

APPLYING SCHEMA THEORY TO TEACHING FOREIGN LANGUAGE COMPREHENSION

ТЕОРІЯ СХЕМ У НАВЧАННІ ІНОЗЕМНОЇ МОВИ

The article considers the concept of schema theory as teaching methodology in language learning and teaching foreign languages. Schema theory emphasizes the importance of general knowledge and concepts that will help forming schemata. The term schema refers to a mental framework humans use to represent and organize remembered information. It is defined as a data structure for representing generic concepts stored in memory. This approach to learning examines how individuals create relationships between concepts. It is important for educators to understand the learning process, to emphasize the role of schema theory in student's thinking and to provide relevant teaching methods to achieve academic success.

Schema theory has a profound impact on reading and grammar comprehension research. The article presents some findings suggesting the profound impact of schema theory as language teaching approach on reading and grammar comprehension research. Experience shows that one of the challenges the students face is grammar comprehension. Schema facilitates learning of grammar structures and provides current reading practices. The current challenge for researchers and teachers is to apply effectively teaching techniques based on schema theory in university setting for developing academic reading skills and practicing grammar structures. Focusing on the importance of the effects of language complexity and the background knowledge of a text on reading comprehension and teaching grammar, structures, the current research suggests language teaching methodology to help learners develop new schemata and establish connection between them.

The article attempts to interpret and synthesize the relevant major linguistic sources for different grammatical structures in a comprehensible form and gives a number of practical suggestions and useful resources for fostering students involvement and proficiency level and their experience with grammar structures.

In the process of researching, developing and testing the materials the students explore their profession and gain significant work experience in their fields.

Key words: *schema theory, language teaching methodology, reading comprehension, grammar, linguistic competence.*

У статті розглядаються методичні засади застосування теорії схем в навчальній діяль-

ності і практиці викладання іноземних мов. Автори статті підкреслюють важливість теорії схем у формування загальних знань і понятійних категорій, розглядаючи схему як систему організації та сприйняття нової інформації.

У психології та когнітивній науці схема описує модель думки або поведінки, яка організовує категорії інформації та взаємозв'язки між ними. Автори статті поділяють точку зору видатних науковців і освітян щодо можливості ефективного застосування теорії схем у вивченні іноземної мови і впровадженні релевантних методів навчання в навчальному процесі. Головне завдання викладачів полягає в тому, щоб знайти успішний спосіб застосування навчальних методик на основі теорії схем в освітньому середовищі.

Аналіз відповідних лінгвістичних досліджень щодо виявлення граматичних аспектів сприяє правильному вибору граматичного матеріалу з метою формування нових знань з лексики і граматики для досягнення високого рівня граматичної компетенції.

Автори зосереджуються на практичному використанні методик теорії схем для впорядкування поточних знань та збереження основи для подальшого розуміння інформації. Особливу увагу приділено методично-доцільному використанню теорії схем у навчальному читанні як виду мовленнєвої діяльності на заняттях іноземної мови, зокрема на етапі – pre-reading. Враховуючи складність формування навичок і умінь читання фахових текстів, засвоєння певних граматичних явищ і конструкцій, пропонується низка практичних рекомендацій для формування мовленнєвої компетентності студентів, поглиблення знань з граматики англійської мови, покращення професійних умінь і навичок іншомовного спілкування. Запропонована методика вважається перспективною в аспекті професійної іншомовної підготовки студентів. Застосування сучасних методологічних підходів на основі теорії схем надає можливість викладачам англійської мови підвищувати ефективність навчального процесу і допомагати студентам розкрити свій фаховий і мовленнєвий потенціал.

Ключові слова: *теорія схем, методика викладання мови, розуміння читання, граматики, мовна компетенція.*

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Target setting. The essence of schema-focused relationship problems in education is to acquire methods of gaining new knowledge independently based on application of existing knowledge and skills. The major purpose of teaching problem – solving skills based on schema theory is to enable students to solve various types of tasks within an academic discipline.

The approach is particularly productive in teaching foreign languages. Teachers of English have great opportunities to contribute to this process and help students become better problem solvers of discipline-related problems.

Actual scientific researches and issues analysis. The concept of schema theory, one of the cognitive learning theories, being introduced by Frederic Bartlett and developed by David Rumelhart and Richard Anderson, has always been recognized as an important factor in teaching and learning [7, p. 34]. Many researchers have examined the role schemata play in language comprehension. R.Anderson, an American educational psychologist, used schema theory in an educational setting from a reading perspective [1, p. 24]. Positive effect of schema based instructions on students' grammar and vocabulary learning

strategies was confirmed by the results of numerous studies and research application of schema theory in the classroom. Focusing the importance of the effects of language complexity and the background knowledge of a text on reading comprehension and teaching grammar, structures, the current research suggests language teaching methodology to help learners develop new schemata and establish connection between them.

Human information-processing theorists believe that the analogy of computer is a useful model for understanding the way human being think and process information. Psychologists formulated a linear model of human information processing in which information flows through three structural features: the sensory register, short-term memory and long-term memory [4, p. 92]. Different people process information in different ways. Different cognitive styles determine the quality and the success of the processed information. The information-processing model is important for educators to understand the learning process, to emphasize the role of schema theory in student's thinking and to provide relevant teaching methods to achieve academic success.

Uninvestigated parts of general matters defining. Schema theory is considered to be one of the ways to explain how information is stored in long-term memory. A schema is an abstract representation of information that contains a variety of details such as characteristics and examples. It is a system of relationships between concepts, a body of information related to a specific concept. Grammar instruction occupies a prominent role in various language teaching methods and approaches. The current challenge for researchers and teachers is to find a way to integrate grammar instruction and grammar practice with a communicative approach to teaching. Being proficient in a language implies knowing the grammatical structures and how to convey an appropriate message according to the situation, and to arrange language to convey a message. The teacher should make sure that students recall old information before teaching them related new one. For example, before teaching the application of automatic machine tools in mechanical engineering production process the teacher should ask students about the conventional machine tools such as lathes, milling, shaping, grinding machines, their use and features. The questions will activate students exiting schemata and help students to relate new information to what they already point out the relationships between new and known information. Various methods have been proposed for dealing with this issue including techniques and resources in teaching grammar, teaching language forms and functions, schema-focused instructions for reading comprehension. The task of the teacher is to provide students with appropriate background knowledge and motivate them to activate their existing schemata.

Research objective. The study intends to find out whether teaching techniques based on schema theory can be applied effectively in university setting for developing academic reading skills and practicing grammar structures. Teachers use schemata to explain how students represent knowledge, make references about new information, perform memory searches and summarize information, make the association between new and known information.

The statement of basic materials. Schema theory has a profound impact on reading and grammar comprehension research. Schemata theory and practice will enable prospective and practicing teachers of English to better understand the grammar of the language and provide them with ideas for effectively presenting grammatical points to students. Linguists have much to contribute to teaching profession in the way of English grammar insights. We attempt to interpret and synthesize the relevant major linguistic sources for different grammatical structures in a comprehensible form. We have selected analyses from several linguistic approaches, such as transformation, traditional and case grammar [6, p. 276]. Transformational grammar is thought to be useful for understanding of syntactic operations as formation of negative sentence and question, basic sentence formation. It is better to rely on traditional and case grammar when the topic focuses more upon meaning of the word than its form as the use of verb tenses and prepositions. The acquisition of language involves learning how to use the structures within contexts, for example passive voice and articles. The presentation of grammatical constructions will provide teachers with the most useful information available for developing skills in linguistic analysis and accumulating knowledge about the grammar of English. To encourage learners to relate new ideas to the known ones the use of advance organizers can be suggested. An advance organizer is a brief general overview of new information that is provided before the material is presented. Advance organizers activate students' existing schemata relationships between new and the known one. The activities used may include both verbal (an overview of the new chapter) and non-verbal (diagrams, schemes) instructions providing concrete models of efficient language learning. Educational psychologists have discovered that verbal learning process is more efficient when information is structured into meaningful patterns and related then to existing meaning structures in our mind [4, p. 98]. Becoming more proficient, learners can restructure incoming language data into a larger pattern and understand this pattern as a whole, the meaning structure being defined as a schema.

The approach to teaching grammar involves three dimensions of language: form or structure, semantics or meaning, and pragmatic use. Teachers can use Larsen-Freeman pie chart as a guide for devel-

oping activities that relate form to meaning and use [6, p. 280]. The relevant use of Modal verbs in grammatical structures can help students form ability to communicate in the target language.

In the teaching suggestions which follow, we have shown some ways in which the systematicity of the modals could be revealed to the learners.

Modals with Infinitive

Meaning	Indefinite	Continuous	Perfect
Can/Could			
1. Physical or mental ability, capability, possibility.	He can read English. She could swim.	–	You could have solved the problem (the action was not carried out).
2. Permission.	You can use my pen.	–	–
3. Doubt astonishment.	Can he speak French?	Can he be reading now? You can't be waiting for her.	Can he have done it? (the action refers to the past).
Must			
1. Obligation, duty, necessity.	You must study well.	–	–
2. Prohibition.	You mustn't talk loudly.	–	–
3. Order or advice.	You must not do this task.	–	–
4. Supposition implying assurance.	He must be busy.	She must be watching TV.	He must have lost your book.
May/Might			
1. Supposition implying uncertainty.	He may be tired.	She may be sleeping now.	You may have caught cold.
2. Possibility depending on circumstances.	You may go there by car.	–	–
3. Permission.	May I come in?	–	–
4. Reproach, disapproval.	You might be more attentive.	–	You might have done this.

Carrell and Eisterhold underline that background information in the listener's mind can be content schemata and formal schemata. Content schemata represent cultural and topical knowledge and previous experience with a field [3, p. 553]. Formal schemata reveal people's knowledge of discourse forms, for example, text types, language structural organization. Both content and formal schemata assist in reading instruction, a teacher should help students to explore the meaning of the text and how the meaning can be discovered within the text. There can be suggested such teaching techniques as word-association ac-

tivities (brainstorming), discussion (questioning) and text surveys (surveying and previewing).

The readers make use of their existing schemata to make predictions about what is coming next to the text and about how some new, unfamiliar information relates to the known one. One might find the reading instructions useful. For example:

1. *Before you read the next article, think about its title and using your imagination, write a short character sketch about the person mentioned. After you have completed the story, share you paragraph with other students.*

2. *Before you read the next text, look at the title and make predictions about what you expect the article to be about. Share your ideas with the whole class.*

3. *Skim thoroughly the next article reading only the sentences in bold-face. Then share with a partner your predictions about what information you expect will be provided when you read the article in its complete form.*

Making use of schemata allows learners to avoid word-by-word reading while extracting meaning from the text.

Comprehension is the process by which meaning can be constructed from incoming information. Schemata activation includes pre-reading activities. Questions, brainstorming and pre-teaching, pre-testing and pre-discussing are the efficient pre-reading activities. Developing complex schemata among students to increase their reading comprehension may include such teaching strategies as previewing and questioning. Using this method, students first preview a passage to determine its length and how it is organized by headings and subheadings. Previewing learners to see how the new information may relate to what they already know and provides them with a structure in which the new information can be placed. Questioning is one of the best methods to activate students background knowledge and arouse their interest. When preparing for the classes, teachers combine the text content and design questions to help readers focus their attention on the reading material and guide them a full understanding of the reading assignment. Questioning calls for the student to use the organization of the passage to formulate questions. We consider appropriate the following pre-reading instructions:

1. *Scan the following reading for answers to the questions below.*

2. *Before you read the following article, skim through it quickly and underline two sentences that convey the main ideas.*

3. *Scan the following article to design the terms below and compare your definitions with a partner.*

4. *Working in groups, complete the tasks below and share your ideas with the whole class.*

Other activities for strengthening student comprehension include note taking and graphic organizers such as linear arrays (character hierarchies trees), networks and matrices (comparison tables). Developing two reading skills, previewing and predicting the overall meaning of a text, is a part of reading strategies for university students. The use of advance organizers, script activators and discussions which call up students' background knowledge will activate top-level skills and encourage top-down processing at every proficiency level. Relevant practice activities will provide students with an opportunity to use the structures they have been practicing in as natural way as possible thus resulting in students' finding ways to communicate and gain language proficiency.

Conclusions. To conclude, an increasing demand for skills and competences requires domain specific problem-solving abilities to respond in new ways. The teachers' role is therefore essential in creating a high quality student experience and enabling the acquisition of knowledge, competences and skills. For a good higher education experience it is necessary to provide students with both academic knowledge and skills which may influence their personal development and may be applied in their future careers. The activities being examined in the article are referred to schema-based tasks designed for the practice of grammatical structures. The experience shows that schemata approach appear to be a successful way to integrate communication and formal instruction, possess the necessary criteria to be motivating classroom activities and have lasting effects on learning.

Practicing the concept of schema theory as teaching methodology provides an opportunity for learning new ideas, sharing problems, and identifying promising ways of expanding the student's knowledge.

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