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**FORMING STUDENTS' CONTENT AND LANGUAGE COMPETENCE IN THE CONDITIONS
OF A NON-LINGUISTIC HIGHER EDUCATIONAL INSTITUTION**

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Abstract

Nowadays Russia is almost completely integrated in the global space, which automatically means open competition in all spheres. In order to reach new targets, which are set for the system of professional education by the government, it is necessary to create or to modernize professional educational institutions and processes in them. Accordingly, the Russian higher education school is facing the task of preparing the effective, competitive graduate who meets the requirements of the market economy. The methodological basis of the research comprises the content and language integrated approach, which includes the basics and principles of the integrated teaching of a foreign language and professional disciplines, the socio-constructive approach to teaching foreign languages, and the competence-based approach, which is realized in the Russian higher education school.

Keywords

Competence – Language integrated learning – Forming technology

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Introduction

The economic and social modernization of the society as the basis of the country's competitiveness stands on the system of professional education, because, with the effective educational system, the efficiency of modernization processes significantly increases. A key component of the human resources strategic development in the conditions of Russia's forming innovative economy is its qualified working force. The system of professional education plays an important role in its creating ensuring a new quality of human resources and the conditions of their further capitalization.

Teaching foreign languages in the conditions of the higher education school is also obtaining new characteristics, such as the orientation on the world tendencies, the usage of new teaching technologies with the focus on the further possibility of self-education, and a marked intercultural orientation. The future specialist's professional competence comprises skills connected with the abilities of intercultural communication by means of a foreign language, information processing skills received in the process of learning the foreign language, reflexive skills, the tendency to self-understanding and self-perfection throughout the whole life.

The personal traits which are a special focus of development nowadays include tolerance to representatives of different cultures, creative abilities, open-mindedness, communicability, mobility, critical thinking, the ability to represent the native country in situations of professional intercultural communication by means of a foreign language. As a result, the higher education school has to respond to modern educational challenges, thus creating pedagogical conditions for developing skills of the new type¹.

Effective professionally oriented foreign language preparation in a higher educational institution helps form necessary skills for life-long learning. According to the state program of the Russian education development till 2020, one of priority tasks within the internationalization of the Russian education is the implementation of educational programs in the English language and the support of new the English language teaching projects oriented on the higher education institutions. The project program *A Foreign Language for Non-Linguistic Higher Education Institutions and Departments* under the supervision of S.G. Ter-Minasova and E.N. Solovova claims that foreign language learning is based on the interdisciplinary, integrating ground².

Nowadays, a new concept of teaching foreign languages in a non-linguistic higher educational institution is being formed, which is based on the principles of internationalization and professional orientation, and is focused on preparing the graduate who is capable of intercultural communication and professional interaction in the foreign language space. The concept consists in the content and language integrated teaching whose expected result may be the future specialist's developed content and language competence.

¹ D. J. Burenkova and S. A. Gudkova, "The instruments of the CLIL- technology practical realization in a higher educational institution", *Scientific Vector of TSU: Pedagogy and Psychology* Vol: 4 num 23 (2015): 50-56.

² E. G. Krylov, *Integral bilingual teaching of a foreign language and engineering disciplines in a technical higher educational institution*. Dr. hab. Thesis. Ekaterinburg: Ural State Pedagogical University. 2016.

Literature review

Nowadays there is a lot of Russian and foreign research on the content and language integration. The term *content and language integrated learning (CLIL)* was coined by D. Marsh at the end of the 20th century and was defined as learning a foreign language as a medium for learning other disciplines. Currently, the CLIL is seen as an educational approach in which disciplines or their parts are taught via a foreign language, thus pursuing the dual aim: simultaneous learning of the discipline content and the foreign language. The basics and principles of the CLIL were introduced by D. Marsh, D. Coyle, P. Mehisto. The approach finds development in the works of Ph. Hood, T. Ting, V. Pavon, M. Frigols-Martín, D. Greddol, D. Wolff, M.A. Hansen-Pauly, K. Dalton-Puffer, O. Meyer and others³.

Russian scientists have also shown interest in the problem of bilingual teaching and the development of bilingualism. A large deal of the Soviet-time scientific research (by B. V. Belyaev, L. S. Vygotsky, N. I. Zhinkin, A. A. Leontiev, L. V. Shcherba, A. I. Yatsikevichus) was dedicated to the interconnection between foreign language thinking and speaking. One of the most prominent modern researchers of bilingualism in teaching is L. L. Salekhova⁴, in whose works there is the notion of 'teaching a subject by means of a foreign language'. A number of scientists carry out research on implementing the bilingualism principles in the higher education school. Thus, I. E. Brycksina⁵ suggests a model of bicultural language education and the technology of professionally oriented teaching, which ensures the formation of the bilingual competence and its actualization in a non-linguistic higher education institution. E. M. Egoshina⁶ carries out a bilingual comparison of the Russian and English languages in the process of forming the professional foreign language competence. S. A. Trusina⁷ studies teaching a bilingual in the conditions of a national non-linguistic higher educational institution. L.L. Salekhova, T. G. Rybalko, N. K. Tuktamysheva, R. R. Zaripova⁸ have dedicated their studies to the integration of a foreign language and Mathematics. N. I. Batrova, in her research, specializes in the modelling of the information and communication teaching process on the basis of bilingualism. E. S. Pavlova in her works describes the possibility of using the CLIL

³ D. Coyle; P. Hood & D. Marsh, *CLIL: Content and language integrated learning* (New York: Cambridge University Press, 2010); D. Marsh; A. Maljers and A.-K. Hartiala, *Profiling European CLIL Classrooms. Languages Open Doors*. Jyväskylä: University of Jyväskylä. 2001 y T. Ting, "CLIL is not only immersion but also much more than the sum of its parts" *English Language Teaching Journal*, Vol: 65 num 3 (2011): 314–317.

⁴ L. L. Salekhova, *A didactic model of bilingual teaching of Mathematics in a higher educational institution*. Dr.hab. Thesis. Kazan: The Tartarian State Humanitarian Pedagogical University. 2008.

⁵ E. K. Vdovina, "Content and language integrated learning (CLIL) as a method of actualizing interdisciplinary connections in a technical higher educational institution", *The Herald of Tambov University: Humanitarian Sciences*. Vol: 23 num 173 (2018): 29-42.

⁶ R. R. Zaripova, *Modelling foreign language learning in a higher educational institution on the basis of content and language integral learning approach*. PhD Theses. Kazan: Kazan Federal University. 2015.

⁷ N. I. Almazova, *Linguodidactic characteristic of differentiating specifics of professionally oriented teaching of foreign languages and the content and language integrated learning*. In L. P. Khaliapina (Ed.), *Integral learning of foreign languages and professional disciplines* (P. 53-73). St.-Petersburg: St.-Petersburg Polytechnic University Press. 2018.

⁸ R. R. Zaripova, *Modelling foreign language learning in a higher educational...* y L. L. Salekhova, *A didactic model of bilingual teaching of Mathematics...*

in teaching Chemistry on the bilingual basis. K. S. Grigorieva⁹ studies the formation of the foreign language competence in the sphere of professional communication with future aviation engineers.

Proposed Methodology

The methodological basis of the research is the content and language integrated approach including the basics and principles of the integrated teaching of a foreign language and professional disciplines, the socio-constructive approach to learning foreign languages, and the competence-based approach, which is realized in the Russian higher education school.

The content and language integrated approach. In our research, we see the content and language integration as the integration of some specialized, subject content and language teaching. It is described by the following scientists: D. Marsh, D. Coyle, P. Mehisto, Ph. Hood, O. Meyer, M. Frigols-Martín, D. Greddol, D. Wolff, M.A. Hansen-Pauly, K. Dalton-Puffer and others¹⁰.

The competence-based approach. This is such an approach in which the education results are estimated outside the educational system. This approach has a deeply developed theoretical basis represented by such researchers as V. I. Baydenko, V. A. Bolotov, E. F. Zeer, A. K. Markova, I. A. Zimnyaya, J. Raven, B. Oskarsson, G. K. Selevko, A. V. Khutorskoy, V. A. Dalinger, N. N. Koshel, J. V. Vardanian and others.

The socio-constructive approach (L.S. Vygotsky, J. Jonassen, J. Piaget and others). Social constructivism is a kind of cognitive constructivism which emphasizes the collective nature of learning. The socio-constructive approach in education is characterized by a number of core elements: mutual teaching, collective learning, situational teaching, the anchor technology.

The theoretical basics of the research are:

- B. Bloom's taxonomy of thinking skills¹¹, developed by L. Anderson and D. Krathwohl¹², suggests dividing cognitive processes into two categories: lower order thinking skills and higher order thinking skills (LOTs & HOTs), and accounts for six levels: knowledge, comprehension, application, analysis, synthesis, evaluation. The taxonomy found development in the works of such Russian scientists as M. E. Bershady, M. E. Guzeev, L. S. Ilushin;

⁹ K. S. Grigorieva, Forming students' foreign language competence in the sphere of professional communication on the basis of the CLIL technology in technical higher educational institutions. PhD Thesis. Kazan: Kazan National Research Technological University. 2016.

¹⁰ D. Coyle; P. Hood & D. Marsh, CLIL: Content and language integrated...; T. Dudley-Evans and M. St. John, Developments in English for specific purposes: A multi-disciplinary approach (Cambridge: Cambridge University Press, 1989); T. Hutchinson, English for specific purposes: a learning centered approach (Cambridge: Cup, 1998); D. Hymes, On communicative competence. In J. B. Pride and J. Holmes (Eds.), Sociolinguistics (P. 269–293) (Harmondsworth: Penguin, 1972); D. Marsh; A. Maljers and A.-K. Hartiala, Profiling European CLIL Classrooms... y J. Scrivener, Learning teaching: A guidebook for English language teachers (Oxford: Macmillan, 2005).

¹¹ B. S. Bloom, Taxonomy of educational objectives (Boston, MA: Pearson Education, 1984).

¹² P. Mehisto, Uncovering CLIL: Content and language (Oxford: Macmillan Education. 2008).

- J. Cummins' theory of bilingualism¹³ and the "iceberg model" implying differences between basic interpersonal communicative skills and cognitive academic language proficiency (BICS&CALP); the model of "double iceberg", which suggests common language skills used by both languages¹⁴;

- the theory of thought and language continuity (L.S. Vygotsky, N.I. Zhinkin, A.A. Leontiev, B.V. Beliaev);

- modelling the learning language environment in accordance with the socio-constructive approach¹⁵.

The technology of forming the graduate's integrated content and language competence in the non-linguistic higher education institution implies the following stages:

the motivation-axiological stage forms in students the importance of professional foreign language communication for future professional activity; understanding the significance of the content and language competence for future professional activity; the need in future professional growth and development with the help of foreign language communication in the professional sphere;

the cognitive stage suggests acquiring the corresponding volume of language and content knowledge, the abilities to analyze the information obtained from a foreign language source and to apply this information in creative projects and oral presentations on professional topics;

the reflexive-modifying stage aims at the student's realization and evaluation of their own actions and achieved results by using the self-reflection technique; at developing the learner autonomy; at the actualization of the communicative and discipline (subject) competence; at forming and developing the cognitive and intercultural competence.

In order to measure the initial level of the content and language integrated competence (CLIC), several types of diagnostic tools were used: lexical and grammatical testing with the purpose of establishing the equability of the communicative competence in the experimental and control groups; audio and video-testing to check the four speech skills: speaking, listening, reading and writing in order to evaluate the initial level of the communicative competence; the expert evaluation of the CLIC level in accordance with the above described criteria; the evaluation of the CLIC level by the faculty of the non-linguistic higher education institution and the evaluation of their pedagogical activity efficiency (PAE).

In the course of diagnosing the initial CLIC level, it was established that the results of both the control and experimental groups were at the low and medium levels, the statistical analysis proved little differences between them before the experiment (Table 1). The diagnosis also showed the faculty's high CLIC level and the correlation between the initial level of the faculty's PAE and CLIC and the development of those in students.

¹³ D. R. Krathwohl, "A revision of Bloom's taxonomy: An overview", Theory into practice, Vol: 41 num 4 (2002): 212-218.

¹⁴ K. Bentley, The TKT Course: CLIL module (Cambridge: Cambridge University Press, 2010).

¹⁵ L. P. Khaliapina, Linguodidactic character of similarities and differences of professionally oriented and integrated teaching of foreign languages in S. K. Gural (Ed.), Language and Culture: Collected Papers of the 28th International Scientific Conference (P. 412-419) (Tomsk: Publishing House of Tomsk State University, 2018).

Criteria	Group	The criteria development level		
		low	medium	high
Content	Control	10%	82%	9%
	Experiment	11%	70%	19%
Communicative	Control	18%	72%	10%
	Experiment	15%	80%	5%
Cognitive	Control	6%	69%	25%
	Experiment	4%	58%	28%
Cultural	Control	38%	50%	12%
	Experiment	32%	52%	14%

Table 1
The initial levels of the CLIC before the experiment

Result Analysis

Solving the problem of preparing highly qualified specialists having a good command of a foreign language in their professional sphere in the conditions of globalization and for the purposes of increasing their academic mobility is possible with the organized process of professional education aimed at developing *future specialists' content and language integrated competence*, which we see as an individual integral qualitative professional characteristic including basic and professional subject and foreign language competence for a successful functioning on the labor market in the given professional sphere.

The competence classification breakdown allowed us to work out the structure and content of the *content and language integrated competence (CLIC) as an assembly of four competence types: communicative, content, cognitive and intercultural*. Thus, content and language integrated competence of the graduate from a non-linguistic higher educational institution was defined as acquiring the assembly of *the basic communicative competence, professional content competence and the additional cognitive and intercultural competence* for efficient activity in their professional sphere.

The basic (communicative) competence is the ability and readiness to apply linguistic knowledge and the skills of foreign language communication using basic interpersonal communicative skills (BICS). *The professional (content) competence* is the ability to apply content knowledge of professional disciplines in the sphere of learning and professional communication. *The additional cognitive competence* is the ability to demonstrate cognitive academic language proficiency (CALP), as well as higher order thinking skills (HOTS). *The additional intercultural competence* shows itself in the ability and readiness to demonstrate the knowledge about another language culture and intercultural interconnection skills.

At the forming stage of the experiment, the CLIC components were measured, and the indicators showed sufficient differences in the results of the control and experimental groups. The content component demonstrated the largest difference between them, with 9% at the high level in the control group against 74% in the experimental group. The cognitive component showed allied results (45% and 48% at the high level, 55% and 52% at the medium level and complete absence of low level results), which means that both groups achieved the same positive results in forming thinking skills at this stage. The significant difference between the indicators of the communicative criteria can be explained by the high communicative potential of the suggested teaching model. In the

control group, the high indicators at the low level (32%) are due to the lack of the cultural component in the traditional approach, which can be successfully corrected by the tested model as the experimental group shows.

At the final stage of the experiment, the CLIC components were measured again, as well as speech skills and the dynamics of the faculty's CLIC and their PAE after the experiment. We also pursued the task to find correlation between them. The dynamics of the CLIC criteria showed the following results: the low level decreased from 36% to 4% whereas the high level increased from 28% to 65% in the experimental group. As for the speech skills, the test results showed that the students' average points in the experimental group made up 5 for speaking and listening, 4.5 for writing, 7.5 for reading, with the general growth from 44 to 69 points.

Analyzing the faculty's CLIC changes, it is important to mention the significant growth of the content component indicator as well as the stable level of the CLIC components in general. Their indicators range within the high level and have slight variations. Most meaningful indicators of the PAE significantly grew in comparison with the initial stage of the experiment, with the considerably decreased variation range, which did not exceed 10-15% of the average indicator (Table 2).

Parameter	Initial stage		Control stage	
	Indicator	Variation	Indicator	Variation
Personal aspect of professional competence				
Ability to self-realization	59.4	19.7	75.9	6.7
Self-control in communication	67.1	15.3	78.21	9.1
Teacher's ability to empathy	73.2	6.5	77.4	31
Personal self-esteem of tolerance	81.9	3.5	84.1	3.3
Motivation for team activity	51.8	18.3	78.6	9.9
Motivation for success	53.2	19.6	72.3	8.2
Emotional and volitional aspect of professional competence				
Level of professional burnout	23.2	11.3	19.5	8.2
Level of emotional burnout	39.4	23.1	16.3	3.2
Teacher's readiness for professional activity				
Level of the teacher's innovative potential	61.2	7.3	82.5	4.2
Readiness for pedagogical activity	71.2	8.1	79.6	5.3
Necessity in psychological awareness	73.4	8.2	78.1	3.6

Table 2
The comparative analysis of the faculty's PAE at the initial and control stages of the experiment

Conclusion

Nowadays, Russia witnesses the tendencies to internationalized education as, due to globalization processes, graduates from a non-linguistic higher educational institution face the increased necessity of acquiring a foreign language for their professional sphere. The search of new approaches to effective teaching of a foreign language in a non-linguistic higher educational institution made us turn to foreign methods and, in particular, to the content and language integrated learning – CLIL. In the course of the research we distinguished the *CLIL specifics*: the content and language integration; a foreign language as a learning object and a medium for a subject study; special learning environment in which the study of the language and the subject make an integral whole. The indicators of the CLIC criteria and the four speech types at the *final stage of the experiment* prove the effectiveness of the suggested model as the experimental group did not find out any students with a low level of CLIC, whereas the general level of the CLIC in the experimental group grew in comparison with the control group by average 10%, and the statistical methods proved the differences between the control and experimental groups. The faculty's CLIC indicators also show a significantly increased level of the content component as well as the stable high level of the CLIC in general. Most meaningful indicators of the PAE significantly grew in comparison with the initial stage of the experiment, and the variation range does not exceed 10-15% of the average indicator.

As the difference demonstrates a positive tendency to the increased high level of CLIC, it makes it possible to claim a positive influence of the tested model on developing the content and language integrated competence of graduates from non-linguistic higher educational institutions.

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