs. Primarily compiled for the Cybernetics undergraduates, the topics of the book might be implemented effectively in other subject-related ESP classrooms. Both the clear language and the accessible style aim to equip students with high-level employability literacy skills. The student-centred teaching strategies are embedded in each unit to nurture student disciplinary literacy as a whole, and critical thinking and reflective practices development in particular. The textbook is appropriate for both in- and out-of-the-classroom ESP environments, as well as examination preparation. It could be also applied in online learning to facilitate senior students' professional competence.

2. BOOK DESIGN OVERVIEW

The textbook reveals a wide range of Computer Science and Information Technology related topics, such as Cybernetics Origin (pp. 6-16), Subdivisions of Cybernetics (pp. 17-25), Robotics (pp. 26-36), Cybernetics in Biology (pp. 37-47), Modern Technologies (pp. 48-57), Network World Society (pp. 58-67), Cyber Security (pp. 68-76), Online Communication Ethics (pp. 77-84), Future Development of Science (pp. 85-96), and Ecological Challenges (pp. 97-108). It opens with the Preface (p. 5) which sets the scene. At the end of the textbook four appendices are comprised – Common Computer Science and IT Acronyms (pp. 109-

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111), Supplementary Reading (pp. 112-148), Useful Phrases and Clichés for Summary Writing (pp. 149), and Developing Student Writing Proficiency section (pp. 150-157). There is a list of references with the entries to each unit at the end of the textbook. Each unit is organized in two thematic parts – Part I and Part II. The structure of a textbook unit is as follows:

Unit Title

Part I. Subtitle 1.
A. "Discussion Starters" Session
B. "Before You Read" Session
C. Article 1 reading
D. "Comprehension Check" Session
E-F. Post-article vocabulary building assignments
G. Student "Pair Work" Session.

Part II. Subtitle 2.
A. "Before You Read" Session
B. Article 2 reading
C. "Comprehension Check" Session
D-E. Post-article vocabulary and grammar assignments
F. Student "Web Research Activity" Session
G. Speaking Tests 1-2
H. Checklist
I. Home Writing/Reading Task.

Part I of each unit warms up learners at a "Discussion Starters" session. A set of images, presented here, illustrate a case problem to consider first that will be discussed throughout the unit. This is followed by Before You Read Session, a self-reflective question related to the unit case problem. The book keeps introducing to a new topic with an article to read. For a deeper understanding of the author's ideas, a post-reading comprehension test is implied (Session D). Students refer back to the text either answering the text-dependent questions or making up their questions to shed light on the author's key ideas. Next, in Sessions E-F, learners build up their topic-related vocabulary by doing the matching, synonym-antonym, sentence ending suggestion, true-false, agree-disagree, and other activities. Session G employs pair or group work subject-matter discussion to foster student opinion exchange, consolidate the acquired knowledge, and develop their speaking skills.

Part II logically sequences the textbook contents and learners' objectives. Aimed to refine reading, speaking and writing skills, the sessions are structurally similar to Part I layout but more varied here. For example, Session B, a reading completion assignment, is designed similarly to the academic exam layout (see the ESP National Curriculum for Universities (Bakaeva et al, 2005)) when a learner first reads an article and then complete a reading gap-filling summary, match headings, etc. Next, to provide evidence from the reading, Comprehension Check Session may ask learners to work out the questions based on the corresponding answers or make up their own sentences with the given word combinations from the article. Sessions D-E target to practice and expand students' vocabulary through word-formation gap filling, sentence logical ending, grammatically irrelevant word correction, and use of language completion tasks. Then, Web Research Activity Session challenges students' self-learning skills to explore topic-relevant online

information, organize it in a self-designed project, and present its key ideas in class. An ESP practitioner can optionally run the web research activity assignment not as a self-worked out project, but as a teamwork task, applying EduScrum project-making principles of Agile learning expertise. It boosts the speaking skills through the acquired knowledge compilation and project-making learning. Session G (Speaking Tests 1-2) represents topic-related pictures or quotes from famous scientists and/or IT luminaries to ponder upon. Students are encouraged to argue upon their work-through examples. Also, students may be asked to role-play according to the topic-related authentic context. Taking on different personalities learns role-players to cooperate and arouses student job-focused consciousness. Next is a self-review checklist with a series of questions to answer. Multiple-choice answer options are not provided. All narrowly focused and concrete objective questions point to the mainstream purpose to foster learners to review the unit material and enhance both their hard and soft skills in professional English. Each unit ends up with a special expanded reading or essay writing exercising Session I. Students may either read a content-oriented paper and summarize its key ideas by making a report in class or write an essay on a suggested topic. An essay type is always prescribed in the task.

2.1. Unit samples

For instance, in Discussion Starters Session A of Unit 4 *Cybernetics in Biology*, Part I, students can see the following image:
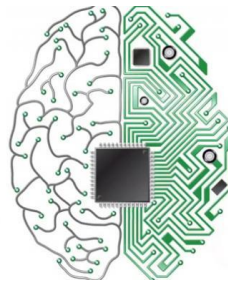
(Rebenko, 2017, p. 37. Retrieved from
https://www.singularityweblog.com/practopoiesis/)

As B2-C1 learners come to a topic with some domain knowledge background, they are supposed first to describe the given image, then to comment on the possibility to implement engineering decisions into studying of human intelligence.

In Before You Read Session B of Unit 2 *Subdivisions of Cybernetics* learners are asked to reflect on what is implied in the idea of focusing on technology, not people, as the title of the text for reading is *Artificial Intelligence Ideas: focus on tech, not people.*

In the post-reading Session E of Unit 5 *Modern Technologies*, students are supposed to suggest their own endings of the given incomplete sentences from the essay *So Much Information, So Little Time.* Learners fill in the table with the details from the animals mentioned in the text *Ready for the Robot Revolution?* to complete another post-reading Session F of Unit 3 *Robotics.*

As described above, student pair/group work activities (Session G) make a logical ending of Part I of each unit. Here is an example from Session G of Unit 8 *Online Communication Ethics* where students role-play according to the following situation:

Student A	You are eager to boost one of the latest versions of the temporary social networking application. You should convince your audience that your product is going to alter human relationships to online visibility, data privacy, and content ownership.
Student B	You are an opponent of such innovations. You do believe that temporary social media gives nothing but posting inappropriate pictures, hacking into profiles, spreading rumours, etc. Substantiate your ideas with examples and prove that natural ways to communicate are the only suitable ones for human beings (Rebenko, 2017, p. 80).

For instance, in Part II of Unit 7 *Cyber Security*, Reading Session B, students are engaged in reading the article *The Snowden Era Challenges* and assigned to fill in the gaps with a suitable word form.

Post-article vocabulary and grammar Sessions D-E of Unit 9 *Future Development of Science and Technology* are organized as follows:

D	Read the following paragraphs depicting the areas that will be revolutionized by quantum computing in the future. Guess the areas mentioned. For each gap think of the most appropriate word to complete the text.
	Text
E	Each sentence, from 1 to 10, of the essay *Future Car Technologies*, may contain an unnecessary word – a word which is either grammatically incorrect or one that doesn't fit in with the meaning of the text. Indicate the unnecessary word and tick the correct sentences ($\sqrt{}$).
	Text
(Rebenko, 2017, p. 93-94).	

In Web Research Activity Session F of Unit 10 *Ecological Challenges*, students are assigned to project the topic *Future Challenges for Mankind* and focus on the following issues: peak oil and water dilemma; climate change; food shortage; resource and food depletion; viral pandemics; population ageing, and religious tensions.

In Speaking Test 2 of Session G (Unit 8 *Online Communication Ethics*) students are engaged to reflect and discuss the following controversial issues:

- Give your considerations why such giants as *Apple* may come to the tech world's "bad boys list" of the US government? Substantiate your ideas with examples.

- Comment whether *Apple* was right in its refusal to unlock a phone that belonged to the terrorist, San Bernadino shooter Syed Farook? (Rebenko, 2017, p. 84).

Session I of Unit 2 *Subdivisions of Cybernetics* may exemplify the home writing assignment format. Here students are supposed to write an argumentative essay on one of the given statements:

1. Technological progress will be accelerated by the arrival of advanced artificial intelligence.
2. Superintelligence will lead to more advanced superintelligence.
3. Superintelligence may be the last invention humans ever need to make (Rebenko, 2017, p. 25).

2.2. Appendices description

Appendix 1 provides learners with the most common Computer Science and IT acronyms, particularly the shortened forms of the frequently used terms, email abbreviations, and emoticons. Appendix 2 supplements each unit with two thematically related texts making it possible to expand the students' subject-matter knowledge. The table in Appendix 3 reveals a set of useful phrases and clichés for summary writing. Finally, Appendix 4 covers the examples of two essay types – argumentative and expository. The samples of 'for and against', 'positive or negative development', 'advantage/disadvantage', and discursive essays as models of argumentative writing attempt to review how to convince the reader to accept the writer's point of view. Learners can practice how to provide information, explanations, and points of view straightforwardly to the readers through opinion, discussion, 'suggestion solutions to the problem' essay samples as expository writing models. The appendices content aims to push further development of student reading and writing proficiency skills with an emphasis on the full self-learning strategy.

3. EVALUATION

This over-150-page textbook in professional English is well pedagogically designed and consistently written. Formally approved by the faculty and university Academic, and Scientific and Methodological Councils, the textbook is published by Taras Shevchenko National University of Kyiv Publishing House.

The sufficient built-in practical material of the units is featured by well-designed instructional aids, i.e. learners' engagement in all activities is crucial. There is a strong focus on the students' acquired knowledge transfer into real-life tasks and applications at a would-be workplace. The *English Proficiency in Cybernetics* approach enables students to become aware of what they learn, why they need this knowledge, and how to apply it effectively beyond the ESP classroom. The combination of pre-, while- and post-reading tasks make reading more communicative and learners more engaged, and also, it integrates other skills development. Encouraged to ask and answer questions, make up their own text-related questions, perform subject-matter situations in teams and work out projects, leaners boost their professional vocabulary. The reflective learning mode of speaking tests enables students to express themselves freely and, as a result, develop their critical thinking and nurture reflective practice skills. Students are expected to work hard on their reading or writing homework. Pre-built problem cases and content-based assignments make their overall work fruitful.

The *English Proficiency in Cybernetics* application is partly limited. It could be hardly used in large classrooms with more than 25 students each when an ESP teacher does not monitor individual and/or small student group work efficiently. In contrast, it could be run within the following ESP setups – from small student classrooms (up to 20

students in a class) to blended learning settings when the in-class teacher's monitored activities are combined with distance and self-learning environments. So, the aforementioned educational endeavours might contribute to students' professional English competence enhancement within the university ESP traditional classroom and beyond it.

REFERENCES

Bakaeva, G., Borysenko, O., Ivanischeva, V., Khodtseva, A., Klymenko, L., Kostrytska, S., ... Zuyenok, I. (2005). *English for Specific Purposes (ESP) National Curriculum for Universities.* Kyiv, Ukraine: LENVIT.

Rebenko, M. Yu. (2017). *English Proficiency in Cybernetics: Textbook (1ˢᵗ Edition).* Kyiv, Publishing and Polygraph Centre "The University of Kyiv". http://csc.knu.ua/media/filer_public/61/6b/616bb9af-34e1-4116-84a6-a95a86e42def/cnt-0020626-01.pdf.