

ISMGE 2020**II International Scientific and Practical Conference "Individual and Society in the
Modern Geopolitical Environment"****ON COGNITIVE APPROACH WHEN TEACHING FOREIGN
LANGUAGE THROUGH ELECTRONIC EDUCATIONAL
RESOURCES**

Larisa Generalova (a)*, Viktoria Yanina (b), Svetlana Kochetkova (c), Yulia Dzyubenko (d)
*Corresponding author

(a) Volgograd State University, Universitetskiy Ave.,100, Volgograd, Russian Federation, l.m.generalova@volsu.ru

(b) Volgograd State University, Universitetskiy Ave.,100, Volgograd, Russian Federation, yanina230172@volsu.ru

(c) Volgograd State University, Universitetskiy Ave.,100, Volgograd, Russian Federation,
svetlana.kochetkova2011@volsu.ru

(d) Volgograd State University, Universitetskiy Ave.,100, Volgograd, Russian Federation, dz_julie@volsu.ru

Abstract

The article is devoted to the analysis of the cognitive approach used by specialists in teaching foreign languages applying electronic educational tools. Electronic educational resources are educational tools based on computer technology. As an aid to the educational process, they are an important element of the methodology of teaching a foreign language. The emergence of such means of education, which offer great opportunities for using new technologies, leads to the expansion of the potential of the education process as a whole. A wider range of applications of teaching tools is accompanied by a variety of teaching methods and the effective development of universal educational activities. Besides, electronic educational resources contribute to the recognition of the needs of students to speak a foreign language efficiently. The article identifies the distinguishing features of the cognitive approach, the internal structure of the cognitive theory of multimedia teaching, provides a list of popular electronic educational resources for studying foreign languages. To increase the effectiveness of the educational process the advantages and disadvantages of using electronic tools are described.

2357-1330 © 2020 Published by European Publisher.

Keywords: Computer technology, cognitive approach, electronic educational resources, flexibility, teaching a foreign language, universal educational activities.



1. Introduction

The consistent formation of the cognitive paradigm made it possible to turn to the knowledge and understanding of current changes in the modern methodology of teaching foreign languages. This was achieved by the introduction of electronic educational tools that function for the effective implementation of educational programs in teaching a foreign language. The dynamic use of these technologies in the educational process allows you to create an authentic environment with the active use of hypermedia elements.

The rapid development of modern information technologies, the Internet and digitalization of data, the intensive informatization of society have contributed to the transformation of the educational paradigm. The national treasures of each country are electronic information resources. Their effectiveness and rational use have a direct impact on the economic power of any state.

It is impossible to imagine modern society without electronic and information technologies that accompany us everywhere, affecting every sphere of life. Therefore, everyone, as a subject of the information society, must be able to operate information processes, make use of multimedia electronic resources, and contribute to the formation of a fundamentally significant information culture.

2. Problem Statement

The introduction of electronic tools in the learning process plays an important role in the formation of this culture. These include multimedia technologies, local and global networks, telecommunications and much more. The reasons for using new electronic means in education seem obvious since the public expects deep innovations and “revolutions” in the field of education.

Computer training, the introduction of multimedia educational programs using telecommunications training tools, e-mails, video conferences, discussion forums, the Internet contribute to the formation of a system of certain knowledge and skills, which enables the student to form specific competencies (Baddeley, 2002; Mayer, 2005a; Moreno & Mayer, 2000; Paivio, 1986; Shakirova, 2015).

Electronic learning tools, interactive animation, videos, instructional films, together with the cognitive approach, play a large role in teaching a foreign language, helping to apply various strategies for learning and differentiating the individual characteristics of students.

3. Research Questions

Numerous psychological studies and teaching methods have proven that the educational process is much more successful when the brain creates its mental structures and, conversely, the effectiveness of brain activity decreases if the finished structures are imposed on it. The use of electronic learning tools allows you to make the process of learning language research and experimental.

The psychology of classical teaching of the last century was based on the concept of knowledge transfer when a student acted as a passive recipient of previously provided education. According to the understanding of “programmed learning” (Snelbecker, 1983), the teacher’s task was to diagnose the student’s knowledge needs, determine the level of knowledge content, apply appropriate methods of knowledge transfer and monitor their successful learning.

Everything changed with the advent of cognitive linguistics, which led to new requirements in teaching methods. Learning no longer meant only a structural transfer of knowledge, it should stimulate, first of all, the active work of mental activity. This raised the question of using new teaching methods that involve initiating information processing, introducing new information into an existing network of cognitive knowledge.

Such training has become possible using electronic education tools that integrate several types of media, can process incoming information in digital form and ensure the interactivity of the learning process.

The well-known Soviet psychologist Vygotsky (1982) convincingly proved in his studies that cognitive fragmentation of extra-linguistic reality takes place when an individual is already at the preverbal stage of development. At an early age, under the conceptual classification, the sensorimotor activity of the child, but no communication with other children plays a great role. Over time, linguistic competence and cognitive perception of the world takes on new forms, a person goes beyond the limits of directly perceived information and accumulates his/her experience in memory under the influence of external factors, whether it be literature, television, electronic educational resources. All training revolves around two processes: awareness and learning (Vygotsky, 1982). A foreign language in this sense is no exception. On the one hand, a language is a tool of communication; on the other hand, it is also a tool of cognition.

4. Purpose of the Study

Today these two components of language learning - gaining knowledge of the language and gaining knowledge of the language itself, are considered equally important processes and serve to compile an adequate idea of linguistic processes and phenomena, the ability to use this knowledge in real communication when teaching foreign languages. Therefore, the most significant approach to teaching a foreign language in modern society is recognized as a communicative-cognitive approach.

The study examined the most popular electronic educational resources for teaching foreign languages, which include: all kinds of electronic dictionaries with vocabulary simulators and terminological databases (DWDS, Leo, Iate, ECTACO and ETS, Multitran, ABBY Lingvo, Multilex), thesauruses or word networks (online: OpenThesaurus, visual thesaurus; simulators to activate the lexical minimum – online ABC. Phonetics; About favorite activities; A person who can do many things well; Dw.com; Deutsch-online; Study German; Proespanol.ru; Lingvaclub.ru; Hispanistas.ru and a lot more. The translation programs (e.g., Google Translator, World Lingo or Babel Fish), the sites allowing you to learn the language grammar – Love-spain.ru, <http://deutsch-uni.com.ru>, <http://www.grammade.ru> and others. The programs of processing texts with different spelling (DudenReader), which are adapted to the needs of learners. In addition, e-learning platforms – EdX, Coursera, Openlearning, Moodle, etc., where students can learn directly online and discuss the material studied.

5. Research Methods

In the study, the authors rely on the theory of the founder of the cognitive theory of multimedia learning Mayer (2005b), its essence is to combine the most common approaches to traditional learning and transfer them into the field of electronic and multimedia education. Using the results of the study, the authors suggest how and at what stages of perception the information coming from educational electronic resources should be processed to effectively promote further learning.

6. Findings

In his model, Mayer postulates two separate ways of presenting verbal and nonverbal information, the use of different stages of processing and storing visual and auditory information, and describes the supporting role of educational learning activities. The heart of his theory of learning is three principles of the theory of knowledge:

1. Dual-channel (auditory and visual). The didactic influence is based on the verbal and visual processing of information coming from the outside.
2. Limited capacity. The limited capacity of these channels, when the learner can only successfully perceive a limited number of cognitive units per unit of time, due to the cognitive ability of the individual mental activity.
3. Learning is an active process. Learning as the process of the mental system's interacting with the accompanying didactic material is the filtration and classification of information, followed by its conceptualization and integration on the basis of existing knowledge.

Our analysis shows that blended learning, using both traditional and electronic educational tools, has its advantages and disadvantages. Some scientists advocate the active introduction of electronic tools in the learning process, as such an integrated concept of teaching, using the possibilities of networking via the Internet and intranet in conjunction with the classical methods of classroom learning optimally contributes to the meaningful efficiency of the educational process.

Thus, Strasser considers the advantages of e-learning, primarily, from the perspective of the educational process organization. The flexibility of such learning is important for learners as they can choose where to learn, the content, duration and mode of training (Strasser, 2011). Arnold et al. (2013) also note the advantage of planning the place and the possibility of training depending on one's own needs. The autonomy of e-learning plays an important role: both students and teachers are independent in terms of temporal and spatial organization. E-learning resources offer students the opportunity to work in a new way. By studying in different places, they can discuss their problems and share their knowledge in numerous forums or online educational platforms. The use of all sorts of authentic materials, extensive resources, numerous links and presentations contribute to the students' creativity (Mayer, 2010).

In addition, the studying and teaching of foreign languages using computer networks provides a favorable environment for learning, facilitates the joint awareness promotion, allows students to work freely with hypermedia elements. Technical interactivity also contributes to the students' motivation. The rapid feedback between the teacher and students is worth noting. On top of all, thanks to the electronic

means of education, there is gradual interlinking between the already existing cognitive structures in the long-term memory of the subject and new information coming through the electronic resources. All of the above significantly lowers the threshold of entry into the specialized languages and accelerates their learning.

In today's digitalized world, computer knowledge and competent handling of digital media are of paramount importance, as they relate to all spheres of human life. Therefore, the use of electronic tools in teaching can have a positive impact on other areas, regardless of foreign languages. Thus, the teaching of foreign languages using electronic resources is well suited, among other things, to increase and improve the existing knowledge of working with such tools.

E-learning resources allow students who are ill and do not attend classes to quickly go through the training material, surf the Internet for suitable sources, share them with other students. Do not forget about the financial aspect of the matter. Electronic media help to save money on paper copies.

The use of e-learning tools also has certain disadvantages and risks. The described flexibility of training, free sessions and self-control can have a negative impact on the educational process, as the lack of constant discipline and responsible approach to the educational process and the lack of positive motivation of teachers can contribute to “fragmentary” learning (Roche, 2007). In addition, the abundance of empirical and didactic materials on the Internet can lead students to disorientation. In order to properly understand and use the material, to be able to find the necessary and useful information, students must have the necessary research techniques. In this case, the teacher can come to their aid to support and optimize the students' self-organization in e-learning.

7. Conclusion

The modernization of education in accordance with the Federal State Educational Standard has led to the intensification of the scientific search for effective ways of learning with the use of innovative educational technologies. The new didactics of foreign languages is at a promising stage of development – learning languages in class is no longer needed. Special training efficiency can be achieved using electronic tools and educational programs that implement the cognitive approach to the use of electronic resources in teaching, which solves the problem of the rationalization of the learning process, ensures the implementation of cognitive mechanisms, opens new prospects in the educational process, increases the level of mastering a studied material, develops the memory, imagination, perception, attention, intelligence, figurative, symbolic and logical thinking. It should also be borne in mind that the benefits of using new electronic technologies for education do not depend solely on the availability of equipment and technologies, but are linked to a whole range of processes for their use, the perfection of planning, the concept of development and implementation, maintenance, etc.

References

- Arnold, P., Kilian, L., & Thillosen, A. (2013). *Handbuch E-Learning. Lehren und Lernen mit digitalen Medien 3., aktualisierte Aufl.* WBV.
- Baddeley, A. D. (2002). Is working memory still working? *European Psychologist*, 7, 85–97.
- Mayer, R. E. (2005a). Cognitive Theory of Multimedia Learning. In R.E. Mayer (Ed.), *The Cambridge Handbook of Multimedia Learning* (pp. 43–72). Cambridge University Press.

- Mayer, R. E. (2005b). Introduction to Multimedia Learning. In R.E. Mayer (Ed.), *The Cambridge Handbook of Multimedia Learning* (pp. 1–16). Cambridge University Press.
- Mayer, R. E. (2010). Cognitive Theory of Multimedia Learning. In R. E. Mayer (Ed.). *Cambridge Handbook of Multimedia Learning* (pp. 43–72). Cambr. Univ. Press.
- Moreno, R., & Mayer, R. E. (2000). A Learner-Centered Approach to Multimedia Explanations: Deriving Instructional Design Principles from Cognitive Theory. *Interactive multimedia electronic. Journal of Computer-Enhanced Learning*. <http://imej.wfu.edu/articles/2000/2/05/index.asp>
- Paivio, A. (1986). *Mental Representations: A Dual Coding Approach*. Oxford University Press.
- Roche, J. (2007). *Fremdsprachen lernen medial. Entwicklungen, Forschungen, Perspektiven*. Lit.
- Shakirova, A. A. (2015). The principles of foreign language learning. *Modern problems of science and education*, 1–1. <http://www.science-education.ru/en/article/view?id=18324>
- Snelbecker, G. (1983). *Learning Theory, Instructional Theory, and Psychoeducational Design*. McGraw-Hill.
- Strasser, Th. (2011). *Moodle im Fremdsprachenunterricht. Blended Learning als innovativer didaktischer Ansatz oder pädagogische Eintagsfliege?* VWH Hülsbusch.
- Vygotsky, L. S. (1982). *Questions of Theory and History of Psychology* (Vol. 1). Pedagogy.