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*LAVRYSH Yuliana – Doctor of Pedagogical Sciences, Professor, Professor at the Department of English for Engineering, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, 37, Beresteyskiy ave., Kyiv, 03056, Ukraine*

**ORCID:** <https://orcid.org/0000-0001-7713-120X>

**Scopus Author ID:** 57215578367

*LYTOVCHENKO Iryna – Doctor of Pedagogical Sciences, Professor, Professor at the Department of English for Engineering, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, 37, Beresteyskiy ave., Kyiv, 03056, Ukraine*

**ORCID:** <https://orcid.org/0000-0002-8578-3985>

**Scopus Author ID:** 57224650022

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## EXPLORING UNIVERSAL DESIGN FOR LEARNING-BASED FORMATIVE ASSESSMENT STRATEGIES IN “ENGLISH FOR SPECIFIC PURPOSES” COURSE AT UNIVERSITY

**Summary.** *This article explores the challenges of traditional assessment methods in higher education, particularly in the context of English for Specific Purposes (ESP) courses. It highlights the limitations of standardized assessments that are often ill-suited to capture the diverse needs and abilities of today's learners. The Universal Design for Learning (UDL) framework is introduced as a powerful pedagogical approach that promotes inclusive education. UDL-based assessment strategies are discussed as transformative solutions to address the construct-irrelevant barriers in ESP courses, especially in reading and listening comprehension. The article emphasizes the importance of understanding the cognitive processes underlying comprehension and information processing. The article suggests a comprehensive and universal assessment strategy that includes the analysis of construct-irrelevant factors, the utilization of diverse assessment formats, and the design of assignments that evaluate a range of comprehension strategies. Practical examples, including the Directed Reading-Thinking Activity (DRTA), Gist Statements, and Open Mind Diagram, are provided to demonstrate how UDL principles can be applied effectively in ESP courses. By embracing UDL-based assessment strategies, educators can create a more inclusive and equitable learning environment that accommodates the cognitive diversity and abilities of all students. This approach not only improves assessment accuracy but also empowers learners to better demonstrate their true understanding of course materials. Ultimately, the article underscores the importance of evolving assessment practices to align with modern educational goals and foster meaningful learning experiences for diverse student populations.*

**Key words:** UDL, inclusivity, comprehension, learning barrier, construct relevance.

*ЛАВРИШ Юліана – доктор педагогічних наук, професор, професор кафедри англійської мови технічного спрямування, Національний технічний університет України «Київський політехнічний інститут імені Ігоря Сікорського», просп. Берестейський, 37, Київ, 03056, Україна*

**ORCID:** <https://orcid.org/0000-0001-7713-120X>

**Scopus Author ID:** 57215578367

*ЛИТОВЧЕНКО Ірина – доктор педагогічних наук, професор, професор кафедри англійської мови технічного спрямування, Національний технічний університет України «Київський політехнічний інститут імені Ігоря Сікорського», просп. Берестейський, 37, Київ, 03056, Україна*

**ORCID:** <https://orcid.org/0000-0002-8578-3985>

**Scopus Author ID:** 57224650022

**DOI:** <https://doi.org/10.24919/2413-2039.17/49.4>

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## ДОСЛІДЖЕННЯ СТРАТЕГІЙ ФОРМАТИВНОГО ОЦІНЮВАННЯ, ЗАСНОВАНИХ НА УНІВЕРСАЛЬНОМУ ДИЗАЙНІ НАВЧАННЯ, У КУРСІ «АНГЛІЙСЬКА ДЛЯ СПЕЦІАЛЬНИХ ЦІЛЕЙ» В УНІВЕРСИТЕТІ

**Анотація.** У статті розглядаються виклики, що стоять перед традиційними методами оцінювання вищої освіти, особливо у контексті курсів "Англійська для спеціальних цілей" (ESP). Зокрема, висвітлюються обмеження стандартизованих оцінок, які часто не враховують потреб та здібностей сучасних студентів. Універсальний дизайн навчання (UDL) представлений авторами як потужний педагогічний підхід, спрямований на підтримку інклюзивної освіти. Стаття аналізує стратегії оцінювання, засновані на UDL, як інноваційні рішення для подолання конструктор-нерелевантних бар'єрів у курсах ESP, зокрема оцінювання навичок читання та слухання. В ній наголошується на важливості розуміння когнітивних процесів, які лежать в основі сприйняття та обробки інформації. Стаття пропонує комплексний та універсальний підхід до оцінювання, який включає в себе аналіз конструктор-нерелевантних факторів, використання різноманітних форм оцінювання та розробку завдань, що оцінюють різні стратегії сприйняття. У статті подаються практичні приклади таких стратегій, включаючи спрямоване читання, мовну здогадку та діаграму відкритого сприйняття, щоб продемонструвати, як принципи UDL можуть бути успішно застосовані в курсах ESP. Завдяки використанню підходу оцінювання на основі UDL, викладачі мають можливість створити більш інклюзивне та справедливе навчальне середовище, яке враховує когнітивну різноманітність та здібності всіх студентів. Цей підхід не лише підвищує об'єктивність оцінювання, але й надає можливість студентам краще продемонструвати своє справжнє розуміння навчального матеріалу. У статті акцентується на важливості розвитку методів оцінювання, які відповідають сучасним освітнім цілям та сприяють змістовному навчанню для різноманітних груп студентів. UDL підхід сприяє справедливому та ефективному оцінюванню, спільно забезпечуючи успіх для різних студентів у сучасній вищій освіті.

**Ключові слова:** універсальний дизайн навчання, інклюзивність, сприйняття, бар'єри навчання, конструктор-релевантність.

**Introduction.** According to the challenges of the time, higher education is constantly transforming, thus, innovative concepts and methodologies are being integrated into the Ukrainian educational space. Universal Design for Learning (UDL) is a powerful and promising pedagogical approach that promotes inclusive education, allowing teachers to address the diverse needs of students and provide appropriate strategies and tools for learning. Every individual is unique, and diversity is the norm of contemporary societal behavior, reflecting a variety of cultures, ideas, and expectations.

The core idea of the UDL approach is to create an inclusive educational environment by using flexible multiple digital educational tools to present materials, engage students in the learning process, and provide opportunities for self-expression (Meyer et al., 2014). The relevance of the Universal Design for Learning (UDL) concept is driven by the implementation of global

educational initiatives such as inclusivity and sustainable development goals. Moreover, UDL contributes to enhancing digital educational competency for both teachers and students.

However, the implementation of the concept poses certain challenges for educators, especially those related to assessment, as UDL requires consideration of the diverse needs and capabilities of students. Traditional assessment methods may not align with UDL principles. For instance, standard timed tests or formal responses to questions may not be suitable for students with varying needs. Educators need to reconsider these methods and develop alternatives. When analyzing learning outcomes, the focus should shift towards the learning process and understanding how students learn. This necessitates a change in assessment methods, including evaluating the learning process, such as through portfolios, observations, or reflections. Inclusive assessment within the framework of UDL requires additional

resources and infrastructure, such as adapted testing environments or technical tools for students with special needs, creating financial and organizational challenges for schools and educational institutions. Therefore, it is necessary to implement modern assessment strategies that will support students' diversity and provide teachers with fair results.

**Analysis of recent publications.** Since the early 2000s, the role of students' engagement in the learning process has gained a lot of academic attention since there is a direct correlation between students' academic achievements and their engagement in learning (Finn & Zimmer, 2012). The concept of engagement is reflected through emotional, cognitive, and behavioral constituents. The efficient combination of them is reflected in the Universal Design for Learning (UDL) approach which is aimed at improving and optimizing teaching and learning for all learners by providing equal chances to succeed, offering flexibility in interaction with educational materials and self-expression, making teaching relevant to sustain motivation. The scientific background of the approach is nested in research in cognitive neuroscience that impacts the design of flexible learning environments adjusted to individual learning differences (Meyer et al., 2014). The approach is based on three key types of neurological networks that stimulate learning:

- affective network (incoming information affects intrinsic motivation, emotions, and self-regulation to launch the learning process);
- recognition network (selection and interpretation of the information, meaning construction);
- strategic network (responses, communication, and actions to plan the individual learning trajectory).

The UDL approach was designed to recognize and eliminate learning barriers with the following application of educational practices that tolerate learners' diversity by providing flexible educational strategies, accessible materials, and assessments. The flexibility is built through UDL principles aligned to three networks: multiple means of engagement, multiple means of representation, and multiple means of action and expression (Rogers-Shaw et al., 2017).

The transformation of traditional assessment to inclusive, accessible, sociocultural, and sociocognitive has been realized under the influence of the UDL framework. The concept of accessibility for assessment was studied by Katranci and Melanlioglu (2022) and researchers claim that an educational product (i.e. a test, an instruction) is

accessible when it eliminates barriers and can be equally used by diverse students. Meyer, Rose, and Gordon (2014) developed criteria for efficient UDL assessment: it should be ongoing and flexible with a focus on the learner's progress; measure a product as well as progress; demonstrate construct relevance; sustain engagement. Researchers also claim that flexible and customizable assessments intensify their relevance for students, thus, increasing motivation and persistence levels.

In order to implement UDL-based assessment in a proper way and provide the highest level of universality, teachers should keep in mind its specific features outlined by researchers (Abell, Jung & Taylor, 2011; Capp, 2017): elimination of barriers to engagement and expression (inclusiveness, authenticity, accessibility, relevance and reduced anxiety); activation of previous knowledge; focus on weaknesses and uncertainties in assignment instructions, not on students' personal weakness; interactive and multimodal design of assessment; anticipation of learner variability; tolerance to mistakes and orientation on success; prioritizing of formative assessment; critical feedback. Thoughtful assessment design and implementation are crucial for effective teaching and learning, and universal design for learning equip educators with a framework and tools for accomplishing it.

**The purpose** of the study is to present UDL-based formative assessment strategies implemented in ESP course.

**Presentation of the main material.** The necessity to assess academic achievement is an integral part of an educational process but may cause uncertainty or barriers for many students. Academic standards and tests are restricted, yet there are flexible, inclusive, and alternative educational approaches to their transformation and adaptation that make learning more engaging and meaningful for all students. The greater the variability of assessment practices, the more reasonable and objective the assessment is for all students. The key challenges are to identify assessment barriers and find practices that eliminate those barriers.

Traditional assessment practices are aligned only with academic standards and do not correspond to the needs of all students because it is considered a standard to measure human potential concerning statistical averages. Educators have been creating instructions and assessments for an "average student" using standardized sets of activities, sets of tools, and assessment

criteria. Students do not even have alternatives to demonstrate what they know. It creates a validity concern of such practices that can be solved by the integration of UDL-based assessment that responds to the validity concern by designing tools that equitably assess all students despite their variable characteristics. Another issue of standardized testing is that its content does not always correspond to the domain or construct that was intended to be assessed. Such assessment is regarded as construct-irrelevant (Li, 2013) and causes barriers for students. Construct-irrelevant barriers might be a requirement to read fluently, time management, cognitive characteristics, and biased oral or written instructions. In order to minimize those barriers and reduce the level of subjectivity, it is critical to design tasks understandable for all students, so all students could comprehend the instruction, choose options for knowledge demonstration and be in equal time and effort conditions. The elimination of construct-irrelevant barriers in combination with the application of multiple means for students' engagement in the assessment process reduces the main barrier of assessment anxiety and gives educators more accurate results of what learners actually learned and what they struggle with in terms of an exact construct (knowledge, skill or ability). Thus, effective UDL-based assessments should be flexible, construct-relevant, engaging, focused on the learner's progress, and measure both product and process (Tai et al., 2021).

In terms of reading and listening comprehension in ESP course, understanding the construct relevance of this skill is important for developing assessments that accurately measure these constructs in a given context and promote inclusive assessment practices. For example, a teacher assigns a reading comprehension task that involves reading a complex technical article on a topic related to engineering. However, the assessment includes questions that are not directly related to the content of the article or questions that require knowledge of idiomatic expressions that are not relevant to the content of the article. Such types of questions are regarded as construct-irrelevant because they do not measure the intended construct of reading comprehension. Instead, they examine unrelated constructs like general knowledge, cultural background, or language competency, which may disadvantage some students and produce unreliable assessment findings. The accuracy and fairness of assessments may be achieved by removing

construct-irrelevant barriers and concentrating on measures that precisely assess the targeted construct of reading or listening comprehension. Moreover, such strategy allows teachers to meet the different needs of their students.

An efficient construct relevance analysis for foreign language comprehension assessment requires understanding of the processes of information processing and comprehension itself. Kintsch's (2005) Construction-Integration model provides us with necessary knowledge. According to this model, comprehension involves two processes: construction and integration. Creating a mental image of the message is referred to as construction. While reading or listening we infer meaning from the text using our prior knowledge and experiences. This procedure entails identifying important concepts and ideas, relating them to what is already known, and building a mental model of the text. Integration refers to the process of integrating the constructed mental representation with our existing knowledge. This process involves resolving inconsistencies and contradictions between the new text and our existing knowledge, and updating our mental model accordingly. The Construction-Integration paradigm also highlights how crucial working memory and attention are to comprehension. The concept proposes that working memory is required to hold and manipulate information during the building and integration processes, while attention is required to selectively focus on pertinent information in the text. The UDL approach accepts Construction-Integration model ideas and expands them by adding such checkpoints as highlighting patterns, critical features, big ideas, and relationships; guiding information processing and visualization; maximizing transfer and generalization (CAST, 2020). These additional points reflect the objective of modern education which is not to simply provide access to information, but rather teach students how to transform the accessible information into useful knowledge. Such transformation is important for future professional decision-making processes, therefore, the issue of comprehension level is still topical for students of universities. Hence, the development of information processing skills (new information integration, strategic selection and categorization, active memorization) contributes to the comprehension skills mastering.

Traditional ESP assessment assignments are often multi focused and cognitively overloaded. Students have to listen to the text and simultaneously choose correct words, or complete a table.

It makes comprehension cognitively inaccessible when it necessitates the ability to choose and prioritize among numerous components or concepts and there are no alternatives for students with varying degrees of that ability. All students differ in their abilities to process information and access to prior knowledge to assimilate new information. We consider that the most neglected differentiation criterion is cognitive diversity which implies differences in information processing and ways of solution searching. Avoiding the acceptance of this diversity, creates more construct irrelevant barriers. To convert information into practical knowledge, it's important to teach students how to utilize cognitive strategies and skills of information processing and eliminate barriers that prevent efficient cognitive processes. One of the most effective ways to increase accessibility of information is by giving clear indicators or tips that help people focus on the most important aspects and ignore the less important ones. The cognitive strategies involve choosing and manipulating information in ways that make it easier to understand, organize, prioritize, put in context, and remember. Therefore, well-designed construct relevant materials can serve as personalized, scaffoldings learning tools to help students with varying abilities use these strategies effectively.

The analysis of our practical experience indicates that guiding the information processing, integrating information organizing tools, and clarifying and separating instructions significantly affect listening comprehension skills. It means that construct-irrelevant factors such as topic unawareness, narrow vocabulary, multitasking, and cognitive overload influence test performance and compromise the validity of tasks for comprehension assessment. The results of the study are in line with Rukthong's study (2013) which stated that the elimination of cognitive and perception barriers enhances the ability to use linguistic knowledge and inferencing skills while information comprehension. The study highlights the importance of considering these factors when designing construct-relevant assessments of reading and listening comprehension.

The existing methods for evaluating comprehension frequently place an increased focus on the student's ability to respond to questions about a text rather than the wider range of abilities and knowledge needed for comprehension. Our observations evidence that this restricted focus may result in underestimation of cognitive diversity, development of construct irrelevance,

incomplete and unfair assessments of reading or listening comprehension and students' disabilities to express their achievements. To address these issues, we would suggest a more comprehensive and universal strategy to assess comprehension. This strategy involves construct-irrelevant factors analysis, application of a range of assessment formats and designing of assignments for evaluating a variety of comprehension strategies so that students could demonstrate the full range of their skills, including vocabulary, literal comprehension, infernal connections, critical comprehension, integration of new and background knowledge, as well as metacognitive techniques to monitor and regulate the process of comprehension. Overall, eliminating construct-irrelevant barriers in formative assessment can have a positive impact on learners' reading and listening comprehension in higher education ESP courses, by allowing them to better demonstrate their true understanding of the course material and receive targeted feedback and support to improve in areas where they may be struggling.

As an example of the strategies on reading comprehension training we would like to recommend Directed Reading-Thinking Activity (DRTA), Gist Statements and Open Mind Diagram. We applied them while working on assignments for reading comprehension. The results of assessment demonstrate that these strategies improved reading comprehension. DRTA strategy matches UDL checkpoints such as highlight patterns, critical features, big ideas, and relationships, guide information processing and visualization and enhance capacity for monitoring progress. Before reading, teachers encourage students to make predictions about the text using the text features, such as the title and any accompanying pictures. As they read, students pause at specific sections to reflect on what they have read, modify their predictions based on evidence from the text, and think about the information. An online graphic organizer or mind mapping tool can be provided to guide students through the DRTA process. The organizer contains a space for the writing the first prediction, for writing questions they might have about the text, and finally for revising predictions.

Gist Statement reading comprehension technique is used to summarize a text's primary point in a limited number of words assisting students in understanding the distinction between a major idea and a summary. It supports such UDL checkpoints as comprehension: highlight patterns, critical features, big ideas, and relationships and executive functions: support planning and

strategy development. Having read a text, students summarize the information and answer the "Five W's and One H" regarding the text's content (i.e., who, what, when, where, why, and how) and share their Gist.

The Open Mind Diagram is a summarizing technique where students visually represent information on a topic by adding symbols, words, quotes, or phrases. This strategy corresponds such UDL checkpoints as: language and symbols: illustrate through multiple media, physical action: vary the methods for response and navigation and executive functions: support planning and strategy development. A teacher sets the parameters and expectations of the activity, such as adding a certain number of images, symbols, words or quotes. The activity is framed as a planning step before writing a summary or extended response. Unlike other summarizing techniques, the Open Mind Diagram is unique in that it allows students to retain instructional content by visually brainstorming representations. Technology, incorporated into the creation of Open Mind Diagrams, mainly include online graphic organizers and mind mapping tools. Additionally, Open Mind Diagrams can be used as an alternative assessment method to traditional exams or written responses. This allows students to further research and add imagery to their diagrams, providing a valuable input to demonstrate their understanding of the topic.

**Conclusions.** In conclusion, the assessment of academic achievement is an essential component

of education, but it often presents challenges and barriers for students. UDL approach offers a promising solution to these challenges. By embracing UDL-based assessment strategies, educators can create more flexible, inclusive, and construct-relevant assessments that cater to the individual differences in students' cognitive processing, prior knowledge, and abilities. These assessments aim to reduce cognitive overload, enhance comprehension skills, and provide a fair and accurate measure of what students have truly learned. As demonstrated through practical examples such as the Directed Reading-Thinking Activity, Gist Statements, and Open Mind Diagram, these strategies align with UDL principles and can significantly enhance reading comprehension in ESP courses. By implementing these techniques, educators can create a more inclusive and effective learning environment that supports diverse learners in higher education. Future studies in the field of inclusive assessment in ESP courses may be expanded to gather students' perspectives on UDL-based assessments. Understand how these assessments impact their learning experiences, motivation, and self-efficacy. In summary, the adoption of UDL-based formative assessment strategies holds great potential for transforming higher education in Ukraine and beyond. These strategies not only improve assessment accuracy but also promote a more inclusive and engaging learning experience for all students, regardless of their cognitive diversity or abilities.

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