

ПЕДАГОГІКА

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THE TRANSITION FROM COGNITIVISM TO CONSTRUCTIVISM IN FOREIGN LANGUAGE TEACHING: COMPARATIVE ANALYSIS

This article offers to get acquainted with some basic theories of learning and their possible use in the educational process.

Cognitivism regards the student as the processor of a computer that processes information. As the dominant paradigm, cognitivism replaced behaviorism in the 60s. Cognitivism focuses on internal mental activity. Mental processes, such as thinking, memory, knowledge, problem solving, must be understood. Knowledge is seen as a diagram or symbolic mental constructs. Learning is a change in the student's pattern.

Constructivism, as a paradigm, or worldview, argues that learning is an active constructive process. A student is a designer / creator of information. Constructivism describes learning as an active contextual process of constructing knowledge, rather than its acquisition. Knowledge is constructed on the basis of personal experience and environmental hypotheses. Students constantly test these hypotheses through social negotiation. Each has its own interpretation and design of the process of acquiring knowledge.

Cognitivism and constructivism suggest that students should be active in determining how they acquire critical thinking ability. The teacher cannot "see" the thinking process, but can use approaches such as instructing the student to prepare a sound plan of action before proceeding with the patient care. The cognitive theory of learning is a learner / student-oriented model in which a learner uses internal thought processes to discover new ways to use past knowledge and new knowledge to provide patient care. When something that was learned in the past does not correspond to the current situation, the student experiences "cognitive dissonance" and must solve this problem before continuing his studies. On the basis of how well teachers understand what processes occur in students during training, they develop / select appropriate effective teaching technologies.

Key words: *behaviorism, cognitive approach, constructivism, pragmatic-functional concept, teaching of a foreign language.*

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ПЕРЕХІД ВІД КОГНІТИВІЗМУ ДО КОНСТРУКТИВІЗМУ В НАВЧАННІ ІНОЗЕМНОЇ МОВИ: ПОРІВНЯЛЬНИЙ АНАЛІЗ

Стаття пропонує ознайомитися з деякими основними теоріями навчання та їх можливим використанням у навчальному процесі.

Когнітивізм розцінює учня як процесор комп'ютера, обробляє інформацію. Як домінуюча парадигма, когнітивізм змінив біхевіоризм у 60-х рр. Когнітивізм концентрується на внутрішній розумовій діяльності. Ментальні процеси, такі як мислення, пам'ять, знання, розв'язання проблем, повинні бути зрозумілі. Знання розглядаються як схема або символічні ментальні конструкції. Навчання – це зміна схемати учня.

Конструктивізм, як парадигма або світогляд, стверджує, що навчання – це активний конструктивний процес. Учень – це конструктор / творець інформації. Конструктивізм описує навчання як активний контекстуальний процес конструювання знань, а не їх набуття. Знання конструюється на основі особистого досвіду й гіпотез

навколишнього середовища. Учні постійно тестують ці гіпотези за допомогою соціальних переговорів. Кожен має свою інтерпретацію і конструкцію процесу набуття знань.

Когнітивізм і конструктивізм припускають, що учні повинні бути активні у визначенні того, як вони набувають здатності критично мислити. Викладач не може «бачити» процес мислення, але може використовувати такі підходи, як доручити студенту підготувати обґрунтований план дій, перш ніж приступити до догляду за пацієнтом. Когнітивістська теорія навчання – це учень / студент – орієнтована модель, за якої учень використовує внутрішні розумові процеси для того, щоб відкрити для себе нові способи використання минулого знання й нових знань для забезпечення догляду за пацієнтом. Коли щось, впізнане в минулому, не відповідає поточній ситуації, учень відчуває «когнітивний дисонанс» і повинен розв'язати цю проблему, перш ніж продовжити навчання. На підставі того, наскільки добре викладачі розуміють, які процеси відбуваються в учнів під час навчання, вони розробляють / відбирають відповідні ефективні навчальні технології.

Ключові слова: біхевіоризм, когнітивний підхід, конструктивізм, прагматично-функціональна концепція, викладання іноземної мови.

Introduction. Although the ideas of behaviorism have long dominated the teaching of foreign languages as a theoretical concept, they have been criticized since the early 1970s. Critics saw the shortcomings of behaviorism in its limited expression of the teaching process and its incomplete coverage of the learning process. The conduct of specializations for the purpose of standardization, the high incidence of reductions, and the failure to take into account the processes of mental perception were not accepted by the representatives of the new cognitive theory. According to them, the material studied on the basis of the theory of behaviorism is remembered only for a specific purpose and only for a certain period of time (Anderson, 1989: 16; Blumstengel, 1998: 45; Habermas: 389). E.g. the material learned by heart for the exam is then forgotten. Another shortcoming of behaviorism was that there was no contextual connection between the materials studied and that the resulting knowledge could not be used to solve a particular problem. This theory can give the desired result only in solving simple problems in concrete fields. For example: in the work of memorizing certain facts; in the study of facts that do not need to be applied in practice, etc. The main purpose of the behavioral lesson model is to demonstrate the previously acquired knowledge correctly and without mistakes.

Discussion. Unlike the behavioral approach, in which any behavior, as well as speech, is based only on the external manifestation, the cognitive approach studies mental processes that are not subject to external observations. In this case, the main focus is on the processes of thinking and understanding. Cognitive theory tries to answer the questions “for what? why?” but not to the “what?” question. At the same time, he considers speech activity and learning not as an “act of conditioning behavior”, but as a cognitive activity, a cognitive and creative process that takes place in the mind, and calls it a “conscious act” (Anderson, 1989: 17; Rubin, 1999: 1163). Therefore, in contrast to behaviorism, cognitivism does not accept the idea

that the student has a purely passive, receptive role, but is based on the internal mental processes that constitute active thinking and comprehension activities. Learning is taken as an active and independent action against external stimuli, the interaction of the internal structure with external influences. Learning is taken as an active and independent action against external stimuli, the interaction of the internal structure with external influences to develop the ability to solve problems (Rubin, 1999: 1163).

According to cognitivism, the learner, in our example, the student, is an active participant in the learning process. He/she purposefully selects and processes information. In this regard, A. Wentsel explains learning as a process of information processing that takes place in the mind (Rubin, 1999: 1164). Such a process can be metaphorically compared to the process of processing information on a computer. The process of computer information processing is similar to the process by which the mind processes the results from a database. That is, the person receiving the information decrypts it at the expense of the internal circuit and other information. From a cognitive point of view, all actions are managed through purposeful and active information processing processes. Management is based on knowledge-based plans.

Cognitive theory not only defines learning as a cognitive activity, but also defines its various methods and strategies. Thus, R. Gagne, considered the founder of cognitivism, identified 8 types of learning (Gagne, 1981: 34–39), and D.P. Ausubel identified cognitive styles (Ausubel, 1968: 69). According to D.C. Rubin and S. Hinton, language must also be understood through mental processes using these methods and strategies (Rubin, 1999: 1168). For this purpose, the authors linked learning strategies with foreign language teaching and identified 7 types: understanding, desire to feel and accuracy of understanding, strong motivation to communicate, naturalness, reality; attention to the formality of language; search for a communication partner; control your

speech; attention to content (Rubin, 1999: 1172). Then they identified 24 strategies for learning a foreign language and combined them into 3 groups:

1. Metacognitive strategies – advance planning of learning, understanding the learning process and evaluating the results;

2. Cognitive strategies – this includes work on teaching materials. Repetition, grouping, deduction, synopsis, keyword memorization, etc.;

3. Socio-affective strategies for cooperation and compensatory strategies for explaining ambiguities – repeated queries, paraphrases, examples, instances, etc.

We can call this stage cognitive from the psychological point of view, pragmatic-functional from the linguistic aspect, and communicative from the methodological aspect. Cognitive psychology, as noted above, views speech activity as a conscious act. As for pragmatic linguistics, speech activity is defined as the term “speech act” (Searle, 1969: 24).

Pragmatic linguistics defines language, not as a closed system of certain forms, as accepted by structuralism, but as a special form of human action, as a certain aspect, and speech as a “regulated form of action” (Anderson, 1989: 79). Language is studied not by its formal structure, as in structuralism, but by its communicative function. According to pragmatic linguistics, to communicate is for people to do something with language, to perform certain actions. That is, communication is an action, an act, and at the root of every act is intention, purpose, and intensity (Searle, 1969: 31). The object of research of the theory of speech act, which is the basis of pragmatic linguistics, is speech intensities, speech acts. Each speech act goes through 3 stages:

1. to express “what?”
2. “how?” should express?
3. Pronunciation stage

J. Anderson gives a terminological explanation of these stages from the psychological point of view as follows:

1. Construction stage – here includes “what?” and “how?”. That is, “what” should be expressed, and that “what?” and “how?” should be expressed according to the circumstances of the situation.

2. Transformation stage – Transformation of “what” and “how” into sentences and texts.

3. Execution, that is, the stage of execution – taking the form of a sentence or text; the expression of “what”, i.e. the execution of the expression (Anderson: 61).

In the 1970s and 1980s, a new pragmatic-functional concept emerged in the teaching of oral speech as a result of the influence of cognitive psychology on the one hand and pragmatic linguistics on the other. The main purpose of the pragmatic-functional

concept is the use of foreign language knowledge in everyday communicative situations. For this purpose, the “system of speech intensities” developed by J. Sjolr is used (Searle: 32). The system consists of the following components:

1. Systematic organization and description of speech intensities.

2. Forms of translation of speech intensities into language. Possibilities for different ways of expressing a concrete speech intensity. This is an important factor for what Anderson called the transformation.

3. Different possibilities for the expression of speech intensity in a particular situation, i.e. the factors influencing the choice of formal patterns.

4. The impact of choice on the communication partner.

This system had a great influence both in determining the purpose of foreign language lessons and in the choice of speech material. The main purpose of teaching a foreign language, as before, was not only to describe structural linguistics, but also to create the necessary linguistic basis for the expression of ideas in concrete speech situations. Acts and the intensities that formed the core of the acts were used for this. Thus, it is determined what linguistic basis is needed for the verbal expression of a specific speech intensity in different situations, and the material is selected on this basis. In this case, the third component identified by J. Sjolr, i.e. the factors influencing the choice of formal language patterns for the verbal expression of intensity, must be taken into account.

The setting of completely new goals for the teaching of a foreign language and the use of new principles in the selection of speech material, of course, could not go unnoticed by the system of exercises and the means necessary to carry out these exercises. The main goal of foreign language teaching is to use a “system of gradual, step-by-step, sequential exercises” to build communicative skills. The basic model of such studies was in the form of “step-by-step, stage-by-stage expression without understanding”. “On the way from understanding to expression” each work has its own function, and the work is grouped according to these functions:

- a) studies that develop comprehension skills;
- b) reproductive exercises that lay the foundation for expressive skills;
- c) reproductive-productive studies that develop the ability to express skill;
- d) communicative exercises that strengthen the ability to express.

From a theoretical point of view, the new didactic requirements that emerged in the 1990s in connection with the emergence of the theory of constructivism

in foreign language teaching necessitated innovations in the application of ICT. The electron learning programs and materials used up to that time did not meet the requirements of constructivism theory because they presented information in a linear sequence and in a stable direction of development.

As noted above, the late 1980s and early 1990s were characterized as a period of transition from cognitivism to constructivism in the theory of foreign language teaching. Although constructivism developed in the 1970s in social, methodological and radical directions, it was radical constructivism that had a great influence on the methodology of foreign language teaching. Radical constructivism is based primarily on the research of neurobiologist H. Matura from Chile, who identified organisms as autopathic systems isolated from the environment (Matura, 1991: 65–77). However, the study of this theory from the scientific-philosophical and psychological point of view is connected with the names of E. Glasersfeld, H. Foerster, S. Schmidt.

Theoretically, cognitivism and constructivism share the same position at some points. Thus, both theories, unlike behaviorism, are based on internal mental processes. However, due to constructivism, these processes have nothing to do with the external environment (Foerster, 1999: 72). Thus, cognition does not reflect the external objective reality, because it is individual, it creates and constructs its own mental reality. Therefore, the reality that man perceives is in fact not a reality that exists objectively in the world around him, but a personal reality created by cognition individually.

According to cognitivism, knowledge exists objectively, regardless of the learner (Anderson, 1989: 80). However, according to constructivism, knowledge is created by the learner through the internal construction of ideas and concepts. Accordingly, knowledge acquisition is an active and creative process that is controlled and regulated by the learner. In this case, new knowledge is created on the basis of old knowledge, i.e. using background knowledge (Müller, 1997: 520). Thus, the existing structures are replaced with new ones or further expanded. As a result, the learner creates an individual representation of the world during the learning process.

According to this theory, the learning process depends on the learner and his experience. He knows best than anyone how to learn effectively. Therefore, each student must build the learning process independently and constructively. A ready-made foreign knowledge system should not accept the teaching material selected by the teacher or determined on the

basis of the textbook as it is. Knowledge and skills cannot be “implanted” in the minds of the requirements and withdrawn if necessary. They are re-generated each time under certain conditions in situations. At this time, the central nervous system creates internal neural connections that already exist. In short, knowledge arises in the form of neural networks (Foerster, 1999: 76). Therefore, e-learning systems with a linear and systematic sequence could not meet the requirements of constructivism. However, the emergence of the hypertext protocol with the Internet has created ample opportunities for students to present information in the form of a network. Semantic networking programs can be used to demonstrate and reproduce the individual knowledge base constructively created by the student. The semantic network expresses the concepts that the student perceives and the relationships between them. The concept refers to any abstract or concrete objects, and the relation refers to the relationships between these objects. Different relationships in the semantic network: “part-full” type, functional, quantitative, spatial, attribute relations, logical relations, linguistic relations and etc. can be exist. In this case, it is clear that the perception of concepts and events has a different structure, different construction, and there are different ways and strategies of this. These strategies and the corresponding system of exercises are also chosen by the student. In behaviorism, the teaching material itself came to the fore, but in constructivism, the ability to work independently with the material is key. The student must be able to search different sources of information to gain the necessary knowledge, as well as be able to solve problems in different ways. For example: an example of this is the work on hypertext documents enriched with multimedia elements. Because hypertext has a networked structure, many ways can be used to work on them. Online search engines are used to help students search various sources of information.

Result. All this shows that constructivism is a student-oriented theory. The student’s active learning activity and the ability to acquire knowledge independently, the ability to solve problems are taken as a basis. Expert systems are used to solve the problem of the student independently. Expert systems are complex programs that reflect expert knowledge in a specific subject area and advise less experienced users in making decisions. Expert systems help students develop individual expert knowledge. The student collects the facts and describes them as “if” (condition), “then” (result) type. Thus metacognitive knowledge arises.

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