Enhancement of Kazakhstani technical university students' foreign language competence with the use of copyrighted e-learning courses in multilingual environment

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Abstract. This work is devoted to the solving of one of the most important and urgent problems in the methodology of studying a foreign language – raising the level of students' foreign language competence on the basis of different language systems phenomena comparative analysis with the use of teaching aids for intensification. The problem is to study the scientific basis, practical development and implementation of pedagogical support, including trilingual electronic resources, multimedia course, in the conditions of multilingual environment at the Kazakhstani technical university. The paper discusses the factors of multilingual environment at the technical university of Kazakhstan. The study combines the traditional and the innovative technological approaches. The article describes pilot implementation of copyrighted trilingual (English-Kazakh-Russian) training courses in the process of English language teaching as one of the conditions for the enhancement of students' foreign language competence.

Keywords: multilingual environment, trilingual training complex, ethnolinguistical, technical university, enhancement of foreign language competence

Introduction

Currently, in Kazakhstan the reforms in education are went on to implement: stages for gradual transition to the Latin alphabet till 2025 are developed, the project "Trinity of languages" has been put into effect [1], which aims to develop three languages: Kazakh as a state, Russian as a language for interethnic communication and English as a language for integration into the world economic community. A leading factor for successful implementation of the above-mentioned reforms is the system of higher education, in particular, the process of engineering students' foreign language training. Keeping national educational traditions, development of graduates' professional qualities that meet international standards, development of state, native and foreign languages competencies are the most important strategic goals of Kazakhstani education. Kazakhstan is a multiethnic country, where representatives of more than 130 nationalities live. Accordingly, one of the main objectives of educational process is the development of a personality who will be capable of active life in a multicultural, multi-faith and multilinguistic environment. Professional activities are getting complicated, requirements for bachelor degree are increasing, number of students going on academic mobility to foreign universities is growing - all these factors are signs that the problem is urgent and requires immediate solutions, especially in relation to Kazakh groups.

In the law "On education" (article 11) [2] the creation of necessary conditions for education directed on development and professional formation of a personality on the basis of national and universal values is defined as a top priority".

Bachelor of engineering and technology will be ready for international cooperation, if he (she) speaks foreign language on the level of world and European standards. This provision is marked in the State Program of Education Development in the Republic of Kazakhstan for 2011-2020 [3], the State program for functioning and development of languages for 2011-2020 [4] and in the requirements of the State educational standards for bachelors' foreign language training [5]. Preparation for foreign language communication in business and professional sphere has been identified as a fundamental problem in teaching a foreign language to students of non-linguistic specialties by the State educational standards.

But the annual monitoring of learning outcomes allows us to conclude that the level of graduates' foreign language competence (FLC) remains as low. The main reason for low level of foreign language competence is insufficient development of methods for teaching professional foreign language based on modern innovative technology and taking into account the conditions of

multilingual environment of Kazakhstani technical university.

Main part

The main problem is a low availability of textbooks for Kazakh groups. Analysis of available print and electronic resources showed the lack of Technical English textbooks for Kazakh groups. Based on the foregoing, it follows that it is necessary to develop and implement effective methodological support for improving foreign language competence with regard to the conditions of multilingual environment in a technical university of the Republic of Kazakhstan. Analysis of the socio-economic situation in the Republic of Kazakhstan, as well as studying the literature on the problems of engineering students' language training, revealed a number of discrepancies between socio-economic needs for professional staff, fluent in Kazakh, Russian and foreign languages and an outdated system of language training at technical universities.

A vivid example of natural bilingualism is the language situation in Kazakhstan, where at home communication takes place in native language, outside the home - in the second. But for a successful career specialist must also know English, i.e. from now bilingualism should move on to trilinguism or multilinguism. Multilingual environment is a system of social and educational conditions for the development of a personality, in this case, the development of technical university students' foreign language competence. Language is tied to the speaker's culture, so English language teaching material should be redesigned in order to develop language skills in the context of a student's national culture.

Taking into account geopolitical and language situation in Kazakhstan, there are three factors of multilingual environment: *ethnopedagogical, linguistic, etnolingvodidaktic.*

Ethnopedagogical factor. Progressive figures of the XIX-XX centuries, Sh. Valikhanov, I. Altynssarin, A. Kunanbayev, A. Baiturssynov, Zh. Aimauytov, M. Zhumabayev and other enlighteners of the Kazakh steppe, considered that education and dissemination of knowledge among the nomadic people as one of the main conditions for improving their socio-economic status. Analysis of the literature has allowed to formulate the following settings:

- education of youth must be firmly based on the basis of ethnopedagogics. Principles of folk pedagogy among all peoples have much in common, since they stem from human values.

- a combination of multicultural and national ideas in the education and training of young generation is the prerequisite for the harmonious synthesis of rich socio-cultural heritage of Kazakh ethnic group with the achievements of world culture;

- crisis of national and cultural identity is regarded as one of the most typical phenomena of modernity, so foreign language should not lead to the assimilation of the individual. Foreign language should be a means of expressing the socio-economic position of the state and its individuals in the conditions of international communication, a means of expression and preservation of the cultural identity of the ethnic group in the world today.

Linguistic factor. One of the known research methods in linguistics and language teaching is the method of contrastive linguistics. The essence of this method lies in the formation of associative connections on the basis of typological similarity of the phenomena in native and foreign languages that promotes better assimilation of grammatical rules and facilitates memorization of nominative units. For the development of students' foreign language competence in conditions of insufficient number of hours and the lack of authentic environment, the use of the comparative method would increase the effectiveness of the learning process.

Table 1. Comparison of tense forms of the verb in English, Kazakh and Russian languages

English	Kazakh	Russian
Affirmative sentences		
I shall be busy tomorrow.	Erten men bos bolamyn.	Ya zavtra budu svoboden. (ne zanyat)
He will come to Almaty next week.	Ol Almatyga kelesi aptada keledi.	On priyedet v Almaty na sleduyuschey nedele.
I have been there.	Men sonda boldym.	Ya byil tam.
He has seen that film.	Ol bul filmdi kordi.	On videl etot film.
We have seen him today.	Biz oni bugin kordik.	Myi videli ego segodnya.
They have never been there.	Olar ol zherde eshkashan bolgan zhok.	Oni nikogda ne byili tam.
The letter is written with a pen.	Hat қaryndashpen zhazyldy.	Pismo pishetsya karandashom.
This work was finished yesterday.	Bul zhumys keshe bitken.	Eta rabota byila zavershena vchera.
Interrogative sentences		
Is that letter written?	Sol hat zhazylyp zhatyr ma?	To pismo pishetsya?
Will the letter be sent tomorrow?	Hat erten zhiberileme?	Pismo otpravitsya zavtra?
Negative sentences		
That book was not read.	Ana kitap okylgan zhoк.	Ta kniga ne byila prochitana.
This work will not be finished next week.	Bul zhumys kelesi aptada bitpejdi.	Eta rabota ne zavershitsya na sleduyuschey nedele.

English, Kazakh and Russian languages belong to different language groups, but in English grammar, for example, in the formation of Tense Forms, there is a typological proximity to the grammar of Turkic languages. Table 1 shows the examples testifying to common and distinctive features in the formation of Tense Forms of the verb in English, Kazakh and Russian languages.

Theoretical and practical analysis of the works on contrastive linguistics in our study allows us to conclude: the reliance on native language or the language of learning is suitable due to insufficient time for learning a foreign language in technical universities, so in some aspects, for example, in teaching grammar, or in explaining the meaning of terms can be applied the comparative analysis of linguistic phenomena of native language or language of learning in order to save time.

Etnolingvodidaktic factor. The main core line of many studies on problems of learning a foreign language in a multilingual environment is the reliance on ethno-cultural component. This fact is of particular importance at the present stage in the global dominance of the English language in all spheres of activity.

Based on the analysis of researchers' opinions on bilingual and polylingual education the conclusions were formed that the elements of culture, the realities of the country of studied language are transferred to the learners, regardless of their race, ethnicity, religious belief. Therefore, in professional activity for successful negotiations, making contracts, participation in business projects a highly qualified specialist should take into account in his actions the peculiarities in perception, thinking, understanding the specific situation of the partner of communication.

Analysis of learning conditions in multilingual environment allowed to identify as a basis for the development of foreign language competence the following basic principles:
- comparative language teaching;
- study of culture of each ethnic group included in this educational environment;
- taking into account cognitive-mental characteristics of each ethnic group;
- professionally-centered learning.

The subject of our research is the enhancement of undergraduates' foreign language competence. Foreign language competence of a Bachelor of non-linguistic specialty is the ability to carry out professional business communication at the international level. The structure and content of foreign language competence, we have adapted to the conditions of multinational Kazakh university, taking into account the peculiarities of students' ethnic

character. Table 2 presents the structure of the FLC in the terms of multilingual educational environment.

Table 2. Structure of the FLC in the conditions of multilingual educational environment

Components	Competency	Professional foreign language competence
Motivational - regulatory	personal	Personal, national ethnic, self-educational
Cognitive - mental	multilanguage	multilingual, speech, ethnoculturological, ethnopsycholinguistic, discursive, socio-pragmatic, strategic
Professional - communicative	communicative	informational, linguistic and professional, terminological, design, technological, bibliographic

Foreign language competence is defined in this study as an integrative quality of a student that combines motivational-regulatory, professional-communicative and cognitive-mental components.

In the context of our research it is important to develop terminological competence for the development of foreign language competence. Review of the literature on this subject has allowed to define the process for forming technical terminology [6]:

Ways of formation of technical terms are:
1. Affixation - prefixal-suffixal method. (Degenerate, Generation)
2. Compounding - the formation of compound words. (Firewall)
3. Acronyms. (CALL - Computer Assisted Language Learning)
4. Connecting of two or more words and their definitions into a new concept. (Redox - Reduction Oxidation)
5. Truncated form of the word. (Cell - Cellphone)

Among all the strategies of word formation, affixation plays an important role in the shaping of technical language. Knowledge of ways of word formation may be one of conditions for effective mastering technical terminology by the students. In addition to the conceptualization, semantization and affixation, in order to effectively learn English vocabulary, essential for mastering the language at the level B2, there are separate four groups of vocabulary: high frequency vocabulary, academic vocabulary, vocabulary of highly specialized nature, vocabulary of low frequency [7].

Experimental work on the enhancement of engineering and technology future bachelors' foreign language competence. The experiment included entry, learning and control stages and was conducted from 2006 to 2013. The experiment involved the 1st, 2nd, 3rd year students of specialties: "Power",

"Power system", "Relay protection", "Information Systems", "Mechanics", "Physics", "Transport Equipment and Technologies" , "Metallurgy".

For monitoring and evaluation of FLC enhancement the criterion-level system was developed. We have attempted to correlate didactic levels of mastering a foreign language by State Educational Standards (SES) of Kazakhstan and the European system (Table 3):

Table 3. Correlation of didactic levels with levels of foreign language competence according to SES of Kazakhstan and the European System

Levels of language competence		
Didactic	State Standard of the Republic of Kazakhstan	European system
Reproductive	Minimally adequate	A1
Empirical	Sufficient	A2
Heuristic	Basic adequacy	B1
Research	Basic standard	B2
Constructive	Ultra-basic standard	C1
Creative	Super-basic	C2

According to the State Standard of Kazakhstan, the main goal of discipline "Foreign Language" in engineering and technology bachelors' preparation is the development of foreign language competence at the level of Basic standard - B2, graduate students must achieve a level of C1, doctoral students - C2 level, therefore, in the context of our study, we are interested only in the first four levels (A1, A2, B1, B2).

In accordance with the above theoretical considerations, at the foreign languages practical course department of S. Toraighyrov Pavlodar State University (PSU) from 2009 to 2012 some teaching aids for technical specialties were issued and implemented, including: e-learning courses (ELC) for Kazakh and Russian groups, training manuals "English for Specific Purposes", "English-Russian-Kazakh Dictionary on Physics, Mathematics and Computer Science", English-Russian-Kazakh terminology trainer, multimedia course "Four Basis Skills" [8,9,10,11,12].

Experiential learning program included:

- conducting of curricular and extra-curricular lessons in basic English language with the use of copyright ELC for 1-2 year students of experimental groups;

- holding of the classroom and extracurricular lessons on the elective course "Technical translation" using the ELC, mannuals "English for Specific Purposes" with the purpose of mastering technical English by 2nd, 3rd year students of experimental groups;

- carrying out of the current, mid-term and final monitoring the results using the multimedia course "Four Basic Skills" (Figure 1).

Figure 1. Listening

For the distribution of students of control and experimental groups on the FLC levels in the professional-communicative, cognitive-mental and motivative-regulatory components the final tests and questionnaires were carried out (Table 4). The aim of the survey was to identify the students' opinions on the feasibility and efficiency of ELC in the development of FLC.

Table 4. Levels of FLC before and after experiment

components / levels/ groups	control groups				experimental groups			
	before experiment		after experiment		before experiment		after experiment	
cognitive-mental	%	number of stud.	%	number of stud.	%	number of stud.	%	number of stud.
A1- Minimally adequate	51	18	45	18	53	19	2	1
A2 - Sufficient	30	11	33	14	27	10	32	13
B1 – Basic adequacy	13	5	15	6	16	6	43	18
B2 – Basic standard	6	2	7	3	4	1	23	9
Total	100	36	100	41	100	36	100	41
professional-communicative	%	number of stud.	%	number of stud.	%	number of stud.	%	number of stud.
A1- Minimally adequate	71	26	64	26	69	25	4	2
A2 - Sufficient	22	8	25	10	23	8	41	16
B1 – Basic adequacy	7	2	9	4	8	3	33	14
B2 – Basic standard	0	0	2	1	0	0	22	9
Total	100	36	100	41	100	36	100	41
motivative-regulatory	%	number of stud.	%	number of stud.	%	number of stud.	%	number of stud.
A1- Minimally adequate	34	12	28	11	33	12	4	2
A2 - Sufficient	38	14	40	17	39	14	36	15
B1 – Basic adequacy	28	10	30	12	28	10	42	17
B2 – Basic standard	0	0	2	1	0	0	18	7
Total	100	36	100	41	100	36	100	41

On control stage of the experiment, we analyzed the changes in the levels of foreign language competence among the students of experimental and control groups before and after the experiment (Table 5).

Table 5. Dynamics of changes in the levels of students' FLC on the results of experimental work (expert evaluation)

Levels / FLC / groups	A1		A2		B1		B2		Amount	
	%	number of stud.	%	number of stud.	%	number of stud.	%	number of stud.	%	number of stud.
EG (pre-pilot test)	53	19	28	10	17	6	2	1	100	36
EG (post-experimental test)	2	1	33	13	43	18	22	9	100	41
CG(pre-pilot test)	53	19	30	11	15	5	2	1	100	36
CG (post-experimental test)	39	16	36	14	21	9	4	2	100	41
Total (mean)	37	14	32	12	24	10	8	3		

EG – experimental groups
CG– control groups

According to expert estimation the analysis of mobile learning means efficiency showed that the number of students in the experimental groups with a minimally adequate level (A1) decreased by 51%, from 19 students there was only one, the number of students with a sufficient level (A2) increased by 5% - 3 students and the number of students with a basic adequacy level (B1) increased by 26% - 12 students, the number of students with a basic standard level (B2) increased by 20% - 8 students.

In control groups, the number of students with the level of A1 decreased by 14% - 3 students, with the level of A2 increased by 6% - 3 students, with the level of B1 increased by 6% - 4 student, with the level of B2 increased by 2% - 1 student. The reliability of test results proved by Student' t-criterion.

Conclusion
Implementation of multilingual resources in the study of professionally-centered course enable to accomplish the following:
1) to ensure the quality of foreign language knowledge and skills by supporting the native language of the student; similar typological characteristics of native and foreign languages;
2) to consider the cognitive-mental and ethnopsycholinguistic features of Kazakh and Russian groups in the modeling of learning material;
3) to enrich active vocabulary and terminology of three languages (Kazakh, Russian and English) in connection with the expansion of the studied problems.

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References
1. New Kazakhstan in the new world. Address of President Nursultan Nazarbayev to the people of Kazakhstan. Date Views 01.02.2013 www.kazakhemb.org.il/?CategoryID=250&ArticleID=55 1&Page=1.
2. Law of the Republic of Kazakhstan "On Education". Astana, 2012 .
3. State Program of Education Development in the Republic of Kazakhstan for 2011. Date Views 01.04.2013 www.edu.gov.kz/.../program_2020_english_0.
4. State educational standards of the Republic of Kazakhstan. Date Views 01.06.2013 www.edu.gov.kz/.../.
5. State program for functioning and development of languages for 2011-2020. Date Views 01.06.2013 kze.docdat.com/docs/1456/index.
6. Malathy,P., 2009. Teaching Technical Jargon through Word Formation to the students of Engineering and Technology – Problems and Some Perspectives on Strategies. Language in India, 9. Date Views 01.06.2013
7. Coxhead, A., 2000. A new academic word list.TESOL, 34(2): 213–238.Raissova, A.., 2010. English for Specific Purposes. Pavlodar: Kereku, S. Toraighyrov PSU, pp: 112.
8. Raissova, A.B., L.B. Askarova and D.K. Mubarakova, 2008. English-Russian-Kazakh terminology dictionary on Mathematics, Physics and Computer Science. Pavlodar: Kereku, S. Toraighyrov PSU, pp: 65.
9. Raissova, A.B., N.E. Pfeifer and K.Zh. Smagulova, 2011. E-learning course in English (Certificate on state registration of rights to an object of copyright, No. 007, January 10, 2011). Pavlodar: CIE, S.Toraigyrov PSU.
10. Raissova, A.B. and N.E. Pfeifer, 2011. Electronic textbook "English for Specific Purposes" (Certificate on state registration of rights to an object of copyright, No. 874, 6 June, 2011. Pavlodar: CIE, S. Toraigyrov PSU.
11. Raissova, A.B., N.E. Pfeifer, K.Zh. Smagulova and G.M. Kazhikenova, 2012. Multimedia course "Four Basic Skills" (Certificate on state registration of rights to an object of copyright, No. 979, 20 July, 2012.. Pavlodar: CIE, S. Toraigyrov PSU.

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