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Based on the review by D.Radjabova, Associate Professor of TUIT named after Muhammad al Khwarizmi, PhD

DEVELOPING CRITICAL READING SKILLS OF ICT STUDENTS THROUGH CORPUS ANALYSIS TOOLS

Annotation

The development of critical reading skills has become increasingly important for students of information and communication technologies (ICT), who regularly encounter rapidly changing technical information through online news, professional websites, reports, blogs, and other digital sources. Traditional reading instruction, however, often concentrates on comprehension of explicit information, vocabulary and grammatical accuracy, while giving less attention to the evaluation of evidence, linguistic choices, authorial stance, source credibility, and competing interpretations. This article examines the pedagogical potential of corpus analysis tools, with particular attention to the News on the Web (NOW) Corpus, for developing critical reading skills among ICT students learning English.

Keywords: critical reading, ICT students, Corpus Linguistics, corpus analysis tools, NOW Corpus, Data-Driven Learning, ESP, concordance, collocation, digital literacy.

РАЗВИТИЕ НАВЫКОВ КРИТИЧЕСКОГО ЧТЕНИЯ У СТУДЕНТОВ ИНФОРМАЦИОННО-КОММУНИКАЦИОННЫХ ТЕХНОЛОГИЙ С ИСПОЛЬЗОВАНИЕМ ИНСТРУМЕНТОВ КОРПУСНОГО АНАЛИЗА

Аннотация

Развитие навыков критического чтения приобретает всё большее значение для студентов, обучающихся по направлениям информационно-коммуникационных технологий (ИКТ), которые регулярно сталкиваются с быстро меняющейся технической информацией, представленной в онлайн-новостях, на профессиональных веб-сайтах, в отчётах, блогах и других цифровых источниках. Однако традиционное обучение чтению часто сосредоточено на понимании эксплицитно представленной информации, усвоении лексики и обеспечении грамматической точности, уделяя недостаточное внимание оценке доказательств, языковому выбору, авторской позиции, достоверности источников и сопоставлению различных интерпретаций. В статье рассматривается педагогический потенциал инструментов корпусного анализа, прежде всего корпуса News on the Web (NOW), для развития навыков критического чтения у студентов ИКТ, изучающих английский язык.

Ключевые слова: критическое чтение, студенты ИКТ, корпусная лингвистика, инструменты корпусного анализа, корпус NOW, обучение на основе анализа данных, английский язык для специальных целей, конкорданс, коллокация, цифровая грамотность.

KORPUS TAHLILI VOSITALARI YORDAMIDA AXBOROT-KOMMUNIKATSIYA TEXNOLOGIYALARI YO‘NALISHI TALABALARINING TANQIDIY O‘QISH KO‘NIKMALARINI RIVOJLANTIRISH

Annotatsiya

Tanqidiy o‘qish ko‘nikmalarini rivojlantirish axborot-kommunikatsiya texnologiyalari (AKT) yo‘nalishida tahsil olayotgan talabalar uchun tobora muhim ahamiyat kasb etmoqda, chunki ular onlayn yangiliklar, professional veb-saytlar, hisobotlar, bloglar va boshqa raqamli manbalarda muntazam ravishda tez sur’atlarda yangilanib borayotgan texnik axborotga duch keladilar. Biroq o‘qishni an’anaviy tarzda o‘qitish ko‘pincha ochiq ifodalangan axborotni tushunish, lug‘at boyligini egallash va grammatik jihatdan to‘g‘ri foydalanishga e’tibor qaratib, dalillarni baholash, til vositalarini tanlash, muallif pozitsiyasi, manbaning ishonchliligi hamda turli talqinlarni qiyosiy tahlil qilish masalalariga yetarlicha e’tibor bermaydi. Mazkur maqolada ingliz tilini o‘rganayotgan AKT talabalarida tanqidiy o‘qish ko‘nikmalarini rivojlantirishda korpus tahlili vositalarining, xususan, News on the Web (NOW) korpusining pedagogik imkoniyatlari ko‘rib chiqiladi.

Kalit so‘zlar: tanqidiy o‘qish, AKT talabalari, til korpusi, korpus tahlili vositalari, NOW korpusi, ma’lumotlar tahliliga asoslangan ta’lim, konkordans, kollokatsiya, raqamli savodxonlik.

Introduction. The expansion of digital technologies has fundamentally changed the nature of reading in higher education. University students are no longer dependent on textbooks as their primary source of information. ICT students in particular encounter an enormous quantity of English-language material through technology news websites, software documentation, cybersecurity reports, professional blogs, research summaries, online magazines and social media. Consequently, successful reading in English requires more than understanding the literal meaning of a text. Students need to determine what is being claimed, what evidence is provided, how information is linguistically framed, whose perspective is represented, and whether the available evidence is sufficient to support the conclusion.

Critical reading is therefore particularly relevant to ICT education. A systematic review of critical reading research in higher education notes that university students increasingly need to select, analyse, evaluate and assess the information they

encounter in digitally mediated environments. The review also identifies a relative shortage of research on critical reading in STEM contexts, making the development of approaches specifically designed for technology-oriented students particularly important. For ICT students, this issue is especially significant because technological discourse is frequently characterized by rapid innovation, promotional language and competing claims. Consider expressions such as “AI-powered”, “secure cloud platform”, “revolutionary technology”, “next-generation solution”, “highly efficient system”, or “privacy-preserving technology”. Such expressions may appear factual, although they can simultaneously perform an evaluative or persuasive function. A reader who understands the vocabulary but does not examine how these expressions are distributed across texts may accept a technological claim without adequately questioning its evidence.

Corpus Linguistics offers a means of addressing this problem. A corpus does not simply provide additional examples of language; it enables learners to investigate patterns of actual language use through frequency information, concordance lines, collocations, keywords and diachronic comparisons. In Data-Driven Learning (DDL), learners examine corpus evidence and formulate conclusions from observed patterns rather than receiving every linguistic rule directly from the teacher. Boulton describes DDL as an approach in which learners consult corpus data to answer questions about language, thereby promoting language awareness and learner autonomy. More directly relevant to the present study, Yang and Mei investigated the development of students' cognitive skills through hands-on concordancing and developed a three-stage corpus-supported critical-reading scheme involving preparation, face-to-face corpus-based instruction and independent corpus-based work. Their findings indicate that corpus technology can facilitate reflection, judgment and critical engagement with texts.

The present article extends this line of research to the ESP context of ICT students. It proposes that corpus analysis tools can be used not merely to teach vocabulary or collocations but also to teach students “how to question technological discourse through linguistic evidence”.

The study adopts a corpus-informed pedagogical research design combining principles of Corpus Linguistics, Data-Driven Learning, English for Specific Purposes and critical reading. Rather than treating the corpus simply as a source of vocabulary examples, the proposed methodology uses corpus evidence as a basis for inquiry.

The analytical procedure consists of five interconnected stages:

1. “Noticing” – identifying an interesting linguistic feature in an ICT text;
2. “Verifying” – checking the feature against a larger body of authentic corpus evidence;
3. “Comparing” – examining frequencies, collocates, contexts or time periods;
4. “Interpreting” – determining what the linguistic pattern may indicate;
5. “Evaluating” – deciding whether the linguistic evidence adequately supports the interpretation.

This distinction is important because a corpus does not automatically produce a critical reader. The educational value emerges when students are required to formulate questions, examine evidence, compare alternatives and justify their conclusions. The principal corpus selected for the proposed model is the “News on the Web (NOW) Corpus”, developed by Mark Davies and hosted by English-Corpora.org.

NOW is particularly suitable for ICT students because it consists of contemporary web-based newspapers and magazines and is continuously expanding. The official corpus documentation describes NOW as a monitor corpus containing material from 2010 to the present. The corpus grows continuously as new online news material becomes available. According to the current English-Corpora.org data description, the downloadable NOW collection contains approximately “25.8 billion words in 43,659,237 texts”, collected from online magazines and newspapers in “20 English-speaking countries”. The corpus continues to expand, making it particularly valuable for investigating contemporary vocabulary and discourse.

These characteristics make NOW particularly relevant to ICT education for three reasons:

- ICT terminology changes rapidly;
- technological developments are extensively reported in online media;
- news discourse provides opportunities to analyse not only terminology but also evaluation, stance, framing and competing representations.

The corpus should therefore be regarded not as a dictionary but as a large empirical environment in which students can test linguistic and discourse-related hypotheses. Frequency enables students to determine how often a word or phrase occurs and, where appropriate, how its frequency changes over time. For example, the phrase “cloud computing” is considerably more informative for an ICT student when studied not only as a vocabulary item but also as a recurring lexical pattern in contemporary discourse.

Concordance lines display a search item within its surrounding linguistic context. Instead of reading one isolated sentence, students can examine dozens or hundreds of examples and identify recurrent patterns.

For example:

- cloud computing + benefits
- cloud computing + security
- cloud computing + costs
- cloud computing + services
- cloud computing + infrastructure

The pedagogical objective is not to memorize these combinations. Students are asked to investigate “which meanings and evaluative associations repeatedly occur around the term”.

Collocation analysis allows learners to identify words that occur with a target term more frequently than would be expected by chance. This is especially useful for investigating the evaluative dimension of ICT discourse.

For example, students may compare collocates associated with:

- AI
- artificial intelligence
- AI-powered
- AI-driven
- AI-generated

The comparison can reveal whether technological innovation is predominantly presented through positive, negative, neutral or problem-oriented vocabulary.

Keyword analysis compares a specialized set of texts with a reference corpus. For ICT students, a teacher can create a virtual corpus containing articles about cybersecurity, artificial intelligence or cloud technologies and compare it with a broader news corpus.

Students can then ask:

- Which words are unusually prominent in cybersecurity reporting?

This moves reading beyond the question “What does this article say?” towards:

- “What linguistic choices characterize this discourse as a whole?”

This is consistent with research on critical reading, which emphasizes the need for university students to evaluate information rather than simply understand it. This distinction is particularly important in technology-related discourse because many ICT products are marketed through positive evaluative language. Consequently, corpus analysis should not replace traditional source evaluation. Rather, it should complement it.

Concordance analysis is particularly valuable because it exposes repeated contexts that may remain invisible during linear reading. For example, instead of examining one sentence containing “data privacy”, students can examine a large collection of concordance lines and categorize the surrounding expressions:

- protect data privacy
- strengthen data privacy
- enhance data privacy

Students can then investigate the sources and genres associated with each pattern. This activity develops several dimensions of critical reading simultaneously:

1. lexical awareness;
2. contextual interpretation;
3. source awareness;
4. comparison;
5. inference;
6. evaluation.

Students conclude that the language provides evidence of a recurring positive discourse pattern, but does not independently prove the technological claim.

This is a much more sophisticated reading process than simply translating or summarizing the original sentence.

Corpus-based critical reading also contributes to discourse competence. Students learn to recognize how lexical choices construct relationships between:

- technology and society;
- innovation and progress;
- cybersecurity and risk;
- AI and human capability;
- data and privacy;
- automation and employment.

For ICT students, this is particularly valuable because professional communication requires an understanding not only of terminology but also of how technological information is presented to different audiences. A student who can identify that “AI revolutionizes healthcare” is rhetorically stronger than “AI is used in healthcare” is demonstrating an important aspect of discourse awareness.

The proposed approach has several implications for teaching English to ICT students. First, corpus analysis should be integrated with “ESP content”, rather than taught as a separate technical skill. Students do not need to become corpus linguists. They need to learn how to use selected corpus functions to investigate questions arising from ICT texts.

Second, the teacher should provide scaffolding. Direct access to billions of words can initially overwhelm B1-level learners. Therefore, the sequence should move from teacher-selected concordance lines to guided searches and finally to independent corpus investigation. The first is a corpus observation, the second is an interpretation, and the third requires additional evidence.

Corpus activities can be combined with pair and group work. One student can search frequency, another can analyse concordance lines, a third can classify collocations, and a fourth can evaluate the original source. The group must then produce a joint conclusion supported by evidence.

Finally, corpus analysis should be combined with conventional critical-reading strategies rather than replacing them. Source credibility, author expertise, publication context, evidence quality and logical reasoning remain essential.

The development of critical reading skills is particularly important for ICT students because their academic and professional environments are characterized by rapidly changing information, specialized terminology and extensive digital communication. Understanding an ICT text at the lexical level is no longer sufficient. Students need to investigate how technological information is constructed, evaluated and disseminated.

The analysis presented in this article demonstrates that corpus analysis tools can provide a productive bridge between language learning and critical reading. The NOW Corpus is particularly suitable because of its contemporary news content, extensive geographical coverage and continuously expanding database.

However, the most important pedagogical outcome is not students' ability to obtain numbers. It is their ability to “question what the numbers mean”. Frequency must be interpreted in relation to corpus size, genre, period and context. Concordance evidence must be examined rather than merely counted. Collocations should be interpreted as discourse patterns rather than automatically accepted as facts.

In this sense, corpus analysis tools have pedagogical value beyond vocabulary acquisition. They can contribute to the formation of autonomous, analytical and evidence-oriented readers who are better prepared to work with the large volume of English-language ICT information encountered in contemporary academic and professional environments. This position is consistent with recent research demonstrating that corpus technology can support critical reading and students' reflection and judgment. Future empirical research should test the proposed model with ICT students at different CEFR levels and compare corpus-supported critical reading with conventional reading instruction. Particular attention should be given to measurable changes in students' ability to identify claims, evaluate linguistic evidence, recognize discourse framing, distinguish fact from interpretation, and justify reading judgments with corpus evidence.

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