Teaching Spoken Production in Global Contexts 2021

Nilakshi Phukan
Department of Foreign Languages and Literatures,
North Carolina State University, USA

Svitlana Volkova
Department of English Language for Humanities,
National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine

Kateryna Tuliakova
Department of English Language for Humanities
National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine

Oleksandr Pasichnyk
Department of Foreign Languages, Khmelnytsky National University; Khmelnytsky, Ukraine & Institute of Pedagogy, National Academy of Educational Science, Kyiv, Ukraine

Yuliya Kornytska
Department of English Language for Humanities,
National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine

Correspondent Author: kornitska.kpi@gmail.com

Received: 7/20/2021 Accepted: 10/24/2021 Published: 12/15/2021

Abstract

Shaping and developing communication skills in non-linguistic faculties in higher education institutions remain relevant. Thus, the theoretical and methodological guidelines for training English professionally-oriented spoken production are among significant problems. Intending to overcome some related challenges, we conducted this study to investigate the efficiency of using presentational speeches based on authentic video materials. The main aim of the research was to analyze the problem from methodological and didactic perspectives and substantiate the theoretical and methodological principles of the professional training of monolingual students through the experimental verification of the effectiveness of the proposed methodology. To achieve the objectives of this study, in the first stage, we determined the efficiency of pedagogical conditions for developing the foreign language competence of students. Then we verified the efficiency of using presentational speeches in teaching Spoken Production. At the last stage, we analyzed the effectiveness of the proposed methods of forming and developing foreign language competence (Spoken Production) by using presentational speeches. The study sample included 45 students of the Sociology and Law Faculty in the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”. We obtained the results that confirmed the efficiency of the presentational speech approach in teaching spoken production. Our study revealed that the presentational speech approach facilitates enhancement in the level of students' professional competence. These findings provide a good starting point for discussion and further research.

Keywords: political speeches, professional competence, professionally-oriented monologues in English, soft skills, spoken production

Cite as: Phukan, N., Volkova, S., Tuliakova, k., Pasichnyk, O., & Kornytska, Y. (2021). Teaching Spoken Production in Global Contexts 2021. Arab World English Journal, 12 (4)
DOI: https://dx.doi.org/10.24093/awej/vol12no4.15
Introduction

By 2021, we will see students re-learn how to engage themselves in an educational process more effectively. This phenomenon can lead to the following results: the rapid development of online education. When we continue to learn online, we need to focus on adapting to challenges of new circumstances and remain communicative. Therefore, as an alternative to face-to-face communication, students attend online classes (Zoom, Skype, and others), visit web pages. To transform the message-knowledge into language and then into speech means retrieving from memory the right words and speech patterns arranging them into spoken production. However, in many circumstances, students have to work hard to transform messages into language that they do not engage in the perspective-taking required to reckon with what listeners do and do not know (Brown & Dell, 1987).

Blurring the boundaries between countries and intensive interaction with researchers have changed the concept of the world. Due to the Internet, new challenges have arisen for future specialists in every country. For a modern generation, it is not enough to be a professional in information technologies; moreover, it is necessary to know a foreign language, namely English, as a global lingua franca. Many foreign companies running businesses in Ukraine have partners abroad. Therefore, young people are motivated sufficiently to study a foreign language as a means of communication. Simultaneously, they need to develop other skills such as oral production in non-linguistic faculties in higher education institutions. The signing of the Memorandum between the Ministry of Education and Science of Ukraine and the British Council confirms prospects to develop new approaches to teaching the English language in Ukraine (Memorandum of Understanding dated 2020).

Besides, the complex tasks on more effective international communication, experience exchange, increased student mobility, access to information, and mutual understanding during professional activity could be visible in the modern labor market. Ukraine is geographically located on the European continent and takes part in active integration processes of the European legal space. That is why the specialists who are ready for international cooperation within the European associations are relevant.

The study of the current situation shows that the theoretical and methodological guidelines for training English professionally-oriented spoken production (after this EPOSP) for students of higher education institutions are among the most significant problems. We could highlight the following reasons:

1) structural transformations in higher education institutions (hereafter referred to as the creation of European level education), as a result, the requirement to shape professionally-oriented spoken production;

2) changes in the priorities of the higher education system, which currently emphasize the significance of humanitarian subjects and English in particular;

3) new requirements for the professional competence of future specialists in mediation or conflict resolution and law.

Thus, professionally-oriented oral production, namely a description, reasoning, persuading, is needed to achieve professional goals. Furthermore, the educational resources for individual work require special attention from ESP teachers. Since Ukrainian students lack the necessary skills to organize their practice without the careful supervision of teachers, the
problem of individual work is essential to engage students in self-education and develop their autonomous learning (Simkova & Tuliakova, 2020).

**Literature Review**

The native and foreign scholars studied the problem of skill improvement. In particular, they highlighted the structuring of professionally oriented production as a tool for business presentation (Popova, 2006); classification of monologue (Nikolayeva, 2003); characteristics of speech, namely the communicative, psychological, and linguistic features (Skalkin, 1989); composition-language forms of monologue (Batashov, 1988). Considering the rapid development of information exchanges, researchers have also examined the following aspects of oral production: presentation in English (Drab, 2005; Zadorozhna, 2007) and levels of competence formation in the professionally-oriented production (Burak, 2016). They studied persuasive shows (Bilous, 2017) and the methodology of foreign language skills development of monologue speech in blended learning (Bekisheva, 2018). Furthermore, they researched the improvement of spoken production based on the emotional characteristics, intellectual and professional aspects (Babjuk, 2019). Moreover, scientists studied the structure of argumentation, logical form and the defining elements of argumentation (Taylor, 2008). Furthermore, the analysis of the scientific researches draws our attention to the problem of oral production in lawyers teaching and its general characteristic (Dudley-Evans, 1998); to the use of professional terms and common word units in their metaphorical dimensions (Hutchinson & Waters, 1987); to the teaching of speaking, key issues and assessing speaking (Bailey, 2005), to the significance and the uses of authentic materials (Oguz, & Bahar, 2008). Richards & Rodgers (2001) studied the indicators and evaluation criteria, methods, and approaches in language learning.

**Methodology**

We used the following complex methods to achieve the purpose of the research:

1. Analysis, synthesis, systematization of scientific data contained in pedagogical, philosophical, and methodological literature;
2. Tests, surveys, interviews;
3. Educational experiment - to test and verify the effectiveness of the method of teaching spoken production;
4. Methods of mathematical statistics: Fisher and Gubler's criterion (Gubler, 1969) for quantitative and qualitative analysis in scientific research.

**Participants**

We have chosen for our experiment four groups of the fifth-year students of the Faculty of Sociology and Law at “Igor Sikorsky Kyiv Polytechnic Institute” in the amount of 45 people who study the discipline English for Professional Communication.

The students of our selected groups had approximately the same levels of knowledge, skills, and language abilities. Such conditions were necessary for the validity of our research.

Having analyzed the current state of the problem under study, it does not show an effective way of teaching spoken production. There are not enough sets of tasks and exercises to develop oral speech.
Instrument

In this study, we have used two types of instruments. The authors used a set of criteria for speech materials which consists of 3 points: authenticity, current interest, professional development. On the other hand, the researchers assessed their reliability using the Empirical frequency by Gubler (1978). The value was 3,142.

*The objectives of the experimental work are:*

- to determine the effectiveness of pedagogical conditions for developing foreign language competence of students in Sociology and Law Faculty;
- to verify the efficiency of using presentational speeches in teaching spoken production;
- to analyze the effectiveness of the proposed methods of forming and developing foreign language competence (Spoken Production) using presentational speeches.

*The object of the study* was the process of teaching EPOSP.

*The research subject* is the teaching EPOSP method to future specialists using presentational speeches based on authentic video materials.

*The purpose of the research* is to analyze the problem from methodological and didactic perspectives and substantiate the theoretical and methodological principles of the professional learning of monolingual students of Sociology and Law Faculty through the experimental verification of the effectiveness of the proposed methodology.

Research Procedure

Firstly, we considered the theoretical and methodological principles of students’ practicing. Moreover, the authors have analyzed modern approaches and requirements of current educational programs for teaching professionally-oriented monologues to produce professionally-oriented utterances in English during monologue speech.

Secondly, the researchers studied the essence and content of professional competence. The authors have also determined the structure and properties of English professionally-oriented monologue (to define the monologue description, monologue reasoning, and its variety of monologue-persuasion as functional types of monologue necessary for future professional activities. During the experiment, we have chosen and substantiated the approaches of SP practicing and designed a training model.

We determined the following tasks to achieve our goals:

The further step is to develop a system of tasks with the presentational speeches for EPOSP training. They are to test the effectiveness of the methodology and prepare guidelines for teachers. Furthermore, we proposed original videos (political statements and documentaries) as training material for EPOSP. We determined the criteria of their selection with the requirements of the future profession: authenticity, professional informativeness, accessibility of presentation, thematic relevance, situational and socio-cultural value. The videos show communication in real life, provoking emotional feedback, and as a result, they boost the learning of the material. This video material is an information resource and, at the same time, a speech sample for students to rely on in their effective communicative activity.
Original materials used in the constructivist environment enlighten a matter from various perspectives and give the learner a chance to acquire information about life (Terhart, 2003). Authentic learning environments have the students experience real-life events or situations. In these environments, students interact with the original materials and get the chance to comprehend the learned foreign language better and use it in real life (Oguz, & Bahar, 2008, p.334). We agree with M. Spelleri, who asserts that authentic materials have at least three points of learning: language, cultural insights, practical application (Spelleri, 2002). The undoubted advantage of their use is adjustable technical functions: video stop, repetition, volume adjustment, pause, silent viewing, visual effects.

**Results**

The authors performed the calculations to verify the research results using the methods of mathematical statistics using a non-parametric test of Pearson criterion $\chi^2$. This method helped to find out that there is a significant difference between the experimental and control groups after the presentational speech approach was applied in the learning process.

Furthermore, we conducted the pedagogical experiment at the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”. Its objective was to confirm the effectiveness of teaching spoken production with regard to presentational speeches in 2019 and 2020. Four groups of fifth-year students of the Faculty of Sociology and Law took part in the experiment. Two groups in the first semester of the 2019/2020 academic year were as a control (C), and two groups in the second semester of the 2019/2020 academic year were experimental (E). The C involved 25 students, whereas the E involved 20 students.

We verified the effectiveness of the set of tasks of teaching EPOSP. The tasks consider the types of communicative situations based on “type of relationship”. The given characteristic of tasks enabled us to model various communicative situations, adequate to natural communication, to define the rules of educational actions. In addition, we studied the question of the essence of the psychological process of information exchange.

The public speeches, which were selected by us taking into account the specifics of the future activities of students, have a video series, which largely compensates for the lack of a natural language environment during learning. Producing a spoken production can be possible due to language skills: lexical, grammatical, phonetic (Babjuk, 2019, p.39). We propose to consider the criteria we have identified for the selection of speech material during learning:

- authenticity;
- current interest;
- professional development.

Also worked and trained in the use of appropriate language tools, following the objectives of a particular monologue, such as *I insist*; *We deem it plausible*; *In my persuasion*; *the main tenet*; *The common notion*; *It is my strong conviction that...*; *We need more light on a subject*; *We have a voice in smth...*; *We are secure in belief that...* etc.

There is a list of themes for teaching EPOSP:

- Presidential elections;
- Agitation.
- Social behavior and social standards;
- Piracy in Ukraine;
- Intellectual Property;
- Civic rights;
- Voluntary Discipline;
- Local Authorities.

The interpretation and analysis of the obtained results prove the effectiveness of presentation speeches for teaching EPOSP. We selected the set of tasks, based on presentational speeches.

Table 1. Educational experiment

| Stages of Experiment | The purpose of each stage |
|----------------------|--------------------------|
| 1. Organization      | The scientifically based assumption about the causes and patterns of connection of any phenomena or events |
| 2. Implementation    | The ratio of the organization of the material with the stages of teaching EPOSP in four experimental groups |
| 3. Data              | Description of quality of knowledge acquisition in experimental groups and analysis of indicators of the previous section |
| 4. Interpretation    | Analysis of indicators and substantiated proof of the hypothesis |

It is essential to highlight each stage of development of the hypothesis. The first stage is elaborating the research hypothesis. Exploring the issues of training EPOSP of the students of Sociology and Law Faculty, we analyzed methodological literature, which allowed us to formulate the following aspects:

1. Training of EPOSP is an integral part of English language learning for professional purposes in the 5th year because it meets the demands of the future professions and develops professional competencies;
2. The set of tasks and exercises for the development of EPOSP involves the use of presentational speeches.

The second stage of hypothesis development is the designing of its primary presupposition and the expected consequences. We hypothesized that the higher-level achievement of EPOSP is possible with the use of the presentational speech approach as an integral component of the overall foreign language acquisition process.

We should admit that the post-experimental task was similar to the previously conducted pre-experimental one. All students’ answers were recorded and later analyzed. So, teachers should create a situation of success in the audience to encourage students to reflect (Babjuk, 2019). To process the results of training, we used methods to study quantitative characteristics.

During the analysis of EPOSP, we paid attention to the approximation (standard pronunciation). Standard pronunciation is when phonological errors are absent. At the same time, we share the opinion of Bilyaev (1959). He stated that interpretation of students’ concepts in foreign words from the beginning creates conditions when they are both for the thinking and
correct use of foreign words and patterns in their speech activity. For correct somatization of terms in EPOSP, it is necessary to focus on particular contexts, the content of which should not go beyond the profession. Due to inclusion in this context, terms perform the definitive function. They express scientific concepts and involve information and formulation of thought (Grinyuk & Semenchuk, 2006).

The criteria for dividing the participants of an experiment into those who have "effect" (learning efficiency coefficient 0.7 and above) and those who “have no effect” (learning efficiency coefficient below 0.7) will be the results of pre- and post-experimental sections. To conduct a study using Fisher's test, we formulate statistical hypotheses.

1. Hypothesis 0 ($H_0$): the number of students who achieved a sufficient coefficient of learning by the results of the post-experimental team, not more than the number of students who achieved a sufficient coefficient of studying by the results of the pre-experimental part.

2. Alternative hypothesis ($H_1$): the number of students who achieved an adequate learning coefficient according to the results of a post-experimental part is higher than the number of students who achieved an acceptable coefficient of training according to the results of the pre-experimental team. The table of empirical frequencies was constructed based on two values of a sign: "There is an effect" and "there is no effect."

|                      | There is an effect | There is no effect | Total number of students |
|----------------------|-------------------|--------------------|-------------------------|
|                      | Number of students| Percentage         | $\phi$                  |
| Pre-experimental     | 15                | 33 %               | 0.76                    |
| test                 |                   |                    |                         |
| Post-experimental    | 45                | 100 %              | 3.142                   |
| test                 |                   |                    |                         |

According to the results of the pre-experimental section, only 15 students received a sufficient coefficient. According to the results of the post-experimental part, all 40 students overcame the barrier with a value of 0.7. Following E. Gubler (1978), we assume that 100% is the angle $\phi = 3.142$. Based on the statistical table of the value of the angle $\phi$ for different percentages according to V. Urbach (1975), we determine the amount of $\phi$, which corresponds to the total number of students.

The presented results prove the practicality of using presentation speeches for teaching EPOSP, as E-students showed the best effect.

**Discussions**

In addition, the experiment allowed identifying factors that negatively affect the results of training. The first one was difficulties in understanding original videos. Most students do not have enough listening skills. Therefore, we consider it reasonable to use original and authentic video materials systematically that results in the development of listening skills. Bajrami, L. & Ismaili, M. (2016) stated that videos can provide much more information for listeners and keep them attention focused on aural material.
The second essential point is difficulties performing exercises to master the skills of building SP statements on a professionally-related topic. We believe that consistent implementation in combination with original videos must be essential to overcome the above difficulties.

Moreover, difficulties of unprepared EPOSP among students are widespread. To consider them, we could propose a consistent increase in the volume of EPOSP statements during professionally-oriented monologues-descriptions and monologues-reasoning.

Conclusion

Considering the types of communicative situations based on "type of relationship," we characterized the types of monologue. Therefore, it made it possible to create a variety of communicative situations, appropriate to natural communication and determine the system of the efficient learning process. In addition, we studied the issue of the essence of the psychological attributes of information exchange to define the types of necessary SPs. Based on the above, the authors created a theoretically grounded set of exercises in teaching English-professionally oriented spoken production of monolingual students of Sociology and Law Faculty. Moreover, we analyzed and interpreted the results of the experiment and presented the statistical processing. Based on the study, we developed recommendations on teaching the English professionally-oriented spoken production.

Moreover, in highlighting the aspects of English professionally-oriented monologue and in the process of comparing the linguistic features of monologue, analysis of phonetic, lexical, and grammatical components of prepared and spontaneous monologue, we justified the use of prepared professionally-oriented monologue. The study of the theoretical aspect of the development of EPOSP skills and the conducted experiment became the basis for the guidelines for EPOSP training.

Thus, having analyzed the problem from methodological and didactic perspectives and substantiated the theoretical and methodological principles of the professional training of monolingual students through the experimental verification of the effectiveness of the proposed methodology, we can conclude that the experiment confirmed our hypothesis. The teaching in the fifth year allowed students to master the speech skills construction, as it took place based on a set of exercises with authentic videos selected according to the professional thematic orientation. Furthermore, we took into account student knowledge to build an effective English-language professionally-oriented spoken production. The results of the implementation in teaching practice confirmed the effectiveness of the methodology as well.

About the authors

Nilakshi Phukan is an Associate Teaching Professor in the Department of Foreign Languages and Literatures at North Carolina State University, USA. She has been teaching Hindi-Urdu languages and South Asian literatures and her main research interest centers on language pedagogy and South Asian literature along with folk literature of the world. ORCID: https://orcid.org/0000-0002-2177-2275
Svitlana Volkova  is a Senior Teacher of the Department of English Language for Humanities, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute. Her main research interests include second language acquisition theories, English for Academic Purposes and English for Specific Purposes. ORCID: https://orcid.org/0000-0002-2405-1561

Kateryna Tuliakova is a Ph.D. Senior Teacher of the Department of English Language for Humanities, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”. Her research interests include the development of students 21st century skills, English for Specific Purposes and language-conflict modeling. ORCID: https://orcid.org/0000-0002-4380-1161

Oleksandr Pasichnyk is a Ph.D. Associate Professor at the Department of Foreign Languages, Khmelnytsky National University; Senior Research Fellow, Institute of Pedagogy, National Academy of Educational Science. His research interests are in the areas of constructing learning content and CLIL. ORCID: https://orcid.org/0000-0002-0665-2099

Yuliya Kornytska is a Ph.D. Associate Professor of the Department of English Language for Humanities, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”. Her research interests lies in the area of English for Specific Purposes with a particular focus on technology-based teaching. ORCID: https://orcid.org/0000-0002-4781-0807

References
Babjuk, O. (2019). Formuvannia profesiino oriientovanoi anhlomovnoi kompetentnosti v monolohichnomu movlenni maibutnikh fakhivtsiv sfery turysny [Formation of professionally oriented English-language competence in the monologue speech of future specialists in the field of tourism]. Ternopil.

Bailey, K. M. (2005). Practical English Language Teaching: Speaking: New York: McGraw-Hill ESL/ELT

Bajrami, L. & Ismaili, M. (2016). The Role of Video Materials in EFL Classrooms. Procedia-Social and Behavioral Science 232, 502-506

Batashov, N. A. (1988). Sovrshenstvovanie ustnoy monologicheskoy rechi studentov 3 kursa yazykovogo fakulteta na osnove sistemno-funksionalny organizatsii uchebnno-rechevogo materiala (angliyskiy yazyk) [Improvement of the spoken monologue language of students of the third year study of language faculty on the basis of system-functional organization of educational-speech material (English)] (Unpublished Master's thesis). Oleksandr Gertsen Leningrad (Sankt-Peterburg) Pedagogic Institute. Leningrad. Russia

Bekisheva, T. G. (2018). Teaching foreign monologue speech to students of higher education in terms of blended learning. ResearchGate. Available at https://www.researchgate.net/publication/329245983

Belyaev, B. V. (1959). Ocherki po psihologii obucheniya inostrannyym yazykam [Essays on the Psychology of Teaching Foreign Languages]. Moskva: Gosuchpedgiz RSFSR.

Bilous, S. V. (2017). Navchannia maibutnikh filolohiv anhliisko ushnoho monolohichnoho persuazyvnoho movienia [Training of future philologists of English oral monologue persuasive speech]. Taras Shevchenko Kyiv National Institute. Kyiv.
Brown, P., & Dell, G. (1987). Adapting production to comprehension: the explicit mention of instruments. *Cognitive Psychology, 19*, 441–472.

Burak, M. (2016). *Rivni sformovanosti kompetentnosti v profesiino orientovanomu hovorinni ta informatsiino-komunikatiini kompetentnosti maibutnikh vykladachiv anhliisko movy* [Levels of competence formation in professionally oriented speaking and information and communication competence of future English teachers.]. Proceedings of the II International Conference on Romano-Germanic problems. TNPU. Ternopil. 235-237

Drab, N. L. (2005). Navchannia maibutnikh ekonomistiv inshomovnoho profesiino spriamovanoho monolohichnoho movlennia [Training of future economists of foreign language professionally oriented monologue speech]. Kyiv. nats linhv. un-t, Kyiv.

Dudley-Evans, T., & St. John, M. (1998). *Developments in English for specific purposes: a multy-disciplinary approach*. Cambridge: Cambridge University Press.

Gubler, E., & Genkin, A. (1969). *Neparametrycheskaia statystyka v medyko-byolohcheskykh yssledovaniakh* [Nonparametric statistics in biomedical research]. Moskva. Meditsina.

Hutchinson, T., & Waters, A. (1987). *English for Specific Purposes: A learner-centered approach*. Cambridge: Cambridge University Press.

Hryniuk, H., & Semenchuk, Yu. (2006). Etapy formuvannia inshomovnoi kompetentnosti [Stages of forming of foreign competence]. *Teaching foreign languages in higher school. (2)*, 23–24

Nikolaieva, S. Yu. (ed.). (2003). Zahalnoievropeiski Rekomendatsii z movnoi osvity: vyvchennia, vykladannia, otsiniuvannia [European Recommendations from language education: study, teaching, evaluation]. Kyiv: Lenvit

Oguz, A. & Bahar, O. (2008). The Importance of using Authentic Materials in Prospective Foreign Language Teacher Training. *Pakistan Journal of Social Sciences* 3 (4), 328-336. Available at https://www.researchgate.net/profile/Aytunga-Oguz/publication/283437943

Popova, O. (2006). Model obucheniya inoyazychnymy prezentatsionnymy nasyvikam i umenyiam studentov-menedzherov [Model of educating to foreign presentation skills and abilities of students-managers]. Available at http://pn.pglu.ru/index.php?module=subjects&func=viewpage&pageid=2114. htm.

Richards, J. C., & Rodgers, Th. S. (2001). *Approaches and methods in language teaching*. Cambridge: Cambridge University Press. Retrieved from doi: https://doi.org/10.1017/CBO9780511667305.020

Skalkin, V. L. (1989). Obuchenie monologicheskomu vyskazyvaniyu [Teaching monologue utterance]. Kyiv, Rad. shkola.

Spelleri, M. (2002). From lessons to life: Authentic materials bridge the gap. *ESL Magazine* 5(2). Available at http://www.eslmag.com.

Simkova, I., & Tuliakova, K. (2020). The implementation of spoken interaction methods as efficient tools to improve 21st century skills in English for specific purposes training in Higher schools of Ukraine. *Revista Dilemas Contemporáneos: Educación, Política y Valores*. Retrieved from: Http://www.dilemascontemporaneoseducacionpoliticaayvalores.com/ Año: VII Número: 2 Artículo no.:2 Período: 1ro de enero al 30 de abril del 2020.

Taylor, J.B. (2008). Stroke of Insight. TEDGlobal. Available at http://www.ted.com/talks/jill_bolte_taylor_s_powerful_stroke_of_insight.html

Terhart, E., (2003). Constructivism and teaching: A new paradigm in general didactics. *Curriculum Studies*, 35 (1): 25-44
Urbah, V. Yu. (1975). *Statisticheskiy analiz v biologicheskikh i meditsinskikh issledovaniyah* [A statistical analysis is in biological and medical researches]. Moskva. Meditsina.

Zadorozhna, I. P. (2007). Formuvannia vmin prezentatsii materialu anhliiskoiu movoiu studentamy movnykh spetsialnostei [Forming of presentation abilities in English by the students of language specialities]. *Scientific notes of Volodymyr Gnatiuk Ternopil Pedagogical University. Pedagogy*. (5), 80–84.