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Utopía y Praxis Latinoamericana, vol. 25, no. Esp.7, 2020
Universidad del Zulia, Venezuela
Available in: https://www.redalyc.org/articulo.oa?id=27964362037
DOI: https://doi.org/10.5281/zenodo.4009740

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Experimental Research of the “Techno-R” Technology in Teaching Foreign Languages

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DOI: https://doi.org/10.5281/zenodo.4009740
Redalyc: https://www.redalyc.org/articulo.oa?id=27964362037

Received: 03 August 2020
Accepted: 07 September 2020

Abstract:
This article provides an overview of modern educational technologies from the perspective of modernizing the traditional education system and the didactic reconstruction of educational material. This article is a detailed description of the experiment, which allows other researchers to repeat and appreciate the “Techno-R” technology. The results of experiential learning were expressed according to the established criteria in digital terms and subjected to mathematical processing according to “Student T-test”. The credibility of the findings made by the authors confirms the amount of the T-criterion in the range of 3.3-6.9, which indicates a high degree of reliability of the results.

Keywords: Competence, experiment, foreign language, mathematical statistics method, quality.

INTRODUCTION

There is a huge number of educational technologies for secondary and higher education in modern educational space. Technologies differ from the philosophical basis, in the leading concept of educational
material, organizational forms of learning. Technologies differ in content and purpose for a certain category of students (Yarmakeev et al.: 2016, Pimenova et al.: 2016, Fakhrutdinova et al.: 2014). The creative team of Kazan (Volga) State University is developing the educational technology "Techno-R", which is corrective in the formation of the communicative competence of students in languages. Before explaining its essence, we briefly consider the advantages and disadvantages of known technologies. Traditional technology, it is also called reproductive technology, is focused on the transfer of knowledge, skills and abilities. The basis of this technology is the educational paradigm of listening, memorizing and reproducing educational material. This technology is economical and makes it easier for students to understand complex educational material on the subjects of the natural-mathematical and humanitarian cycles, where mastery of knowledge is the main goal. The disadvantages of the technology include insignificant opportunities for individualization and creative development of cognitive forces of students.

The developmental teaching technology (L.S. Vygotsky, L.V. Zankov, D. B. Elkonin, V.V. Davydov) appeared against the background of traditional technology. Representatives of developmental teaching put forward the principle of teaching at a high level of complexity, in their opinion, it effectively reveals the spiritual strengths of the child. The ideas of developmental teaching are widespread in Russia; however, the requirements to teach all students at a fast pace and at a high level of complexity are not feasible for all of them.

The gradual formation of mental actions technology (P.Ya.Galperin, D. B. Elkonin, N.F. Talyzina) assumes a special place and application. The technology states that knowledge, skills and abilities cannot be acquired and stored outside of the activity. The authors' ideas on the formation of an indicative basis for action and on the types of learning are especially valuable. We do not agree with the opinion of some authors that the formation of stereotyped and motor students’ actions undermines the development of their creative potential. On the contrary, gaining the foundation of phonetic, lexical, grammar, and spelling skills in the field of mastering foreign languages give unlimited possibilities for the development of the students’ creative potential at the level of speech activity skills. We have taken the theory of P.Ya. Galperin in the third type of learning as a methodological basis for our research.

The modular learning technology initially appeared as a way of organizing educational material, but then the understanding of modular learning expanded. The modules include not only the content but also the methodology of mastering the module (methods and levels).

Design technologies have become particularly popular nowadays. They are options for the practical implementation of productive learning, the transformation of the learner into the subject of educational activity, the development of learner’s cognitive capabilities and needs. The WebQuest is one of the most widely known technologies. It is a project activity using Internet resources (Dodge: 2020). Digital Storytelling is a variety of design technology, aimed at creating a digital story by students - a multimedia product that can contain images, text, music and voice guidance as well (Gorokhova: 2020). The technology contributes to the development of students’ communicative competence: TED-technology or TED Talks of particular interest. The technology is in the form of conferences on various topics: science, art, politics, culture, global issues and so on. It is important to say that the use of information from TED-conferences is possible only with a sufficient level of language proficiency.

In general, there are a lot of varieties of technologies such as gaming technologies, distance learning technologies, traditional and innovative technologies for monitoring the level of formation of students’ competencies (Sergling: 2009).

The “Techno-R” technology we develop is intended, as already noted, to adjustment of speech skills and abilities and expand the amount of knowledge that make up the communicative competence. The explanation of its name is the following: the abbreviation “Techno” means the word “technology”, “R” is the result, that is why “Techno-R” is the technology leading to the result. Against the backdrop of the technologies diversity and the possibilities of modern technological advances as educational tools, we observe serious weaknesses in the level of student learning. This can be seen in the student assessment we conducted.
in a comprehensive school and a language university on the material of the French language. Students make lexical, grammatical, spelling mistakes, and they find it difficult to complete creative tasks in the field of productive and receptive types of speech activity. There are a lot of reasons for that, on the one hand, the teacher’s lack of innovative qualifications, and on the other hand, not all the students have a high level of cognitive power (memory, thinking, imagination). The way we propose according to our technology is a cognitive process based on humanism and a two-way process – teacher and learning, based on clear cognitive guidelines for the mastery of educational material, which are able to form elements of students “super-learning”. For example, the assessment of the monologue on the topic of “self-portrait” of first-year students showed an insufficient amount of utterance and difficulties in using speech skills. After studying on the basis of the “Techno-R” technology, namely, on the basis of clear cognitive guidelines, including language material and methods of its use in new situations, the result was impressive. Students not only successfully coped with their speech task - to present a self-portrait, but also easily described a portrait of a friend, a family member, a neighbour. What is more, they expanded their utterances through the elements of “super-learning”. For example, in the position “my friend loves travelling”, they independently added what cities and countries he has visited, what would he like to visit, in the position “what is the most important thing in life for him”, in addition, to give vocabulary in guidance (family, music, friends, work, love), they used the terms such as health, money, fame and success.

We would like to emphasize that the “Techno-R” technology is more effective for students with an insufficiently level of cognitive capabilities. As a result of learning based on the technology, the student’s psychological state improves, the student is satisfied with the results of the completed task and is ready to strive further for success. The technology we develop does not claim the universality, it occupies its niche in order to improve the level of learning, in our case in the field of foreign languages, and can be used by the teacher in case of dissatisfaction with the level of students’ learning.

We note that the “Techno-R” technology we develop on the example of teaching foreign languages, although we believe that its potential is much wider and the technology can be applied to other disciplines of school and university education (Hald: 1998).

There is a brief description of the “Techno-R” technology. It is based on a developmental paradigm aimed at the development of the students’ cognitive abilities, the formation of creative thinking and achievements of practical results in learning. The “Techno-R” technology consists of eight substantial blocks, named in accordance with the structure of communicative competence. The first four blocks represent linguistic competence, and they are named according to the forming skills such as phonetics, vocabulary, grammar and spelling. The second four blocks represent the skills of speech activity - speaking, listening, reading and writing, which are aimed at the formation of speech competence. Sociocultural competence is formed in the process of mastering skills and related knowledge. The content side of the technology is focused on the field of teaching foreign languages on state standards of schools and universities as well. Each block of the structure has its own substantial features, but the process side of the technology is the same for all blocks and consists of the following steps:

- Statement of the educational task;
- The study of the indicative basis (cognitive guidelines) of the studied linguistic phenomenon;
- Training for the implementation of the educational task;
- Implementation of creative tasks;
- Control and self-control of the level of formed competence.

One of the key element in the adjustment of skills and abilities and knowledge expansion is the teacher’s correct formulation of the educational task and the study of cognitive guidance that create the conditions for the transfer of knowledge, skills and abilities in solving new educational tasks.

METHODS
Before presenting the results of experimental studies on the “Techno-R” technology, we briefly show its methodological basis. The theoretical platform of our study is the transfer theory (Lisina: 1980), the theory of interiorization of mental actions according to I. Ya. Galperin (Halperin: 2003), the theory of methods of cognitive and practical activity of the Kazan didactic school (Vasilieva et al.: 2012). The theory of transfer helps us to identify didactic ways of teaching transfer, as a complex phenomenon of the human psyche that allows using knowledge, skills and abilities in new conditions. We consider transference as a positive phenomenon, taking into account its narrow interpretation, which is called “interference” in teaching foreign languages. Our position is expressed in teaching positive transference and preventing its negative influence (for example, phonetic and grammatical skills of the mother tongue can be transferred to a foreign language). The theory of P.Ya.Galperin opens up the possibilities of a didactic solution to the presentation of educational material, including generalization, since it is known that the transfer mechanism is a generalization of the solved and unresolved (new) educational task. The third part of the methodological basis of the “Techno-R” technology is represented by the methods of cognitive-practical activity, which are used at three levels of cognitive-speech independence of students: copying, reproductive-creative and constructive-creative (Wang & Xu: 2018).

According to the above theories and on the basis of the substantive and procedural aspects of the “Techno-R” technology, we have conducted and are currently conducting experimental studies to identify the effectiveness of the technology in teaching foreign languages at school and university. The results of research in the field of grammar, vocabulary, spelling, in the field of speaking and writing, were presented at international conferences, published in scientific collections (Kuzmina et al.: 2018, Mamaeva et al.: 2017). In this article, we describe the experiment conducted with students of the ninth grades of a secondary school who studied in the preparatory courses for the basic state examination. The experimental material contained language guidelines for the stage of the indicative basis of speech actions, as well as training and control exercises. Before the application of the “Techno-R” technology, there was a control assessment of the monologue on the topic “France” according to the following parameters:

- Logic statements (in points);
- The number of details in phrases (in points);
- Semantic completeness (in points);
- Speech literacy (in points);
- Volume of utterances (the number of spoken phrases);
- Value judgment (regarding environmental conditions, climate, culture).

It should be noted that students have already studied this thematic block at school. However, they had difficulty in applying factual and evaluative vocabulary, they made grammar mistakes, and not all the statements contained logic. A particular difficulty was manifested in the expression of their own opinion about the climate, landscapes, economy and cultural life in France (Galeeva et al.: 2017).

The course of the training experiment was the following:
- At the first stage of the technology, the speech task was to tell about modern France. The teacher attracted the attention of students to the fact that vocabulary and grammatical constructions, the logic of utterance (which will be presented by students) can be successfully used in the characterization of other geographical objects (Gulesha et al.: 2018).
- At the second stage, students were asked to get acquaintance with the generalized scheme of the characteristic of a geographical object in French, which included geographical location, climate, landscape, neighbouring countries, administrative divisions, brief information about the country’s economy and culture as well. In the scheme, which is a didactic and linguistic guideline, there were given the names of countries, cities, mountains, rivers, seas and oceans, economic and cultural achievements (N Vassilieva et al.: 2019).
• In the third stage there was training in the preparation of utterances. Altogether, students and the teacher studied the logic of utterance, discussed the content of topic modern France. Further, the students independently trained in constructing utterances on the situation “What can you tell about France in the French language competition”.
• At the stage of completing the creative task, students were asked to tell about their home country on the basis of the previous speech task “What can you tell a foreign friend about your country”. The experiment recorded the fact that students were interested in testing their strengths, they easily navigated and presented monologues on the topic "My Homeland", using a generalized approach to solving educational tasks. The stage of completing a creative task can be considered effective (Gafiyatova et al.: 2019).
• The final step was the self-analysis of student utterances. It should be noted that students have confidence in their abilities, although some self-assessments have said what exactly needs to be improved (to enrich the vocabulary, to learn detailed grammatical constructions). The lesson ended with the teacher’s assessment of success in speaking and of overcoming difficulties encountered by students in speaking French. Expressions of students after experimental training were evaluated according to the above criteria. The empirically obtained data, in order to objectively evaluate the work using the “Techno-R” technology, were subjected to statistical processing according to the following formula:
\[ t = \frac{M_1 - M_2}{\sqrt{m_1^2} + \sqrt{m_2^2}} \]
\#1 + \#2
M1 and M2 are the compared average amounts of the parameters, and m1 and m2 are their average mistakes.
Suppose the calculated amount of the criterion t turns out to be less than two (t <2), then the differences between the average amounts are considered random, not statistically significant. For t criteria greater than two (t> 2), this difference remains significant with a probability of 0.95; if t> 2.6, then the probability increases to 0.99; for t> 3.3, the probability is 0.999.

RESULTS
In the experiment we described, the validity of the results based on the statistical method “Student T-test” was expressed in the amount t> 3.5, which indicates the effectiveness of the “Techno-R” technology in terms of the formation of the speech competence of students in a foreign language.
With the same contingent of students, we conducted experimental research on spelling, namely, in the field of production of diacritics, which have a meaning-distinguishing functioning French. We noted the success of the results of this experiment.
In general, we carried out dozens of assessments at school and university using mathematical statistics. It is interesting to highlight that the greatest efficiency of the technology is recorded in teaching speaking, writing, spelling and grammar of the French language.
Every educational technology contributes to improving the quality of education. Some technologies broaden the horizons of students, others cultivate a sense of responsibility for the result of teamwork, others develop students’ interest in studying the subject, and increase learning motivation (Kuzmina et al.: 2018, Nazarova et al.: 2019, Shemshurenko et al.: 2019). The value of the “Techno-R” technology lies in the formation of a sufficient level of communicative competence, which allows the use of information technologies in foreign languages for educational and practical purposes.

DISCUSSION
Thus, the results of our study show that students of the Dagestan youth have not noticeable differences for determining a system of values. But at the same time, such differences express themselves for analyzing
the empirical material obtained in relation to religion and place of residence. The value of the “family” indicator for Dagestan youth does not lose its significance and continues to be one of the most significant traditional values. There is complete unanimity in their mass consciousness regardless of the place of residence, gender, attitude to religion and age for the “family” indicator. In addition, the indicator “religion” is one of the significant parameters of the life guidelines of Dagestan youth. It is understood against the backdrop of the increasing role of Islamic faith in modern Dagestan society (Snodgrass Rangel et al.: 2020). The material component is important despite the importance of intangible values. The researchers note a significant shift in the value orientations of modern youth towards pragmatism. Therefore, material well-being orientation towards a prosperous life cannot be blamed. Although their hypertrophy also led to inner impoverishment. At the same time, young people note that money, wealth and luxury are important for them. The activity aimed at achieving material well-being has lost moral condemnation. Money has become a powerful regulator, not only economic behaviour but also spiritual and moral relations (Samsonova & Efimova: 2007).

The respondents were asked the question “What negative phenomena (vices) among students in Dagestan society most concern you?” in our study. It allows us to identify the value attitudes existing in the mass consciousness of Dagestan youth. The data show that more than half of the respondents are concerned about the problems of drug addiction (79.9%), alcoholism (63.3%), rudeness, rudeness towards the older generation (61.7%), poor education (61.5%), prostitution (54.4%), theft, theft of personal (state) property (54.9%). However, hostility and hostility towards people of another nationality (44.2%), a drop in mortality (38.3%), hostility and hostility towards people of a different faith (36.9%), and disrespect for the individual are no less relevant (33.0%), a passion for money, enrichment (25.5%), lack of personal security (in public places, on the street) and avoidance of military service (10.7% each) are relevant. We can say that the moral crisis has the character of a kind of personal loss, against the background of weakening of such qualities as humanity, mercy, kindness, knowledge of universal moral principles, history and traditions of one’s people, etc. In other words, the moral “look” of Dagestan society, as well as the quality of interpersonal relationships, is a kind of “pain points” of the mass consciousness of Dagestan students.

The majority of Dagestan respondents adhere to a negative attitude towards almost all actions in the question of “What actions and behaviour for you personally are unacceptable and cannot be justified?” At the same time, the top five are suicide (60.1%), prostitution (59.8%), sexual relations with a person of their gender (58.4%), drug use (53.1%) and premarital sexual relations (44.5 %), which is negatively perceived by public consciousness. The next five are drunkenness (43.3%), political murder (39.3%), treason to the motherland (37.5%), public display of hostility to representatives of other nationalities (34.1%) smoking (30.7%) that is no less significant for the respondents. The third five includes enrichment at the expense of others (28.6%), violation of laws (26.4%), giving/receiving a bribe (21.1%), buying stolen things (18.6%), evading service in the army (10.7%). At the same time business non-obligation (8.9%) and stowaway in transport (8.6%) have a low level of conviction (Ratelle & Souleimanov: 2017).

Thus, a comparison of the two questions “What negative phenomena (vices) among students in Dagestan society most concern you?” and “What actions and behaviour are unacceptable to you and cannot be justified?” shows that the respondents in their behaviour do not accept, moreover, they will not justify actions, which there are they in modern Dagestan society (Chama-Chiliba et al.: 2020). There is the concept of “inner health” in the settings of Dagestan students "Inner healthy person". If the results of answers to the first question show the factors of deterioration of inner health, then the second question indicates the possible behaviour of Dagestan students (Omelchenko et al.: 2019).

CONCLUSION

To summarize the ongoing research on the development and use of the “Techno-R” technology in the educational process of secondary schools and universities in the field of studying foreign languages, namely the formation of the communicative competence of students, the validity of the experimentally obtained
data should be noted. The results of statistical processing indicate the significance of the results with a high degree of probability. The amount of Student's T-criteria in the range of 3.3-6.9 is multiple confirmations of the effectiveness of the “Techno-R” technology. Concluding the analysis of the “Techno-R” technology, we believe that the technology should be investigated on the basis of other foreign languages, as well as the native language and, possibly, in other humanitarian and natural-mathematical disciplines. In addition, we are convinced that further development is necessary not only of the theoretical part of the technology but also of teaching aids intended to improve the quality of education in secondary schools and universities. It is necessary to create textbooks on corrective grammar, phonetics and spelling as well. For example, corrective grammar should not be in the nature of a scholastic repetition of rules and exercises attached to them, but it should present educational material with a clear indicative basis for studying the grammatical phenomenon in the complex of its use in various grammatical positions.

The generalized approach to the formation of speech skills and abilities, which is the basis of the “Techno-R” technology, provides the conditions for their transfer to the solution of new educational tasks and thereby improves the quality of education.

ACKNOWLEDGEMENTS

The work is performed according to the Russian Government Program of Competitive Growth of Kazan Federal University.

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BIBLIOGRAPHY


GAFIYATOVA, EV, GAYNUTDINOVA, DZ, GALIAKHMETOVA, AT & LEVCHENKO, V. (2019). “The integration of pedagogical technologies as a condition for improving the quality of education. 3C TIC.” Cuadernos de desarrollo aplicados a las TIC, 126-139.


Journal of Organizational Culture, Communications and Conflict, Volume 20, Issue SpecialIssue, Pages 220-227. (Scopus)