
LANGUAGE TEACHING AT THE MEDICAL UNIVERSITY AND INSTRUMENTS FOR ACHIEVING EFFECTIVENESS

Zlatina Zheleva

Medical University – Plovdiv, Department of Languages and Specialized Training, Foreign Languages section, Bulgaria, zlatina.zheleva@gmail.com

Slavka Hristozova

Medical University – Plovdiv, Department of Languages and Specialized Training, Bulgaria, s_hristozova@abv.bg

Rumyana Stoyanova

Medical University – Plovdiv, Faculty of Public Health, Department of Health Management and Health Economics, Bulgaria, rumi_stoqnova@abv.bg

Abstract: Foreign language teaching to medical students depends on solving various institutional problems. In this sense, its effectiveness is a variable which influences the level of education at the university. Effectiveness of academic education depends on two groups of conditions- one is the purely material aspect- the place and conditions in which education takes place, the financial resources and the second one includes the psychoemotional aspect of training- the so-called didactic costs which include the physical and emotional efforts invested in the process of training both on the side of the lecturer and student. One of the ways to improve effectiveness is by restricting didactic costs- the less the psychoemotional tension and anxiety- the better results would a student achieve. Giving the student the opportunity to “manage his/her own manner of learning” and placing the student in the centre of the educational process would inevitably lead to increasing student motivation.

Another mechanism to achieve effectiveness and quality of education is through activating the inner motivation of students to learn a foreign language. The latter is influenced by factors such as concentration, attention, a feeling of complete participation in the process of training, lack of fear of failure, assuming responsibility for the achieved results etc. A new aspect of contemporary learning success is differentiation in education, introduction of the individual, personal style of learning of each student. An appropriate instrument or tool in achieving motivation is for the learning process to follow and conform to the different learning styles of students. The individual learning style implies the individual preferences in perceiving and memorizing information. The aim of the present paper is to identify these styles in students from the Medical University – Plovdiv and thus to identify their satisfaction with foreign language learning. The survey was conducted in 2017 among 140 students from 16 countries. A written questionnaire and a psychological test were used to gather the data. Determinants for satisfaction were identified as: the material setting and technological equipment, personal characteristics of the teacher and the microclimate in the student group. An adapted LSI (Learning Style Inventory) specifically adapted for Bulgaria which includes four types of approaches to the learning process- specific experience, reflective observation, abstract conceptualization and active experimentation was used. The results are distributed according to gender, specialty, year of studies and Kolb’s learning styles- divergent, assimilative, convergent and accommodative. The leading learning style according to our survey proves to be the convergent one with women having higher values (32,14%) than men (24,28%), next comes the assimilative learning style with men having higher value (17,14%) as opposed to women (14,28%). The accommodative is next – 5% of women and 3.57% men prefer this learning style and the least proffered one is the divergent one – 3,57% of women and 2,88% of men prefer it.

Keywords: foreign language teaching, satisfaction, learning styles

INTRODUCTION

Nowadays the learning of scientific knowledge and skills in the field of medicine takes place in an intercultural educational environment. A large number of students, interns, PhD candidates and post docs study or work outside their motherlands and communicate in the context of medicine in a foreign language. The necessity for communication for the purposes of everyday life (general language), professional practice (language of the specialty, personal development or career development implies paying attention to an important aspect of contemporary medical education- foreign language teaching.

With respect to the specialized disciplines in a specialized medical university, foreign language teaching is in subordination. It is related to the profile of studies and satisfies the educational necessity of students. It is aimed at teaching basic foreign language knowledge and or upgrading language competence and communicative skills. It

uses the language of medicine and works on linguistic problems of the medical text etc. Apart from educational functions it also has developing functions and contributes to the development of qualities necessary for practice – for example adaptability and the skill to learn successfully.

As an element of the educational cycle, the academic language teaching depends on the institutional decisions of organizational, financial, value and other nature. In this sense effectiveness of foreign language teaching of medical students is a variable which to a certain extent depends on the level and quality of training. Among the indicators for performance in foreign language teaching are the state of language communication in the academic environment, foreign language communication in the student group, year of studies, faculty as well as the preparation of bilingual students.

At Medical University- Plovdiv the specialties medicine, dental medicine and pharmacy are taught either in Bulgarian or in English. Bulgarian students learn modern foreign languages. Bilinguals study Bulgarian as a foreign language either because of their medical education or because of everyday life needs and adaptation to the environment. Bilingualism in the educational environment in medicine is a peculiarity caused by present-day realities and correlates with the level of education in the specialty. Language communicative competence is among the factors for performance in medical education and reflects on the students' social cultural and intercultural competence.¹ It is a factor for individual satisfaction with the conditions and education at the university.

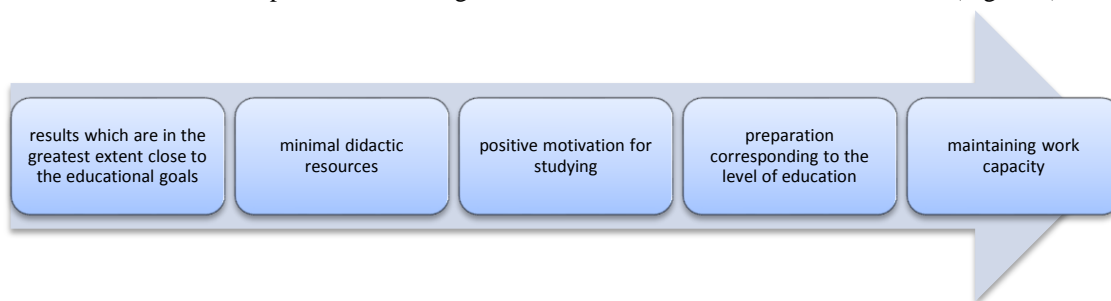
The significance of the problem implies institutional care not only for the training conditions at the Department of Languages and Specialized Training (DLST) but also for the methods and technologies of training with a view to improving the educational process and activating interpersonal foreign language communication in the academic environment. The achievement of institutional goals is unthinkable without actions towards enhancing the effectiveness in foreign language teaching.

EFFECTIVENESS OF FOREIGN LANGUAGE LEARNING AND TOOLS FOR INFLUENCE

In didactics effectiveness is an indicator for the manner in which the specific results transform into results with a social significance in the educational process.² Effectiveness is a correspondence between the initial educational goals and the obtained results bearing in mind the restrictions imposed by the external environment. It can be stated that an effective academic language training is one in which the level of language communicative competence acquired in a specific stage- section, semester, year- corresponds to the theoretical and practical objectives.

Effectiveness is a quality characteristic. On the one hand, it evaluates the training process as a whole and on the other- specific components in a technological aspect (learning content, methods, forms and means of education) and in a functional plane (teaching and learning). The criteria for effectiveness include the correctness of transferred knowledge and the time for its acquisition. The correctness measures the number of mistakes. Their decrease is in a positive correlation with correctness. The time is the length of education and is an indication whether the acquired language competence is achieved in a minimum time expense.³

Effectiveness of academic language teaching depends on two large groups of conditions. The first is related to the material aspect- the place and conditions in which education takes place, the financial resources and the second one includes the psycho-emotional aspect of training- the so-called didactic resources which include the physical and emotional efforts invested in the process of training both on the side of the lecturer and student.⁴ (Figure 1)



1. Toshkova-Hristozova, S. (2011). Management of the adaptation process of foreign students to the educational environment at MU-Plovdiv, MU-Plovdiv, Summary of a Doctor's dissertation, p. 12
2. Teneva M. (2016). Didactic effectiveness- factors and prerequisites for its realization, Journal Of Thracian University- Stara Zagora, Faculty of Paedagogics, V. XIII, p. 5-46.
3. Gospodinov B. (1993) Effectiveness of education- nature and criteria. Almanach of Paedagogy, book1, 1993, Veliko Tarnovo University, p. 14.

-
4. Gospodinov B. (1993) Effectiveness of education- nature and criteria. Almanach of Paedagogy, book1, 1993, Veliko Tarnovo University, p. 16, 22
-

DIDACTIC CRITERIA FOR EFFECTIVENESS OF ACADEMIC LANGUAGE EDUCATION

Didactic resources are a serious issue since it correlates with the selection of methods of education and development of the specific methodology of the languages taught at university. Higher effectiveness means limitation of mental efforts invested in learning. It depends on the conditions of the learning environment, organization of academic classes, personality factors. A study of anxiety among lecturers and students at Medical University Plovdiv (2011) determines the increased situational anxiety in students in their first and third year of studies, as well as in academic lecturers with practice between 11 and 20 years and at age between 45 and 62 years as a negative factor.¹

A change in the educational model- training aimed at the student and based on the achieved results implies an active participation of the student in training and in the 'management of his/her own training'². Learning is a cognitive process which is influenced by emotions, feelings, expectations³ and identifying determinants which stimulate the motivation for studying a foreign language is especially important for students in the non-humanitarian specialties.

Internal motivation is influenced by attention concentration, the feeling for full inclusion in the process of learning, lack of fear from failure, assumption of responsibility for the obtained results etc. Attention is paid to the element 'differentiation in training as a functional aspect of individualization in the educational process'⁴. The whole complex of conditions aims at limiting didactic resources and is directed towards the students' efforts and his/her skills to study efficiently. Many contemporary empiric studies state that an activator of internal motivation and a condition for improving academic results is the identification of the individual learning style.

According to NASSP the individual learning style is a combination of cognitive, affective and psychological characteristics which are relatively stable indicators for the manner in which the learner perceives, interacts with and responds to the learning environment⁵. It is a general behavioural predisposition which characterizes the performance of mental tasks. Through it the manner in which a person studies best and the natural preference of the brain to work in the most efficient way is determined.⁶ The styles of learning do not present differences in abilities but rather the preference for information processing in a certain way.

A person learns more effectively when he/she receives the same information in different manners and in different formats and familiarization with one's own learning style makes the process of learning more effective in situations without a dominant regime.⁷ Its determination is a prerequisite for 'overcoming difficulties more quickly in the self –preparation of exercises, tests, examinations, coursework, learning large amounts of knowledge'.⁸ The use of the individual learning style increases the possibility for training, professional development the more efficient team work, helps in the development of individual skills and interests etc.

The literature study disclosing the nature of learning styles leads to the conclusion that their usage in practice aims at improving the educational process and of methods of learning by conforming the training process with the individual differences. This explains the increasing number of studies in which the application of the individual learning style for the purposes of medical education is presented. In the context of reduction of didactic resources, it is presumed that the compliance with the individual learning styles would preserve for a longer time the learning capacity of the student and would influence positively his/her motivation to learn a foreign language.

MATERIALS AND METHODS

A study was conducted in 2017 in DLST with the aim of determining the degree of satisfaction with the conditions of the environment of foreign language learning and the level of teaching in it. The data was gathered through a sociological method (written questionnaire) and a psychological test (self- assessment scale). Determinants for influence on the individual evaluation for satisfaction are the condition of the facilities and the technological provision of language learning ($\chi^2 = 18,9$, $df = 8$, $p < 0.01$), personal characteristics of the teacher ($\chi^2 = 17,76$, $df = 8$, $p < 0.05$), the microclimate in the student group ($\chi^2 = 15,1$, $df = 8$, $p < 0.05$).

-
1. Personality, Psycho-climate and professional burnout syndrome. A on diagnostics and prevention of burnout syndrome in healthcare specialists, Sofiq, Iztok-Zapad, 2012, p. 216
 2. Lecheva, G. (2009). Learning styles as a paedagogical competence for a variety in teaching strategies. Scientific works of University of Rousse, vol. 48, series 6.2., 58.
 3. Gyurova V., Dermendzhieva G., Bozhilova V., Varbanova. The provocation educational process, Sofia, p. 20-21
 4. Andreev, M. (2001). The process of education. Didactics, Sofia University "Kliment Ohridski", p.336
 5. Griggs, Shirley (1991). Learning Styles Counseling. ERIC Digest.
 6. Pozharliev, A. (2002). Approbation of Davod Kolb's methods for the evaluation of the individual learning style, Psychological studies, book 1, p. 11

7. Cassidy, S. (2004) Learning Styles: An overview of theories, models, and measures. Educational Psychology An International Journal of Experimental Educational Psychology Volume 24, Issue 4, p. 419-444.
8. Johnson, M. (2009). Evaluation of Learning Style for First Year Medical Students, International Journal for the Scholarship of Teaching and Learning: Vol. 3: No. 1, Article 20, p.1-15.
9. Martineza, E., R. Tiescaba (2018). Learning styles and gross anatomy assessment outcomes at a Colombian School of Medicine, Educación Médica, p.5.

Determination of the leading learning styles is an aspect of a research task related to the identification of motivators for stimulating internal motivation to study foreign languages. It is assumed that through their use in the educational process, the participation of the student in training would be more active- a prerequisite for improving academic results and the satisfaction with teaching at DLST. An adapted LSI (Learning Style Inventory) specifically adapted for Bulgaria which includes five groups of statements which present four types of approaches to the learning process. ¹The values are from 4 to 1 according to the preferred learning style. Each subscale corresponds to a certain approach to the learning situation - specific experience (SE), reflective observation (RO), abstract conceptualization (AC) and active experimentation (AE) was used. The combination of the different answers reveals the leading learning style determined by the degree in which the studied person prefers the specific to the abstract and action as opposed to reflection.

The study encompasses 140 students from 16 countries: Bulgaria (48,60%), Greece (12,14%), Turkey (5,71%), United Kingdom (21,42%), France (0,71%), Germany (1,43), Italy (1,43%), Sweden (1,43%), Finland (0,71%), Maroco (0,71%), Syria (0,71%), USA (0,71%), Nigeria (1,43%), Irak (1,43%), Holland (0,71%) and Ireland (1,43%).

The distribution men-women is even (n=70). First course students are 33,57%, second course students 45,71%, and students from preparatory language courses 20,72%. The distribution of students according to specialty is the following (fig. 2)

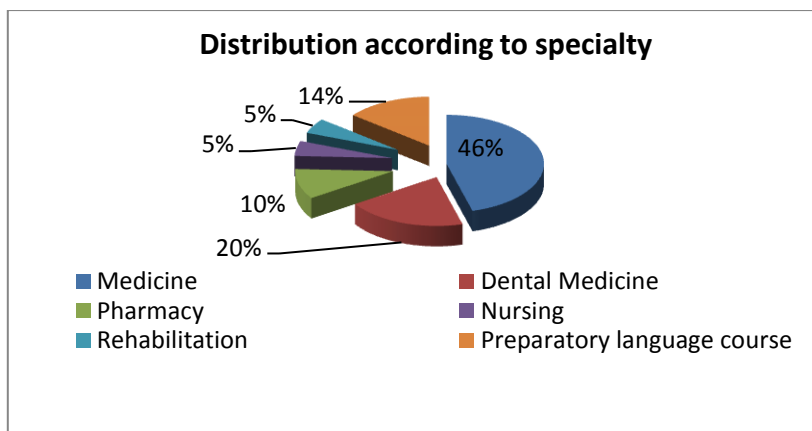


Fig.2

The study is based on David Kolb's concept that effective learning is one which goes through four stages in a cycle (1984). After going through the first cycle a new one begins as a spiral and the new cycle is based on richer experience. Each individual approaches learning according to his/her experience or on the basis of a specific experience (feeling/SE). On this basis he/she observes and realized the experience (thinking/AC). The observations are organized into concepts and a theory is created (performing /AE). Kolb's model presents two crossed axes- horizontal (RO-AE) and vertical (SE-AC). The opposite modes present four preferences related to the learning situation- performing, observing (AE-RO) and feeling and thinking (SE-AC) as well as four modes of learning – active experimentation, reflexive observation, specific experience and abstract conceptualization. The crossing of the two axes at a right angle generates four planes in which the main learning styles are situated- divergent (CO-RO), assimilative (RO-AC), convergent (AC-AE) and accommodative (AE-CO).

RESULTS AND ANALYSIS

According to the study, the main group of students (78.87%) (n=140) prefers learning on their own and individual preparation for tests and exercises. Those who admit that they never use the reading room at the library in order to study there but take books and study on their own at home are 13,28%. According to 7,85% group studying is more

effective and in 14,28% better results are achieved in learning in pairs. The problem related to the preferences for learning comes up which reflects in the technology of language learning.

The foreign language teacher uses the students' experience to learn gained in secondary education system. However, students who are in their first year of studies have different level of language knowledge and willingness to learn languages. Therefore, it is important for the teacher how the student perceives the learning situation (specific-abstract) and what approach would he/she choose in solving learning problems (observation-action).

1. Pozharliev, A. (2002). Approbation of David Kolb's methods for the evaluation of the individual learning style, Psychological studies, book 1, p. 10

2. Kolb, D. (2013). Learning Styles, <http://www.simplifypsychology.org/learning-kolb.html>.

The analysis of the data on the active-reflexive axis (AE-RO) discusses the approach related to information processing and solving learning problems. In the relation observe-perform and advantage takes active experimentation (68,48%) over reflective observation. The differences are due to the mental predisposition and mobility of nervous processes (extrovert- introvert).

The comparison of the relative shares of the approach for task performance according to gender presents a higher value for women (58,57%). A higher inclination for active inclusion and the use of new approaches is registered with them. Therefore, educational methods should include observations, analyses, participation in role games, discussions of cases etc. – i.e. the creation of language situations related to medical practice and to the work on the language of the specialty.

The distribution active –passive approach and course of studies is inversely proportional. The highest relative share in mode reflexive observation and passive approach is registered in the preparatory course (55,74%). In first-year students 29,68% prefer this approach while in second year students we report the lowest relative share (14,58%). In the specialty 'Nursing' there is a concurrence in the results of the two approaches. The inclination for active performance and the use of new elements in practice as well as the reflexive one have identical shares. Probably this is due to the nature of the specialty. It is presumed that it is related much more to performance than decision-making but in some cases the need for estimation of a situation and adequate reaction arises.

According to the vertically situated opposition specific-abstract, the results of the study show a predominance of the abstract approach and thinking (67,14%) over the specific approach and feeling. The abstract approach presupposes work with learning tasks containing symbols, definitions and graphs as well as presentation of the material in such a form. 10% of respondents share that they prefer for the grammar to be in tables. As to the visualization of the learning content- 73,57% prefer that and 48,57% sometimes use graphs for the illustration of the text.

The abstract approach is applied in 32,81% of medical students, 32,14% of dental medical students, 57,14% of nurses and 28,57% students from the preparatory courses. The information perception on the axis specific-abstract (SE-AC) in students of Pharmacy is evenly distributed. The result of rehabilitators is interesting since only one approach is registered with them- the specific (CO/feeling). This is probably due to the nature of the work of the physical therapist and conforms the conclusion that 'a person inclined to a specific experience avoids reflexive observation or abstract conceptualization ¹. With these students the perception of the learning environment is based on experience. The stage of abstract conceptualization is skipped and the creation of individual conclusions and theoretical constructions which are tested in practice related to it. The preferences are towards learning situation which allows the student to sense, touch or feel. It is assumed that with them training methods should comply with the description of objects and processes which they observe, are acquainted with and work with in seminars.

According to David Kolb the style of learning is a combination two preferred styles- the approach to performing a learning task and the approach to the learning situation. The analysis of the self-assessment scales determines the leading learning style – the convergent one (56,43%), and second comes the assimilative (31,43%). The convergent style is a combination of abstract conceptualization and active experimenting. The leading principle in the convergent style is problem solving, decision making and practical application of ideas ², it corresponds to the profile of university education.

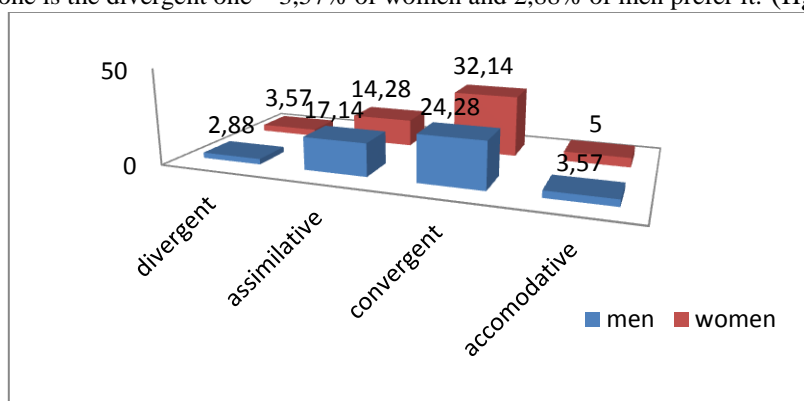
The distribution of learning styles according to faculties is the following: (table 1)

Faculty	Learning style								Total	%
	Divergent		Assimilative		Convergent		Accommodative			
	number	%	number	%	number	%	number	%		
Medical Faculty	2	1,42	21	15,00	43	30,71	4	2,85	70	50,00
Faculty of dental medicine	-	-	10	7,14	18	12,85	2	1,42	30	21,43
Faculty of Pharmacy	-	-	3	2,14	2	1,42	2	1,42	7	5,00
Faculty of Public Health	2	1,42	3	2,14	4	2,85	3	2,14	12	8,57
Preparatory course	1	0.71	7	5,00	12	8,57	1	0,71	21	15,00
Total	5	3,57	44	31,43	79	56,43	12	8,57	140	100,00

1. Zelinskiy M., Zelinskaya G. (2014) The use of the cycle of knowledge of D. Kolb in the teaching of economic disciplines, Problems, Decisions, 15(342), p. 41.

2. Pozharliev, A. (2002). Approbation of David Kolb's methods for the evaluation of the individual learning style, Psychological studies, book 1, p. 13

The leading learning style according to our survey proves to be the convergent one with women having higher values (32,14%) than men (24,28%), next comes the assimilative learning style with men having higher value (17,14%) as opposed to women (14,28%). The accommodative is next – 5% of women and 3,57% men prefer this learning style and the least proffered one is the divergent one – 3,57% of women and 2,88% of men prefer it. (fig. 3).



The study registers a dependence between the learning style and the student's age (Kruskal Wallis Test $\chi^2(2)=21,698$, $P=0.027$), as well as between the leading styles of students of medicine and rehabilitation ($U=96,500$; $P=0,011$).

The result analysis leads to some results. The effectiveness of academic foreign language education for students of medicine may be achieved if the lecturer provides the students' passing through all stages of knowledge (Kolb) and when he uses the appropriate tools for sparing mental effort invested in the process of learning. The determination of the leading learning styles is a specific methodic tool of the mechanism of internal motivation for increasing satisfaction with education. Their application improves language learning and turns them into a motivator for language learning. Being familiar with his/her learning style, the student has the ability to improve his/her own learning not only in the language he/she studies but also in the specialized disciplines.

REFERENCES

- Andreev, M. (2001). The process of education. Didactics, Sofia University "Kliment Ohridski"
- Gospodinov B. (1993) Effectiveness of education- nature and criteria. Almanach of Paedagogy, book1, 1993, Veliko Tarnovo University, p. 13-23.
- Gyurova V., Dermendzhieva G., Bozhilova V., Varbanova. The provocation educational process, Sofia, p. 20-21
- Zelinskiy M., Zelinskaya G. (2014) The use of the cycle of knowledge of D. Kolb in the teaching of economic disciplines, Problems, Decisions, 15(342), p. 39-50.
- Lecheva, G. (2009). Learning styles as a paedagogical competence for a variety in teaching strategies. Scientific works of University of Rousse, vol. 48, series 6.2., 54-59.

-
- Personality, Psycho-climate and professional burnout syndrome. A on diagnostics and prevention of burnout syndrome in healthcare specialists, Sofiq, Iztok-Zapad, 2012,
- Pozharliev, A. (2002). Appropriation of Davod Kolb's methods for the evaluation of the individual learning style, Psychological studies, book 1, p. 7-28
- Teneva M. (2016). Didactic effectiveness- factors and prerequisites for its realization, Journal Of Thracian University- Stara Zagora, Faculty of Paedagogics, V. XIII, p. 5-46.
- Toshkova-Hristozova, S. (2011). Management of the adaptation process of foreign students to the educational environment at MU-Plovdiv, MU-Plovdiv, Summary of a Doctor's dissertation, p. 12
- Martineza, E., R. Tescaba (2018). Learning styles and gross anatomy assessment outcomes at a Colombian School of Medicine, Educación Médica, p.5.
- Johnson, M. (2009). Evaluation of Learning Style for First Year Medical Students, International Journal for the Scholarship of Teaching and Learning: Vol. 3: No. 1, Article 20, p.1-15.
- Cassidy, S. (2004) Learning Styles: An overview of theories, models, and measures. Educational Psychology An International Journal of Experimental Educational Psychology Volume 24, Issue 4, p. 419-444.
- Griggs, Shirley (1991). Learning Styles Counseling. ERIC Digest.
- Willingham D., E. Hughes and D. Dobolyi (2015). The Scientific Status of Learning Styles Theories Teaching of Psychology, Vol. 42(3) 266-271.
- Toshkova-Hristozova (2015). Satisfaction of Lecturers and Students in Intercultural Educational Environment in Medicine, LAP LAMBERT Academic Publishing, OmniScriptum GmbH & Co.KG, Saarbrücken, 181p.
- Rebecca E. (2019) Definitions Of Learning Styles, LearnVid Education, 2006–2019, <https://www.studyingsyle.com>
- Kolb, D. (2013). Learning Styles, <http://www.simplypsychology.org/learning-kolb.html>.