

APPLYING CORPUS QUERY LANGUAGE (CQL) TO THE DEVELOPMENT OF TECHNICAL LEXICAL COMPETENCE IN FUTURE ENGINEERS IN UKRAINE

In the current context of digitalisation and the growing internationalisation of science and education, proficiency in English – and particularly in technical vocabulary – has become a crucial element of professional training for engineers. Nevertheless, students of technical disciplines often exhibit a limited command of domain-specific English terminology, a narrow productive vocabulary, and a weak ability to contextualise technical concepts. In response to these challenges, the integration of corpus linguistic tools – especially the use of Corpus Query Language (CQL) – into the educational process is proving highly relevant for the systematic development of students' technical lexical competence.

The corpus-based approach in teaching English for Specific Purposes (ESP) has gained wide recognition in international practice (Hyland, 2009; Anthony, 2018). This approach relies on authentic linguistic databases (corpora) that reflect real-life language use. CQL, as a formalised query language, enables educators and researchers to conduct highly specific searches for lexical and grammatical constructions based on various parameters, such as lemma, part of speech, context, or syntactic structure (Stefanowitsch, 2020). Such functionality opens up extensive possibilities for identifying and selecting relevant vocabulary from within technical discourse.

The aim of this study is to explore the potential of CQL-based queries in identifying and systematising technical vocabulary for subsequent integration into teaching practice. Particular attention is given to how authentic corpus data can inform the development of learner-oriented materials in English for Specific Purposes (ESP) courses. The research utilises open-access English-language corpora – primarily the English Web 2021 (enTenTen21), alongside linguistic software tool such as Sketch Engine.

Examples of typical CQL queries include the following:

- [lemma="engineer"] [tag="NN.*"] – retrieves common noun collocates of the lemma *engineer* (e.g., *engineer team*, *engineer skills*);
- [tag="JJ.*"] [lemma="resistance"] – identifies adjectival classifiers associated with the technical term *resistance* (e.g., *thermal resistance*, *electrical resistance*);
- word="circuit" within <s> – searches for occurrences of the word *circuit* within sentence boundaries to analyse its syntactic roles.

The data obtained were used to compile a list of lexical items with corresponding frequency data, contextual examples, and typical collocational patterns. These findings served as a foundation for developing teaching materials, including gap-fill exercises, sentence construction tasks, context-based translations, and thematic glossaries. This approach not only enriches the students' technical vocabulary but also cultivates their ability to engage in independent lexical analysis.

Incorporating CQL into the classroom allows instructors to base vocabulary selection on real usage, identifying natural constructions and avoiding outdated or artificially constructed examples. Furthermore, such methodology fosters the development of critical thinking, linguistic awareness, and the ability to work with open-access language data – all of which are key skills in modern technical education. It also enhances learners' engagement by providing context-rich, discipline-specific examples that reflect authentic language use in engineering fields.

In conclusion, the use of Sketch Engine and Corpus Query Language represents an effective and innovative strategy for enhancing the technical lexical competence of engineering students. The combination of corpus analysis and pedagogical application provides deeper and more meaningful acquisition of the terminology essential for professional communication in English. This approach encourages data-driven learning and fosters greater learner autonomy in vocabulary development. It also

supports the alignment of language instruction with real-world professional contexts and communication needs. Moreover, integrating CQL tools into ESP curricula contributes to a more modern, evidence-based, and student-centred language learning environment. Ultimately, the method equips educators with flexible resources for continuous curriculum improvement and evaluation. Future research could investigate the long-term impact of CQL-enhanced instruction on students' disciplinary writing and workplace communication.

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