

Theoretical-and-Methodological Substantiation of Multilingual Model Activity in Kazakhstan Higher School Education System

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ABSTRACT

The The need of implementing the model of professional development in training an expert in the conditions of multilingualism is considered. The possibility of using the multilingual approach in the context of present day education with the use of innovative technologies of training is substantiated, the definition of "multilingual education" is given.

An important mechanism of the social life humanization becomes the variety of cultures and educational systems in the conditions of globalization. The main component of multicultural education is multilingual training which pedagogical principles are the principle of unity and integrity of cultures, the principle of balance between uniqueness, originality of cultures, languages and the world tendency to unification.

KEYWORDS

Language policy, multilingual education, multicultural environment, integration, innovation technologies, study, cross-cultural communication

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Introduction

The relevance and the importance of this problem for present day civilization have to do with the educational practice of the world community.

Multilingualism is becoming a social phenomenon governed by the needs of globalization and cultural openness [1].

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According to the UNESCO, the concept of "polylingual education" or in the other words of "multilingual education" assumes the use in education of at least three languages: native, regional or national and international [2]. As it is noted in the UNESCO documents, the states should work in order "to provide granting necessary resources and to take necessary measures for reducing language barriers, ... to develop the active national policy directed to the assistance of teaching languages including native languages, in the cyberspace" [2]. In this case we speak of the multilingual education system where alongside with the native language there is used the second and third languages as a means of training and multicultural education.

The use of these languages is "an important factor of the inclusivity and quality of education".

There should be noted a special role of language policy and the principle of multilingualism in developing the European Union. In 1995 the European Commission published an official report on the matters of education in which there was defined the aim of trilingualism of all the European citizens. The Commission emphasized the importance of multilingual skills of communication in the conditions of the uniform market in the information century [3]. Linguistic and cultural diversity of the European Union is one of its major assets, but also one of its main challenges. Throughout the last decade, European multilingualism policy has been guided by the objective set by the Barcelona Council of March 2002, which called for the improvement of mastery of basic skills, in particular, by teaching at least two foreign languages from a very early age. It has also been shaped by the Commission Communication 'Multilingualism: an asset for Europe and a shared commitment' (2008) and by the Council Resolution on a European strategy for multilingualism (2008). These strategic documents established language policy as a cross-cutting topic contributing to all other EU policies [4].

Methods

The following methods have been used in the research: theoretical search (analysis, comparison, classification and systematization of theoretical and experimental data, theoretical modeling and synthesis of data); empirical (diagnostic: questioning, rating method, self-assessment, poll, interview, conversation); observation (supervision, introspection); predictive (expert estimates, modeling); experimental (stating and forming experiments); statistical processing of results.

In the present day political, social-and-economic and educational situation in Kazakhstan the problem of multilingual education gains a basic importance. Without its solution it is impossible to carry out the complete updating of higher education taking into account the variety of cultures, readiness for a cross-cultural dialogue in complicated conditions of developing present day civilization.

Today, when in Kazakhstan on the wave of social updating, aspirations to the open society and integration into the world and European cultural and educational space, there is a positive experience of introducing multilingual education. So, on September 1, 2015 there functioned 20 Nazarbayev Intellectual Schools which were the base for promotion of multilingualism, distribution of experience of cross-cultural education of the younger generation.



For example, in Canada, Belgium, Switzerland there traditionally exists the natural multilingual environment; in the USA there is also taking place an intense process of ethnic minorities integration into the dominating language environment.

In the light of this the development of multilingual training in the Republic of Kazakhstan is determined not so much by the internal processes as the general tendency to integration, aspiration to a dialogue of cultures and cross-cultural communication.

At present there is developed a broad legal base at the state level. The concept of developing multilingual education in the Republic of Kazakhstan is staticized by the following acts: the Constitution of the Republic of Kazakhstan, the Law of the Republic of Kazakhstan "About languages", the Law "About Education", the State program of languages functioning in the Republic of Kazakhstan for 2001-2010, the Concept of developing foreign-language education of the Republic of Kazakhstan [5-10] which defined the role and the place of multilingual training, the principles of developing the present day effective control system of multilingual education. In this regard the state programs on preservation, studying, development of languages are the most effective mechanisms of implementing the declared ethno-cultural rights in the Republic of Kazakhstan. There appeared the so-called "language boom" which influenced the status of the language as the subject giving a chance to take the advantages of the open society. Respectively the new language policy of Kazakhstan dictates an active use of three languages: Kazakh as the state one, Russian as the official one, English as the international, dictated by the world economy and informatization.

In accordance with this there is required a scientific trend integrating the theoretical-and-methodological, scientific-and-methodological bases of using three interacting language systems and permitting to give a comprehensive justification of the problem of a multilingual model in the education system of higher school. The uniqueness of the language situation which developed in Kazakhstan requires an uncommon approach to the solution of methodological problems of teaching languages. In particular, it is necessary to consider a special structure of the culturological component in the program of teaching any language that in turn defines the need of developing new principles and methods of selection and organization of the training material.

The solution of this large and already rather complex problem should be begun with the terms relating to fundamental concepts. The most fundamental concept of the terminological system sorted by us is the concept of "polylingual education". In interpreting this major term there are just most of all confusions, though, as we know, unambiguity, i.e. correlation of the term with one concept of this system is an obligatory property of the term, the guarantee of achieving mutual understanding in the corresponding area.

The fundamental term "polylingual education" is in close connection with the derivative term "multilingual education" which in turn is a calque of the English term. In scientific literature alongside with the term "polylingual education" there are met ideographic synonyms (i.e. the terms showing a concept by its different signs): "bilingualism", "multilingualism".

In the works of domestic researchers Zh. M. Abdildin, K. E. Kuserbayev, A. N. Nysanbayev, B. Chasanoff, M. E. Yerzhanov [11-15] there are considered

the issues of polylingualism and multilingualism in the society, the problems of the nation- focused education in the Republic of Kazakhstan.

Multilingualism is used in a lot of meanings and is understood differently. We adhere to understanding multilingualism as "the use of several languages within a certain social community (first of all of the entire state); the use by an individual (group of people) of several languages each of which is selected according to the concrete communicative situation" [16].

In our opinion, there can be considered quite accepted the definition of "polylingual education" of the known domestic linguist B. A. Zhetpisbayeva: "Polylingual education is a purposeful, organized, normalized triune process of training, education and development of an individual as a poly-language personality on the basis of simultaneous acquisition of several languages as a "fragment" of the socially significant experience of the mankind embodied in the language knowledge and abilities, language and speech activity as well as in the emotional-and-valuable relation to languages and cultures" [17].

Foreign concepts of polylingual education are considered in the works by José Manuel Vez (2009) [18], cross-cultural education in the works by P. Batielang, G. Auernkhaymer, V. Niyen, etc., global education in R. Henvie's works.

Conceptual bases of polylingual education are developed in the works by Cenoz J., Coste D., Simon D. Lee, Coyle D., etc. [19-21].

The world outlooks of this study are defined by the philosophical doctrines of the great Kazakh thinker A. Kunanbayev directly related to the problem of the personality and its formation, the essence of the sociological concept of Sh. Valikhanov, as well as the ideas of the Kazakh educators and teachers Y. Altynsarin, Zh. Aymaulytov, A. Baytursynov, M. Zhumabayev, etc. permitting to realize the importance of the native language in developing a personality.

Our justification of the problems in the field of polylingual education was based on scientific developments of GoverdovskayaYe. V. [22], Baker C., Byram M. S., Casanave C. P., Bartlett L., Lantolf, J. P., Thorne S. L. etc. [23-27], and also number of foreign researchers of Canagarajah S., Coetzee-Lachmann D., Gajo L., García Ofelia, Kleifgen J. [28-31].

Studying the international and domestic experience of multilingual training in the system of secondary education showed that in the Republic of Kazakhstan there are various approaches, but the uniform concept has not been developed. The formation of a multilingual personality is possible with a certain organization of the educational process, with special selection of the contents, the principles of training, the development of a special technology providing the corresponding planning, training and tracking the results of this training.

However so far in the system of secondary and higher education there is no an accurately organized succession and continuity of polylingual education that is the main component providing the efficiency and quality at all the levels including the level of higher education. Such a situation was in a certain extent caused by the following factors:

- the uncertainty of the state concept in the field of multilingual education;
- insufficient readiness of conceptual approaches to the content of language disciplines and their organization in the context of general education and profession-oriented tasks;



- the deficiency of the personnel structure capable to provide completely professional teaching languages in the system of profile higher education;
- the need of training, retraining, professional development of teachers of language and not language disciplines with didactic ensuring the activity of subjects of multilingual education;
- the need of developing a research center for problems of multilingual education for the purpose of scientific support of its practical implementation, introduction in the experimental mode of training in three languages, as well as their material equipment with the subsequent generalization of the results of experiments and the development of recommendations on the formation of a multi-language personality and to large-scale introduction of multilingual education.

Besides, for the effective introduction of a multilingual model in the education system of higher school there is required achieving a high level of proficiency in the Kazakh language as the state one, preserving the Russian language social-and-linguistic activity, the development of English as a means of integration in the world space.

The theoretical basis of preparing a multilingual model in the education system of higher school contains the following contradictions:

- discrepancy of the existing qualification requirements and characteristics to the requirements of the multilingual expert;
- absence of the standard and program-and-methodological support of multilingual education;
- absence of the uniform concept of training multilingual experts on the basis of the competence-based approach;
- insufficient study of the experience of foreign countries in introduction of multilingual education;
- not readiness of the mechanism of assessing the multilingual expert's work productivity.

From this point of view in training, as in any human activity, there are usually allocated the following structural components: the target, the demand-motivational, substantial, operational-and-activity, emotional-and-willed, control-and-adjusting and estimated-and-productive ones. Having analyzed various approaches, we propose to organize the educational activity of future experts in the conditions of multilingualism as a system of interconnected components: personal-and- motivational, substantial, procedural, psychological.

The theoretical model of vocational training a multilingual expert is presented in Table 1.

The personal-and-motivational component carries out a regulatory function. The motivation adequate to the purposes of innovative activity will provide the increased conscious interest in studying the Kazakh, Russian and English languages. As a criterion we designated the existence of the need for studying languages by future experts. The indicators of this criterion are as follows:

- for implementation of professional activity;
- for satisfaction of the requirement of daily communication;

- interest in language as to a specialty language;
- for receiving prestigious work;
- for education.

Table 1. Theoretical model of vocational training an expert in the conditions of multilingualism in the Republic of Kazakhstan

Components			
Personal-and-motivational	Substantial	Procedural	Psychological
<p>Interest in studying the Kazakh, Russian, English languages</p> <ul style="list-style-type: none"> - interest in a language as a specialty language; - studying a new culture; - access to information sources 	<p>Knowledge of general scientific and applied disciplines</p> <ul style="list-style-type: none"> - possession of compensatory abilities, i.e. using own speech experience in language acquisition; - adaptation to the native and foreign speech; - overcoming stereotypes of a foreign language difficulties <p>Development of language competence:</p> <ul style="list-style-type: none"> - ability to greet, say goodbye, get acquainted, to ask; - ability to answer, represent itself; - ability to express consent, refusal, request, attitude 	<p>Educational skills and abilities</p> <ul style="list-style-type: none"> - use of the acquired material in phonetic, grammatical, lexical aspects within the initial stage of training for information transfer <p>Informative abilities:</p> <ul style="list-style-type: none"> - overcoming language difficulties; - reflection over the process of learning - planning and generalization 	<p>Adaptation to new socio-cultural conditions</p> <ul style="list-style-type: none"> - overcoming psychological barriers in direct contacts with native speakers <p>Psychological stability:</p> <ul style="list-style-type: none"> - ability to introspection, self-correction; - assessment of the educational activity; - understanding of the gained knowledge
<p>Awareness of the importance of Russian and English as means needed for adequate communication and mutual understanding:</p> <ul style="list-style-type: none"> - employment by means of electronic labor exchange; - receiving consultations of leading experts 	<p>Activation of speech experience:</p> <ul style="list-style-type: none"> - developing different strategies and methods of mastering Kazakh, Russian, English 	<p>Creative approach to practical activities:</p> <ul style="list-style-type: none"> - performance of tasks of a creative character 	<p>Organization of cross-cultural communication:</p> <ul style="list-style-type: none"> - openness and readiness for learning a foreign culture; - ability to overcome stereotypes(social, cultural, ethnic)
<p>Prospect of mastering the Kazakh, Russian, English languages:</p> <ul style="list-style-type: none"> - access to education in the Republic of Kazakhstan and abroad 	<p>Activation of speech experience:</p> <ul style="list-style-type: none"> - developing different strategies and methods of mastering Kazakh, Russian, English 	<p>Creative approach to practical activities:</p> <ul style="list-style-type: none"> - performance of tasks of a creative character 	<p>Organization of cross-cultural communication:</p> <ul style="list-style-type: none"> - openness and readiness for learning a foreign culture; - ability to overcome stereotypes(social, cultural, ethnic)

The second important component of developing a model of a multilingual expert is a **substantial** one as experts are to possess a certain level of language competence. As a criterion of this component we noted the existence of language



competence which contents at the initial stage of studying languages includes the knowledge in the field of phonetics, word formation, morphology, syntax. The indicators of this component are as follows:

- ability to ask questions;
- to report about a fact or an event, a person or a subject;
- to enter communication, to meet someone, to represent themselves or another person;
- to greet, say goodbye, apologize, to thank;
- to congratulate, to ask once more;
- to express consent or disagreement; request, advice, refusal; the attitude to something, to someone.

The third component is the **procedural** one, representing the acquisition of educational skills by means of innovative technologies of training. The criterion of this component is the ability to use flexibly and effectively the Kazakh, Russian and English languages for understanding and information transfer. We will consider the indicators of this component:

- ability to comprehend a new material;
- ability to overcome language difficulties by means of computer technologies: perfecting articulation, pronunciation;
- ability to organize the educational activity by means of up-to-date technologies of training;
- ability to predict the results of the educational activity;
- ability to plan and generalize.

Beside the above-mentioned components we consider important to allocate the **psychological component** as the characteristic of this aspect is one of the main. The criterion of this component is psychological resistance of future experts to new sociocultural conditions. We will describe the indicators of this component:

- ability to adapt for training conditions at higher education institutions of Kazakhstan and abroad;
- understanding of the purpose of the training at a concrete higher education institution;
- ability to personal self-realization;
- ability to estimate adequately the type of the chosen activity;
- adequacy of the assessment of foreign mentality;
- ability to build interpersonal relations;
- ability to be guided quickly in an unfamiliar sociocultural situation;
- the benevolent relation from the teacher;
- absence of negative psychological pressure in their address in transport, in shops, in the street.

Thus, the substantial characteristic of the components revealed by us shows that there is needed implementation of the model of professional development in training an expert capable for mediation between different cultures, for

organization of cross-cultural communication on the basis of multilingual education.

The Results

In the course of developing our model we decided to carry out a pilot survey for the purpose of determining the effectiveness of the chosen technique of research and its ability to obtain reliable data. In the pilot questioning there was specified the course of the main experiment and checked the efficiency of this or that present day used in practical classes. We asked the students who were trained in multilingual groups to answer the following question:

What methods used in classes promote the best assimilation of languages? Give the assessment proceeding from the seven-point scale.

1. A class in which by means of computer technologies there were practiced phonetic and lexical and grammatical skills.

2. A class in which there was developed a design activity.

3. A class in which there was simulated a special game activity.

4. A class in which there were used problem and search situations.

5. A class in which there was an intensive studying of grammatical material.

6. A class in which there was carried out the collective analysis of the text material.

1 – ineffective

2 – has but weak effect

3 – not very effective

4 – insufficiently effective

5 – effective

6 – has a strong effect

7 – very effective

Table 2. Which of the following technologies do you think must be used in teaching Kazakh, Russian, English?

1. Information technologies									
Don't agree	1	2	3	4	5	6	7	agree	
2. Design technologies									
Don't agree	1	2	3	4	5	6	7	agree	
3. Game technologies									
Don't agree	1	2	3	4	5	6	7	agree	
4. Situational problem solving									
Don't agree	1	2	3	4	5	6	7	agree	
5. Intense technologies									
Don't agree	1	2	3	4	5	6	7	agree	
6. Cognitive technologies									
Don't agree	1	2	3	4	5	6	7	agree	



We took two measurements from one sampling and tried to establish how there changed the sign values upon transition from the first measurement to the second one: whether indicators changed towards the improvement, increase, strengthening or, on the contrary, towards deterioration, decrease or weakening. We used the parametrical criterion, the criterion of G signs as it permits to establish how there changed the sign values upon transition from the first measurement to the second one: whether indicators changed towards the improvement, increase, strengthening or, on the contrary, towards deterioration, decrease or weakening (Table 2, 3, 4).

Table 3. Assessment of the extent of consent with the statement of the effectiveness of using these technologies before and after their presentation in the experimental group (n= 16).

		Marks and their shifts("after" - "before") on scales																		
		Information technologies		Design technologies		Game technologies		Situational problem solving		Intense technologies		Team learning								
		Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After			
1	3	3	0	4	4	0	3	4	+1	4	4	4	4	0	5	6	+1	1	1	0
2	1	4	+3	3	4	+1	4	5	+1	4	4	4	4	0	6	7	+1	1	1	0
3	4	5	+1	2	3	+1	4	6	+2	5	5	5	0	0	7	7	0	2	1	-1
4	4	5	+1	1	2	+1	3	5	+2	6	7	6	7	+1	4	5	+1	1	2	+1
5	5	6	+1	4	4	0	4	4	0	7	7	7	0	0	3	4	+1	1	2	+1
6	3	3	0	5	5	0	5	5	0	4	5	4	5	+1	5	5	0	2	2	0
7	4	4	0	4	4	0	6	7	+1	4	4	4	5	+1	4	4	0	2	2	0
8	6	7	+1	3	4	+1	4	5	+1	3	4	3	4	+1	3	4	+1	1	1	0
9	4	5	+1	4	5	+1	7	7	0	2	4	2	4	+2	4	5	+1	3	3	0
10	7	7	0	3	4	+1	3	4	+1	4	5	4	5	+1	3	4	+1	1	2	+1
11	2	3	+1	2	4	+2	4	5	+1	5	6	5	6	+1	4	5	+1	2	3	+1
12	3	4	+1	1	3	+2	6	7	+1	4	4	4	4	0	4	5	+1	1	1	0
13	4	5	+1	4	5	+1	5	6	+1	5	5	5	5	0	5	6	+1	1	1	0
14	3	4	+1	4	5	+1	3	4	+1	5	6	5	6	+1	5	6	+1	1	1	0
15	5	5	0	5	4	-1	5	6	+1	6	7	6	7	+1	5	6	+1	1	1	0
16	4	5	+1	6	6	0	5	6	+1	6	7	6	7	+1	5	6	+1	1	1	0



Table 4. Assessment of the extent of consent with the statement of the effectiveness of using these technologies before and after their presentation in the experimental group (n= 25).

	Information technologies			Design technologies			Game technologies			Situational problem solving			Intense technologies			Team learning		
	Before	After	Shift	Before	After	Shift	Before	After	Shift	Before	After	Shift	Before	After	Shift	Before	After	Shift
1	3	3	0	1	1	0	1	2	+1	1	1	0	2	2	0	1	1	0
2	4	4	0	2	2	0	2	2	0	2	2	0	2	2	0	1	1	0
3	4	5	+1	1	1	0	1	2	+1	2	3	-1	4	4	0	1	1	0
4	3	2	-1	1	1	0	1	2	+1	3	3	0	3	3	0	2	2	0
5	1	2	+1	2	2	0	1	1	0	3	5	+2	1	2	+1	1	1	0
6	2	3	+1	1	1	0	3	3	0	2	4	+2	1	2	+1	1	2	+1
7	2	2	0	1	1	0	2	4	+2	2	2	0	1	0	-1	1	2	+1
8	3	3	0	2	2	0	2	3	+1	1	0	-1	2	2	0	1	2	+1
9	4	4	0	1	2	+1	2	3	+1	1	2	+1	2	2	0	2	2	0
10	4	4	0	3	4	0	3	3	0	2	2	0	2	3	+1	2	2	0
11	5	5	0	1	2	+1	1	1	0	2	3	+1	3	3	0	2	2	0
12	4	4	0	1	0	-1	2	2	0	3	4	+1	3	3	0	2	2	0
13	3	3	0	1	1	0	2	2	0	3	4	+1	1	1	0	1	1	0
14	5	6	+1	2	2	0	1	1	0	2	3	+1	1	1	0	1	1	0
15	4	3	-1	1	2	+1	2	2	0	3	3	0	1	1	0	1	1	0
16	3	4	+1	1	2	+1	2	2	0	3	3	0	1	1	0	1	1	0
17	3	3	0	2	2	0	3	4	+1	4	4	0	1	1	0	1	1	0
18	4	4	0	2	2	0	3	3	0	3	3	0	1	2	+1	1	1	0
19	4	4	0	3	3	0	3	3	0	3	3	0	3	3	0	1	1	0
20	3	4	+1	4	4	0	4	4	0	2	3	+1	4	4	0	1	1	0
21	4	4	0	3	3	0	4	3	-1	2	2	0	3	2	-1	2	2	0
22	3	3	0	4	4	-1	3	4	+1	3	3	0	3	3	0	1	1	0
23	5	5	0	4	5	+1	3	3	0	3	3	0	3	3	0	1	1	0
24	4	4	0	3	3	0	4	4	0	2	2	0	4	3	-1	1	1	0
25	5	5	0	3	3	0	3	3	0	1	2	+1	2	3	+1	1	2	+1

Table 5. Calculation of the number of positive, negative and zero shifts in two groups

Number of shifts in groups	Scales						Sums
	Information technologies	Design technologies	Game technologies	Problem-search situations	Intense technologies	Team learning	
1. Experimental group							
a)positive	11	10	13	10	13	4	61
b)negative	0	1	0	0	0	1	2
c)zero	5	5	3	6	3	11	33
sums	16	16	16	16	16	16	96
2. Control group							
a)positive	6	6	8	9	5	4	38
b)negative	2	2	1	2	3	0	10
c)zero	17	17	16	14	17	21	102
sums	25	25	25	25	25	25	150

From Table 5 it is seen that "zero" shifts, that is the absence of shifts in the estimates after application of present day technologies are the most typical.

Discussion

We need to consider only positive and negative shifts, and to reject zero ones. At this the number of the compared couples of values decreases by the number of these zero shifts G_{atypical} . is the number of atypical shifts. The smaller G_{atypical} , the larger the probability that the shift in the typical direction is statistically reliable.

We will consider the experimental group.

Now for the scale "Information technologies" $n = 11$, for the scale "Design technologies" $n = 12$, for the scale "Game technologies" $n = 13$, for the scale "Problem and search situations" $n = 10$, for the scale "Intense technologies" $n = 13$, for the scale of "Team learning" $n = 5$.

We can check the hypothesis of positive shifts prevalence in the answers by the sum of 6 scales. The sum of positive and negative shifts on 6 scales makes: $11+11+13+10+13+5 = 63$.

Let's formulate hypotheses for the experimental group:

H_0 : Shift towards the effectiveness of using present day technologies is casual.

H_1 : Shift towards the effectiveness of using present day technologies is not casual.

1) scale "Intense technologies"

$$n = 11$$

The typical shift is positive.

There are no negative shifts.

$$G_{\text{kp}} \begin{cases} 1 (p \leq 0,05) \\ 0 (p \leq 0,01) \end{cases}$$

H_0 is rejected. There is accepted $H_1(p \leq 0,01)$

2) scale "Design technologies"

$$n = 11$$

The typical shift is positive.

There is one negative shift.

at the given p cannot be defined.

H_0 is rejected. There is accepted $H_1(p \leq 0,01)$

3) scale "Game technologies"

$$n = 13$$

The typical shift is positive.

There are no negative shifts.

H_0 is rejected. There is accepted $H_1(p \leq 0,01)$

scale "Situational problem solving"

$$n = 10$$

The typical shift is positive.
There are no negative shifts.
 H_0 is rejected. There is accepted $H_1(p \leq 0,01)$

4) scale “**Intense technologies**”

$$n = 13$$

The typical shift is positive.
There are no negative shifts.
 H_0 is rejected. There is accepted $H_1(p \leq 0,01)$

5) scale “**Team learning**”

$$n = 5$$

The typical shift is positive.
There is one negative shift.
at the given n cannot be defined.
 H_0 is rejected. There is accepted $H_1(p \leq 0,01)$

The sum for 6 scales is $n = 63$

The typical shift is positive.
There are two negative shifts.
 H_0 is rejected. There is accepted $H_1(p \leq 0,01)$

Conclusion: The shift towards the effectiveness of using present day technologies in the experimental group is not casual by the sum of 6 scales ($p \leq 0,01$).

Let’s formulate the hypotheses for the control group:

H_0 : The shift towards the effectiveness of using present day technologies is casual.

H_1 : The shift towards the effectiveness of using present day technologies is not casual.

1) scale “**Information technologies**”

$$n = 8$$

The typical shift is positive.
There are two negative shifts.
 H_0 is accepted.

2) scale “**Design technologies**”

$$n = 8$$

The typical shift is positive.
There are two negative shifts.
at the given p cannot be defined.
 H_0 is accepted.

3) scale “**Game technologies**”

$$n = 9$$

The typical shift is positive.
There are two negative shifts.



H_0 is accepted.

4) Scale “**Situational problem solving**”

$$n = 11$$

The typical shift is positive.

There are two negative shifts.

H_0 is accepted.

H_0 is accepted.

5) Scale “**Intense technologies**”

$$n = 8$$

The typical shift is positive.

There are three negative shifts.

H_0 is accepted.

6) Scale “**Team learning**”

$$n = 4$$

Since $n = 4$, the sign criterion is not applicable.

The sum for 6 scales is $n = 48$

The typical shift is positive.

There are eleven negative shifts.

H_0 is accepted.

Conclusion: The shift towards the effectiveness of using present day technologies in the experimental group is casual by the sum of 6 scales ($p \geq 0,01$).

We can answer definitely that in the experimental group there is observed a reliable shift in favor of the larger acceptance of the effectiveness of using innovative technologies in teaching the Kazakh, Russian and English languages. In the control group there are no reliable shifts. The statistical criterion testifies that a positive shift in estimates is reliable. Thus, the introduction of innovative technologies in the process of training experts in the conditions of multilingualism expands the opportunities in improving cross-cultural communication.

Conclusions and Recommendations

The model proposed by us is, certainly, universal, flexible, individual. A pilot experiment with the use of innovative technologies of training expands the opportunities in improving the language competence and abilities of cross-cultural communication, it is a powerful factor and an effective mechanism for intense innovative search in the educational environment of the Republic of Kazakhstan.

Besides, one of the key moments is carrying out pedagogical, the socio-linguistic, linguistic-and-didactic studies for the purpose of the scientific analysis of the language situation, the development of conceptual bases of multilingual education, studying and synthesis of positive domestic and foreign experience of training multilingualism, as well as the development of evidence-based recommendations.

Justification of multilingual education as an integrative scientific trend will permit to develop its scientific opportunities, as the language policy of the Republic of Kazakhstan puts forward a "reasonable transformation of language culture on the basis of the equal use of three languages: the state, the international and the international communication" ones and permits to carry out a gradual entry into the mobile megacultural world.

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No potential conflict of interest was reported by the authors.

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References

1. McVaugh, Michael. *The importance of multilingualism*. University of North Carolina. <http://multilingualism.org/multilingualism/the-importance-of-multilingualism>.
2. Education in the multilingual world: Adjusting document of UNESCO. Paris, 2003. -38c. http://www.unesco.org/new/ru/media-services/single-view/news/multilingualism_a_key_to_inclusive_education/#.VNbyXufqCJU.
3. Teaching and Learning: Towards the Learning Society. (1995). *European Commission's White Paper*, 1995 Brussels: The European Union.
4. *Key Data on Teaching Languages at School in Europe*. (2012). Education, Audiovisual and Culture Executive Agency. <http://ec.europa.eu/eurostat/en/web/products-statistical-books/-/EC-XA-12-001>.
5. Constitution of the Republic of Kazakhstan of August 30, 1995. <http://adilet.zan.kz/rus/search/docs/va=KOHC>.
6. The Republic of Kazakhstan Law "About languages" of July 11, 1997. <http://adilet.zan.kz/rus/docs/Z970000151>.
7. The Law "About education" of July 27, 2007 No. 319-III. *Kazakhstan Pravda*. 2007. No. 127. August 15.
8. State program of languages functioning in the Republic of Kazakhstan for 2001-2010. *Kazakhstan Pravda*. 2001. No. 47-48. February 17.
9. State program of education development in the Republic of Kazakhstan for 2011-2020. Decree of the President of the Republic of Kazakhstan of 07.12. 2010 No. 1118. - <http://adilet.zan.kz/rus/docs/U1000001118>.
10. Concept of the development of foreign-language education of the Republic of Kazakhstan. Almaty: KazUMOiMY an. a. Abylay khan, 2006. <http://freeref.ru/wievjob.php?id=8721752006>.
11. Abdildin, Zh. M., et al. (1990). *Logic - gnosiological analysis of science*. - Alma-Ata: Gylym, 491 p.
12. Kuserbayev, K. E. (1996). *Ethno-cultural aspects of educational policy of sovereign Kazakhstan / Evolution of Statehood of Kazakhstan*. Almaty. P. 109-112.
13. Nysanbayev, A., Suleymenov F. (1993). Sociocultural choice of model of education, *Thought*, 12, 58-62.
14. Chasanoff, B. (1989). *National languages, bilingualism and multilingualism. Searches and prospects*. Alma-Ata, 133 p.



15. Yerzhanov, M. E. (1999). *Development of ethno-cultural education in Kazakhstan: Theoretical bases and practice.*—Diss. for academic degree of Doc. Sci, code of spec. 13.00.05, Moscow. 429 p.
16. Large Soviet Encyclopedia: Linguistics. (1998). M., 303 p.
17. Zhetpisbayeva, B.A. (2009). *Theoretical-and-methodological bases of polylingual education.* Diss. of Doc. Ed./Karaganda, 46 p.
18. Vez, José Manuel. (2009): *Multilingual Education in Europe: Policy Developments.* *Portaernández Linguarum*, M.^a P. N 12, junio 2009 ÚÑEZ Y A. ROM (http://www.ugr.es/~portalin/articulos/PL_numero12/1JM%20Vez.pdf)
19. Cenoz, Jasone (2009): *Towards Multilingual Education.* Bristol: Multilingual Matters.
20. Coste, Daniel & Simon, Diana-Lee (2009): The plurilingual social actor. Language, citizenship and education. *International Journal of Multilingualism*, Vol. 6, Number 2: 168-185.
21. Coyle, Do (2007): Content and Language Integrated Learning: Towards a Connected Research Agenda for CLIL Pedagogies. *The International Journal of Bilingual Education and Bilingualism*. Vol. 10, No. 5: 543-562. <http://dx.doi.org/10.2167/beb459.0>
22. Goverdovskaya Ye. V. (2009). *Development of higher education in the polycultural region (on materials of the North Caucasus).* Diss. of Doc. Ed. 13.00.08 - Theory and a technique of professional education (pedagogical sciences). St. Petersburg, 40 p.
23. Baker, Colin (2011): *Foundations of Bilingual Education and Bilingualism. 5th edition.* Bristol: Multilingual Matters.
24. Byram, Michael S. (2012). Language awareness and (critical) cultural awareness - relationships, comparisons and contrasts. *Language Awareness* 21 (1-2): 5-13.
25. Casanave, Christine Pearson (2003): *Controversies in Second Language Writing: Dilemmas and Decisions in Research and Instruction* (Michigan Series on Teaching Multilingual Writers). *Ann Arbor: University of Michigan Press.*
26. Bartlett, Lesley / Kleifgen, JoAnne / García, Ofelia/ (2007): From Bilingualism to Plurilingualities. *Handbook of Applied Linguistics*. Vol. 5: Multilingualism, ed. by Peter Auer and Li Wei. Berlin: Mouton/de Gruyter, 207-228.
27. Lantolf, James P. & Thorne, Steven L. (2006): *Sociocultural Theory and the Genesis of Second Language Development.* Oxford: Oxford University Press.
28. Canagarajah, Suresh (2011): Codemeshing in Academic Writing: Identifying Teachable Strategies of Trans languaging. *The Modern Language Journal*, 95, iii: 401–417.
29. Coetzee - Lachmann, Debbie (2009): *Assessment of subject-specific task performance of bilingual geography learners: Analysing aspects of subject-specific written discourse.* Osnabrück: Universität (http://elib.ub.uni-osnabrueck.de/publications/diss/E-Diss864_thesis.pdf).
30. Gajo, Laurent (2007): Linguistic Knowledge and Subject Knowledge: How Does Bilingualism Contribute to Subject Development? *International Journal of Bilingual Education and Bilingualism*, 10(5), 563-581.
31. García, Ofelia/ Kleifgen, JoAnne/ Falchi, Lori (2007): *Education, Multilingualism and Trans languaging in the 21st century.* In *Equity in the Education of Emergent Bilinguals: The case of English Language Learners.* Teachers College, Columbia University: Campaign for Educational Equity, 140-158.