Olena Vovk[*]
Bohdan Khmelnytsky[**]

TEACHING LISTENING TO UNIVERSITY STUDENTS: METHODOLOGICAL AND COGNITIVE DIMENSION

KSZTAŁCENIE UMIEJĘTNOSCI SŁUCHANIA U STUDENTÓW UNIWERSYTETU: WYMIAR METODOLOGICZNY I POZNAWCZY

This article aims at studying the process of listening comprehension (LC) from a cognitive perspective. The notions of general and cognitive competences are approached and analyzed in relation to human cognition. The paper also broaches the matter of listening comprehension competence (LCC) as students' integrated listening ability. It is characterized and specified within the framework of a cognitive paradigm and is investigated in correlation with cognitive competence. Also, the constituents and levels of LCC are singled out and discussed.

In a modern educational process substantial attention is paid to a cognitive side of foreign language (FL) acquisition with a special emphasis on developing auditory comprehension of students. The rationale of this approach is given in Yu. Plotinskiy's study[1] where he states that within a cognitive paradigm instructing is oriented towards perceiving and conceptualizing the events of real life, accounting for cognitive mechanisms which enable an individual to adequately adjust to reality. So, it is apparent that a cognitive framework of developing LCC is equally conducive to acquiring general competence, which is defined as specifically subjective knowledge, allowing a person to effectively resolve diversified problems in a particular domain. Such a definition emphasizes the significant role of general competence in mastering a FL by university students, hence it cannot be underestimated.

With this in mind, it can be surmised that general competence also comprises cognitive competence as its constituent which is a target of a modern academic process. Conventionally, it is investigated from different angles. For one thing, cognitive competence includes critical and creative thinking, though it is not limited only to these types. Specifically, critical thinking refers to reasoning and

[*] Doctor of Pedagogy, Associate Professor, Professor of the Chair of English Philology, Training and Scientific Institute of Foreign Languages, Bohdan Khmelnytsky National University at Cherkasy, Ukraine.

[**] Doctor of Pedagogy, Associate Professor, Professor of the Chair of English Philology, Training and Scientific Institute of Foreign Languages, Bohdan Khmelnytsky National University at Cherkasy, Ukraine.

[1] Ю. Плотинский, *Модели социальных процессов*, Логос, Москва 2001, p. 116.

making inferences, whereas creative thinking means evaluating multiple ideas and alternatives, generating novel and practical thoughts. For another thing, cognitive competence implies general abilities, revealed in correlation between human actions and problem-solving tasks which are accomplished through personal attainments[2].

On balance, it may be expected that cognitive competence embraces three interrelated components: cognitive structures, cognitive processes, and overt behaviors. It is plausible to assume, therefore, that among those components the most important and relevant for developing LCC are: metacognition, cognitive styles, cognitive skills, reasoning, and information processing. These processes can affect subsequent „behaviors" – mental performance, problem solving, and decision making. In its turn the efficiency of „behaviors" to a great extent depends on „cognitive structures" – self-schemata and goal orientation. However, the results of these operations may vary, since people differ in their cognitive development and the capability to manipulate mental processes utilizing cognitive styles and applying congruent thinking skills[3].

To have a better grasp of what is involved in a listening process and to explore the extent of relations between cognitive competence and LCC, it is worthwhile to provide an integrated overview of it. In particular, it is evident that LCC is the ability to listen to authentic texts of various genres and types with different levels of understanding, moreover, this ability presupposes perception and comprehension of alien speech in natural or/and artificial. Accordingly, LCC encompasses the skills of aural perception of both foreign discourse, based on the academic material with a definite percentage of unknown vocabulary, and educational authentic texts with different degrees of perception. Thus, it can be concluded that LCC is a component of an individual's cognitive activity. This activity implies cognition, which justifies the necessity to characterize it per se.

According to U. Neisser[4], cognition is the totality of processes, which enable a person to modify, reduce, develop, memorize, retrieve and utilize the incoming information. These processes are interrelated with an individual's surroundings and are looked upon as socially dependent on a certain context. Cognition enclasps the processes of obtaining knowledge and experience, as well as achieving certain results. It primarily means the unity of psychological and mental operations related to perception of the world, observation of the environment, categorization, etc. These processes facilitate information processing and set the ground for rational cognitive experience of a person that, in its turn, is externalized in language.

Consequently, cognition and language are interdependent and interrelated processes; furthermore, the incoming cognitive information may be perceived via linguistic means. For that reason, an individual's cognitive abilities are likely to

[2] О. Вовк, *Методика навчання англійської мови: комунікативно-когнітивний підхід*, Вид. Ю. Чабаненко, Черкаси 2011, p. 222.

[3] P. Fry, *Fostering Children's Cognitive Competence through Mediated Learning Experiences: Frontiers and Futures*, Springfield 1991, p. 297.

[4] U. Neisser, *Two Themes in the Study of Cognition*, Cognition: Conceptual and Methodological Issues, Washington 1992, p. 334.

be demonstrated in the LC activity, which includes problem solving skills, reasoning, deduction, inference, memorization, information structuring and processing, etc. Albeit, today cognition is understood considerably wider than just operations of data processing due to its reference to human ontogenesis and socio-cultural factors[5]. With regard to this, it may be inferred that cognitive competence correlates with LCC as aural competence is not just hearing the incoming message, but simultaneous deciphering and retaining in mind the chunks of the received information. So, from a cognitive angle LC is related to cognitive processes and operations which set the ground for comprehending and utilizing spoken speech. Thus, it is reasonable to presume that the cognitive input is significant for LC. Subsequently, LCC is based on the abilities to acquire, process, structure, retain, infer and apply knowledge.

Specifying the elements that constitute LCC it seems plausible to single out the following: knowledge, skills, habits and relevant abilities[6]. Since they constitute an integrated auditory skill they require more detailed specification. The first constituent of LCC embraces procedural knowledge – awareness of linguistic and extralinguistic behavior in the process of communication; and declarative knowledge – linguistic awareness of phonemes, lexical units, and grammatical structures, as well as socio-cultural information.

The level of LCC is also fostered by its second constituent that may be represented by a set language, instructional, intellectual, organizational and compensational skills. Language skills are expressed in the ability to identify in the text the core information and foresee its content; to focus on the key points of the input dismissing minor ones; to grasp the message using a contextual guessing. Intellectual skills feature critical reasoning, the combinability of mnemonic and logical-notional activities, and the ability to classify and categorize the incoming information. Instructional skills comprise the abilities to systematize the information, define the aim of perspective work, handle already acquired knowledge, and make use of electronic educational facilities. Organizational skills pose the proficiency in autonomous learning, self-discipline, individual work planning, etc. The employing of a contextual guessing and deduction, paralinguistic means of communication and disregarding the unessential material – all these relate to compensational skills.

Equally important for acquiring LCC is its third constituent – language habits which include: phonetic habits of receiving and distinguishing in the speech flow separate sounds and their combinations, as well as intonation patterns; lexical habits of differentiating sound patterns of lexical units and their understanding; grammatical habits of aural identifying grammatical forms and forecasting syntactic constructions.

The final constituent of LCC to be mentioned here is cognitive and communicative abilities. They comprise self-discipline, commitment, observation, perseverance,

[5] R. Carston, *Language and Cognition, Language: Psychological and Biological Aspects*, Cambridge (Mass.) 1998, p. 41.

[6] O. Вовк, op. cit., p. 222–223.

determination, speech culture, veracity, tactfulness, the ability to adequately influence the listener and exhibit respect to him despite personal attitude, etc.

With regard to the aforementioned, it may be inferred that **listening comprehension competence** is an integrated ability to simultaneously perceive, process, and adequately comprehend spoken speech in accordance with the speaker's intention. In the same fashion, such interpretation of LC illustrates that the nature of it is primarily cognitive.

It might be expected that developing LCC is a gradual process, dependent on several factors, specifically, which are: a) the conditions of receiving the message which include the tempo of presenting the message, the number of deliveries and pauses made in the text, its size, complexity, and duration; b) individual peculiarities of the listener: the ability to respond to signals of aural communication (pauses, logical stresses, rhetorical questions, connecting phrases, etc.); c) the capability to switch from one activity to another; the faculty to grasp the topic of the message and relate it to a broader context; the level of one's focus on the aural message for a certain period of time; the mechanisms of developed probabilistic prognosis, aural memory, and language hearing; d) linguistic properties of the audio message: phonetic, lexical and grammatical difficulties which a listener has to overcome in the process of LC.

Despite the undeniable recognition of the interplay of listening and cognition processes, the issue of teaching LC employing conceptual modeling at present escapes proper theoretical attention. Cognitive science investigates the methods of receiving, processing, storing, retrieving and using the information. Its aim is to explain the regularities of language and speech in relation to the human mind. Moreover, cognitive science provides the ways of systematizing information, conceptual modeling being one of them. So, conceptual modeling is a natural cognitive instrument employed by the human mind in information processing. A conceptual model can be either mono-layered (the information is modeled on one conceptual level), or multi-layered (the information is modeled on several conceptual levels). There exists a hierarchy of these conceptual levels[7]: 1. A conceptual sphere – the total information space of a studied topic. 2. A domain – an information focus within the conceptual sphere. Domains are subdivided into basic and nonbasic. Basic domains are cognitively irreducible, neither derivable from nor analyzable into other conceptions. Most domains, however, are nonbasic, i.e. they are cognitively reducible, derivable from and analyzable into other conceptions. Nonbasic domains vary in their degree of conceptual complexity. To some extent they also arrange themselves in hierarchies, so that a conception at a given level presupposes and incorporates one or more lower-level conceptions. 3. A parcel – a domain's informational focus expressed mainly by synonyms and antonyms. 4. A concept – a parcel's constituent notion expressed by a lexical unit.

Thus, at this stage it is necessary to spell out the essence of structures which represent knowledge, specifically conceptual structures, or models. The basic information structures are a proposition and a frame. A proposition is the most

[7] R. Langacker, *Cognitive Grammar. A Basic Introduction*, New York 2008, p. 112.

primitive conceptual structure, consisting of the logical subject and the logical predicate. The combination of several propositions results in the appearance of a frame. Frame semantics defines a frame as a system of categories structured in accordance with some motivating context. The very foundation of the human information system is structured by several highly abstract basic frames, where the most fundamental categories of thought are arranged according to the way things of the experiential world are perceived. Actually, the analysis of multiple lexical, derivational, and syntactic data makes it possible to presume that the basic frames are five in number. These frames – the Thing Frame, the Action Frame, the Possession Frame, the Identification Frame, and the Comparison Frame – include the limited number of most abstract propositional schemas the type of which is defined by the frame they belong to[8].

When considering the types of relations between the frame constituents, two kinds of frames may be differentiated: a matrix (where the relations between the slots remain unmarked), and a network (the relations are marked). A matrix (I-map) and a network (a cognitive map, a semantic network, a conceptual graph) are the conceptual models, which determine the ontology type. As knowledge engineering puts it, ontology is the conceptual structure of a particular notion, or field. Anyway, in the process of FL acquisition the notion of ontology correlates with the studied topic. Conceptual networks are built due to definite cognitive operations which can be applied to the conceptual networks, particularly: specification (information detalization); focusing (the choice of the foreground or background context); prominence (giving salience to the particular kind of information); perspectivization (determining the succession of information fragments). These operations assign the probable approaches to the analysis of the topic under study[9].

Conceptual modeling is applied for structuring the information received from one or several sources. In either case, when listening to an audio text, a student is supposed to stick to the following procedure[10]: 1) to single out the information focus of the topic; 2) to provide the attribute to the information focus; 3) to establish the relations between the information focus and their attributes (according to the basic propositional schemas); 4) to design a conceptual map (a network or a matrix) and complement it with the cognitive operations.

On balance, it is clearly understood that teaching a FL is drastically enhanced provided the findings of cognitive science are employed. Apparently, conceptual modeling can become an effective tool which helps university students to organize the incoming information and to successfully gain knowledge in a particular field. The techniques of conceptual modeling in combination with the conventional ones may become a beneficial tool for the educational process, specifically for acquiring LC skills.

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[8] С. Жаботинская, *Principles of Building Conceptual Models for Thesaurus Dictionaries*, Cognition, communication, discourse: international on-line journal, 2010, № 1, p. 80.

[9] R. Langacker, *Cognitive Grammar. A Basic Introduction*, New York 2008, p. 100.

[10] С. Задворна, *Підготовка студентів немовних спеціальностей до структурування навчальної інформації засобами концептуального моделювання*, Автореф. дис., Черкаси 2013, p. 8.

In conclusion, this paper has shown the necessity to investigate LC in terms of the communicative-cognitive approach, since aural comprehension is equally based on both listening (speech activity) and cognition (cognitive activity). These processes cannot be separated, for they are complementary, thus influencing and determining each other. The efficiency of LC depends on the level of acquired LCC, the main constituents of which are diversified types of knowledge, skills, habits, and relevant abilities. The level of LCC is dependent on definite factors. As a multifaceted phenomenon, LCC may be supported by different cognitive mechanisms which stipulate successful comprehension of the incoming message. The impact of cognitive activity on the listening ability is significant, that is why the matter of teaching students to process auditory information employing the means of cognitive science has been broached.

The devising of a comprehensible methodology which encompasses the relevant methods and techniques of creating conceptual models in the process of LCC acquisition may be regarded as a perspective of this article.

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SUMMARY
The article focuses on the problem of teaching listening to students of linguistic fields. Listening comprehension is addressed from the perspective of cognitive science, providing the evidence that language and thought are interrelated and consequently cannot be viewed separately. Accordingly, the notions of cognition, general competence, cognitive competence and listening comprehension competence are explored and clarified. It is revealed that listening comprehension competence embraces a number of constituents which are: procedural and declarative knowledge; language, instructional, intellectual, organizational, and compensational skills; language habits and, finally, cognitive and communicative abilities. Hence, listening comprehension competence is looked upon as an integrated ability to adequately understand and adapt spoken speech.
Similarly, in the paper the basic notions of cognitive science are elaborated (a conceptual sphere, a domain, a parcel, a concept, a proposition, a frame, a network, and an ontology). The attempt is made to employ the mechanisms of conceptual modeling in the process of developing listening comprehension competence.

Keywords: listening comprehension, cognition, listening comprehension competence, cognitive science, conceptual modeling.

STRESZCZENIE
Artykuł skupia się na problemie nauczaniu słuchania studentów kierunków językowych. Rozumienie ze słuchu rozpatrywane jest z punktu widzenia kognitywistyki, dostarczając dowodów, że język i myślenie są ze sobą powiązane, więc, nie mogą być postrzegane oddzielnie. W związku z tym pojęcia poznania, kompetencji ogólnej, kompetencji poznawczej i kompetencji rozumienia ze słuchu są tu zbadane i wyjaśnione. Okazuje się, że kompetencja rozumienia ze słuchu obejmuje szereg składników, a mianowicie jej tworzą: wiedza proceduralna i deklaratywna; język, umiejętności instruktażowe, intelektualne, organizacyjne i kompensacyjne; nawyki językowe i, wreszcie, zdolności poznawcze i komunikacyjne. Stąd, kompetencja rozumienia ze słuchu jest postrzegana jako zintegrowana zdolność do właściwego zrozumienia i dostosowania języka mówionego.
W artykule tym przedstawiono podstawowe pojęcia kognitywistyki (koncepcyjna sfera, domen, pole, koncept, propozycja, frejm, sieć i ontologia). Dokonano tu próby uruchomienia mechanizmu konceptualnego modelowania w procesie rozwijania kompetencji rozumienia ze słuchu.

Słowa kluczowe: rozumienie ze słuchu, poznanie, kompetencja rozumienia ze słuchu, kognitywistyka, koncepcyjne modelowanie.