



Студенттер мен жас ғалымдардың
«ҒЫЛЫМ ЖӘНЕ БІЛІМ - 2018»
XIII Халықаралық ғылыми конференциясы

СБОРНИК МАТЕРИАЛОВ

XIII Международная научная конференция
студентов и молодых ученых
«НАУКА И ОБРАЗОВАНИЕ - 2018»

The XIII International Scientific Conference
for Students and Young Scientists
«SCIENCE AND EDUCATION - 2018»



12th April 2018, Astana

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The proceedings are the papers of students, undergraduates, doctoral students and young researchers on topical issues of natural and technical sciences and humanities.

В сборник вошли доклады студентов, магистрантов, докторантов и молодых ученых по актуальным вопросам естественно-технических и гуманитарных наук.

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scanty and fragmentary, which creates a barrier to the full comprehensive study of the Arabic language from the point of view of the development of Arabic linguistics.

According to the available materials, we came to the conclusion that the ancestral Arabic language in antiquity had close ties with the Aramaic, which later became the basis of the modern language. Pure Arabic language it is, in the main, literary language, the language of poetry. Today, in each of the 22 Arab countries, there are significant differences in the dialects, which make communication between Arabs and foreigners difficult and complicated, given the fact that not everyone knows the literary classical language or local dialects.

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TRILINGUALISM AS A WAY TO COMPUTER LITERACY

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Greetings from one of the luckiest generations in the world. Nowadays we have everything and anything we can wish for. New era, new technologies give us so many opportunities. We live in the digital world. As our first president said in his yearly message: «Today the world is entering the era of the Fourth Industrial Revolution, an era of profound and rapid changes: technological, economic and social. New technologies significantly change the way we work, exercise our civil rights, and raise children. Also he mentioned the term “digital Kazakhstan“.

What is digital Kazakhstan?

In today's world, digital technology plays an increasingly important role in the development of countries' economy. Even today, more than 40% of the world population have access to the Internet, and almost every 7 out of 10 households have a mobile phone. Digital technologies have a number of advantages – simplification of the public and business access to public services, the acceleration of the information exchange, the emergence of new business opportunities, the creation of new digital products, etc.

The main goal of the government program “Digital Kazakhstan” is the improvement of the competitiveness of Kazakhstan's economy and quality of life through the progressive development of the digital ecosystem.

The implementation of the State Program “Digital Kazakhstan” will be held in **four key areas**:

1. Creating a “**Digital Silk Road**”. This is the development of the reliable, affordable, high-speed, secure digital infrastructure.
2. Creating a “**creative society**”. This is the development of competences and skills for the digital economy, the upgrading of digital literacy, training of ICT specialists for industries.
3. **Digital transformation in the economy branches**. It is the wide spread introduction of

digital technology to enhance the competitiveness of various branches of the economy.

4. Formation of “**Proactive digital government**”. This is the improvement of electronic and mobile government systems, optimization of the public services supply sphere.

Besides, in his message the head of our state underlines the importance of trilingualism. What is trilingualism? In my understanding trilingualism is when a person is able to use three languages, with almost equal fluency. However, how can trilingualism contribute to the development of digital Kazakhstan? The answer is plain and simple. Digital Kazakhstan is all about technologies. Technologies are all about information. More languages we know, more information we get.

Our kazakh language is wonderful. It is a part of our soul, but to be honest, it is not enough for evolution. And we should admit it. For example, let us say we are doing some study research. Looking for some useful information in Kazakh language will definitely give us some results, but the other kid who will search both in Kazakh and Russian sources, will find more information, that will lead him to better understanding of this topic, and one using three languages doing his research 100% will be the most successful. More languages you know more sources you will have and subsequently more information. In order to develop digital Kazakhstan we should increase our computer literacy.

The research issue of this article is “**trilingualism as a key to computer literacy**”.

Today, computer literacy is a new literacy and an essential life skill. Computer literacy is the ability to use computers and related technology efficiently, with a range of skills covering levels from elementary use to programming and advanced problem solving. To be more clear computer literacy is defined as the ability to use basic computer applications to accomplish everyday tasks. Our generation is trying to be the part of progress and to be trained in computer literacy. I can surely say that we are succeeding in this sphere. Ten years ago computer literacy was the privilege of a few experts. Nowadays, even a little kid knows basics of the computer. Isn't it awesome? Why? you will. Because our generation has more opportunities to learn new languages, to learn more languages and have open access to all the desirable information.

In order to demonstrate the effect of trilingualism on computer literacy, I have made survey among students of S. Seifullin Kazakh Agrotechnical University, Suleyman Demirel University and L. N. Gumilyov Eurasian National University's students. Students are both from computer related and non-specialities.

The survey included among others questions like:

- 1) Can you imagine your life without technologies?
- 2) How many languages do you know?
- 3) What language do you use the most while looking for information?
- 4) How many computer languages do you know?

The results of survey showed that:

1) 93% of respondents couldn't even imagine their lives without technologies
2) 30% of respondents claimed, that they know 3 languages (Kazakh, Russian, English), 45% of them know 2 languages (Russian, Kazakh), 17% speak only 1 language (Kazakh or Russian), 8% know more than 3 languages.

1) 68% of respondents use Russian, 24% use English, and 8% use the Kazakh language.
2) 48% know how to use Java, 15% experts in Python, 12% use SQL, 9% do not even know what is the computer language, 16% know PHP.

The results of this survey also revealed, that those who knows 3 or more than 3 languages are most likely to know the most important computer languages. Those who are good at coding said that in order to understand the program they should know at least the basics of English because, as we know the motherland of IT technologies is America, so obviously its native language is English. Besides, some computers do not even recognize any other languages except English, so not knowing it can cause a very big problem. To master another language is like to possess a second soul and knowing English we will possess a soul of computer literacy.

What advantages does computer literacy present?

I think it is fair to say that personal computers have become the most empowering tool the

mankind has ever created. They are tools of communication, they are tools of creativity, and they can be shaped by their user.” – Bill Gates

There is a new language emerging. Words such as coding, HTML and web design may have us approaching this world with a mixture of dread and fascination. The reality is that the children we bring into the world today will be the digital natives and influencers of tomorrow.

1. Computer Literacy addresses the Gap in your knowledge

A little training in basic computer skills helps you much in your career. Digital skills training has a way of opening doors and directing dreams. The world is moving toward digital education faster than the blink of an eye. If you want to get ahead it pays to adopt the mind-set of the new digital natives.

2. Computer Literacy supports Entrepreneurship.

With a whole new world that is literally at your fingertips, doesn't the prospect of your own development get your pulses racing? Being computer literate will open your mind to new ideas, boost your self-confidence and help you innovate. All you need is an internet connection, a PC or laptop and a bit of business sense and you can be streets ahead. Now, more than ever, tech skills for entrepreneurs are of a great importance.

3. Depolarization of the office space is a new and real phenomenon.

Depending on your industry and if you have the option to do so, you can easily work from home, a holiday destination, the beach or anywhere else that you choose.

4. Computer literacy skills command innovation

As you get savvier with your computer skills, you will be inspired to innovate, experiment, try new things and get ahead in your industry. New apps, new coding programs, blogging... the digital world is yours for the taking.

5. The importance of Computer literacy in education

Computer literacy helps immensely in allowing the students navigate the technologies needed to engage with online learning platforms

6. Enhances job opportunities

Before a student enters the working world it is imperative that they receive some kind of computer skills training. Computer literacy prepares students for the norms and algorithms of the business world. Having some level of computer literacy enhances job opportunities. You can easily study a Short Programme in Fundamentals of Microsoft Office to help you on your way.

7. Communication

It goes without saying that business world involves a great deal of communication. Both interpersonally and electronically. E-mails, presentations, workshops, skype calls and so on. There is always a level of computer literacy involved. Computer literacy is a new currency that will help pave our path to our career and personal development. Isn't it time to bring ourselves up to date? In order to do it the main components that we need are our knowledge in this sphere and trilingualism.

So how can we improve usage of trilingualism in computer sphere?

First of all, we should learn ITC in its native language. For example in Nazarbayev University, Eurasian National University and in Suleyman Demirel University students learn it in English.

To be honest, for me it was very effective. Now I know basics of ITC in English and coding is not a problem for me anymore. However, I think we should start this process earlier, from school. I used to study this subject at school. I used to understand, but not as good as in English. The same situation is with my friends. So in my opinion we should learn this subject in its native language from the very beginning.

As an example, we can take Australia, pretty well developed in ITC sphere. In 2017 International students, studying in Australia reached a record number totaling 583,243, an increase of more than 10% on the previous year. It is due to the effective education system that includes learning ITC in its native language. I think, that using this technic will only lead to success. I asked several people whether this idea is right? A lot of them (70%) disagreed with me on this subject. Because they think that we don't have such experts, that can explain the concept of Information

technologies to the younger generation. Others (30%) support me on this idea and believe that this could make it easier in the future. As an example, they mention students from Nazarbayev Intellectual school or KTL.

Secondly, we should exchange the experts and knowledge with other countries. I know that universities have such an experience. However, we should do it in schools too. Every developing country is on this path, every country has its strong qualities and we can share with each other.

Our goal as a nation is to get there.

However, what **can I do** as an individual **to contribute** to the **effective implementation** of trilingualism in Computer literacy? I know that it is just an idea. But ideas lead to actions. So I would like to introduce a source for learners, that will improve their computer literacy. This resource will have all the information about IT technologies in English, Russian and Kazakh languages. **Firstly**, all the users will cultivate their language skills. **Secondly**, it will be more convenient for them. **Thirdly**, it will be absolutely free and users won't spend much time while searching from other recourses because everything will be collected in one place. I cannot tell exactly when this project will officially come to existence, but I hope that by 2019 we will enjoy it and take benefit from this project. I was inspired to this project while studying to my ICT exam. There was a variety of information on the internet, but the main issue – it was not organized well. I wasted much of my precious time organizing, categorizing, and translating some terms. This project needs a lot of time, money and patience. Besides, I need to learn more about creating web pages, because I am not an IT expert, I am studying law. However, I think that Computer skills are important for everyone no matter you are a housewife or president.

To raise the generation of future entrepreneurs, lawyers, doctors, scientists or any other specialists, we should foster the environment from the young age that promotes computer and trilingual learning.

The computer and communications skills that your child learns in early life will be foundation for his or her communication abilities in the future. Strong language skills are an asset that will promote a lifetime of effective communication. We need to incorporate more technologies into the classrooms, so that students will have more opportunities to explore learning. This increases motivation and students engagement as well.

Technology is a very big part of language learning throughout the world at all levels. Gary Motteram, editor of the British Council publication Innovations in learning technologies for English language teaching, explains how the arrival of digital technologies in the classroom has helped learning. The benefits of technology in language learning, that is integrated with **project work**.

We have always tried to encourage learners to learn about things through language. Getting learners to do work about topics that are of interest to them is a great way to improve their skills. Technology makes this possible wherever you are in the world. Teachers and learners can go online to read or listen to material about different areas of interest, and can then write or speak about what they have discovered, telling others in the class or other classes elsewhere in the world.

The perfect example of multilingual successful man in Computer industry is Mark Zuckerberg. He speaks English, French, Mandarin Chinese, Latin, Hebrew, Ancient Greek. Mark Elliot Zuckerberg is an American computer programmer and Internet entrepreneur. He is a co-founder of Facebook, and is currently its chairman and chief executive officer. He achieved so much in his life. And he says that he trains his brain, by learning languages. Actually, we have several experiments that prove that knowing more languages makes you smarter. It affects the development of the brain multifactorial executive control system. The trilingual brain is used to handling two languages at the same time. This develops skills for functions such as inhabitation switching attention and working memory.

People who speak two languages have also been shown to have more efficient monitoring systems. A 2009 study showed that monolinguals and bilinguals respond similarly when the brain's monitoring system is not taxed, but in conditions requiring high monitoring demands, bilinguals were faster. Bilingual people also outperform monolingual people in spatial working memory tasks. So by learning new languages you not only improve your computer skills or communication

skills you also improve the way you brain works.

1. speaking multiple languages helps protect against dementia
2. Dementia is a broad category of brain diseases, that cause a long-term and often gradual decrease in the ability to think and remember.
3. Improves our memory
4. creative problem solving
5. changes brain structure
6. opens mind

There is a principle of linguistic relativity, that the structure of a language affects its speakers' world view. Popularly known as the Sapir–Whorf hypothesis, or Whorfianism, the principle is often defined to include two versions. The strong version says that language determines thought and that linguistic categories limit and determine cognitive categories, whereas the weak version says that linguistic categories and usage only influence thought and decisions.

The question bears on philosophical, psychological, linguistic and anthropological questions. The major question is whether human psychological faculties are mostly innate or whether they are mostly a result of learning, and hence subject to cultural and social processes such as language. The innate view holds that humans share the same set of basic faculties, and that variability due to cultural differences is less important and that the human mind is a mostly biological construction, so that all humans sharing the same neurological configuration can be expected to have similar cognitive patterns. [1]

The contrary constructivist position holds that human faculties and concepts are largely influenced by socially constructed and learned categories, without many biological restrictions. Another variant is idealist, which holds that human mental capacities are generally unrestricted by biological-material strictures. Another is essentialist, which holds that essential differences may influence the ways individuals or groups experience and conceptualize the world. Yet another is relativist, which sees different cultural groups as employing different conceptual schemes, that are not necessarily compatible or commensurable, nor more or less in accord with external reality.

Korzybski independently described a "strong" version of the hypothesis of linguistic relativity.

We do not realize what tremendous power the structure of a habitual language has. It is not an exaggeration to say that it enslaves us through the mechanism of semantic reactions and that the structure, which a language exhibits, and impresses upon us unconsciously, is automatically projected upon the world around us. [2]

APL programming language originator Kenneth E. Iverson believed that the Sapir–Whorf hypothesis applied to computer languages. His Turing award lecture, "Notation as a tool of thought", was devoted to this theme, arguing that more powerful notations aided thinking about computer algorithms.

The essays of Paul Graham explore similar themes, such as a conceptual hierarchy of computer languages, with more expressive and succinct languages at the top. Thus, the so-called blub paradox says that anyone preferentially using some particular programming language will know that it is more powerful than some, but not that it is less powerful than others. The reason is that writing in some language means thinking in that language. Hence the paradox, because typically programmers are "satisfied with whatever language they happen to use, because it dictates the way they think about programs". [3]

In a 2003 presentation at an open source convention, Yukihiro Matsumoto, creator of the programming language Ruby, said that one of his inspirations for developing the language was the science fiction novel Babel-17, based on the Sapir–Whorf Hypothesis

If we develop our language skills, we will become more computer literate. This step will develop our country. How?

I started this article by talking about digital Kazakhstan. Other countries experienced some programs too, and awesomely succeeded. One of the examples is – Singapore and its «Smart Nation» program. Smart Nation is a Singaporean government initiative to harness technologies

networks and big data to create tech-enabled solutions.

The Smart Nation and Digital Government Group (SNDGO) and Government Technology Agency (GovTech) under the Prime Minister's Office (PMO) lead the development of a National Digital Identity framework for online transactions between citizens and businesses, building on the current SingPass system. [4]

Nowadays, Singapore is one of the technologically most developed countries, and this country is bilingual, moreover, it has four official languages. The more languages the country is trying to learn, the more opportunities it gets to be successful. So, I sincerely hope that our country will get to the same result. This research inspired me to writing a small **poem - dedication** to the technological progress in my country.

Technologies are our path!
And languages will lead the way!
Kazakh, Russian, English! Yes!
It is our way to success!
Smart technologies for a smart nation
Don't be afraid of new creations
We can! We can! We can!
We will make Kazakhstan
Great again!

It shows how I feel and my thoughts on this topic. I am so glad of this kind of opportunities for our country. No matter how much we love, respect and admire our country, we should admit the problems that can lead to the failure.

- 1) Many people do not believe in this idea. I often hear, that people say that it is unreal, and does not have any perspective. Some people do not even care, or do not even know about this program, because they did not have an appropriate talk. Thus, we should send professionals to schools, kindergartens, working places to explain the idea and let the people choose.
- 2) We do not have enough experts. We should give them opportunities to learn.
- 3) We should get rid of corruption. Corruption is the enemy of the progress, of the nation, it is one of the global world-wide problems.
- 4) We should know our goals and work towards them. Goal making is important.
- 5) Be patient. Results will not come right away. It takes time.
- 6) Make efforts.

To sum up, the idea of trilingualism in Computer literacy is a motivational step forward. Because it gives us opportunities to get better, to work towards something. Every year our country has a new goal. Every year our president addresses the nation to give the country a new direction. This year our goal is trilingualism in the digital Kazakhstan. Writing this article, I did a lot of research, talked to many people and figured out, that our generation is so passionate, hardworking and purposeful. I saw many creative people. I talked with professionals, I really knew much more than I used to do. This is how development works. This kind of conferences make us more committed to this kind of issues. It makes us want to know more. It inspires us to get better, to move forward.

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