

THE ROLE OF SCIENCE FROM CHILDHOOD AS A CASE STUDY THE REPUBLIC OF UZBEKISTAN

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Abstract. *The core of being who we are is our family and setting us an example demonstrates the view of tomorrow. In what kind of conditions are we growing up, what kind of education are giving our parents and certainly which direction they are showing us is vital for becoming who will be in future. Furthermore, what kind of generation would we have after us, certainly depends on us!*

Keywords: *science, family, childhood, STEM, the Republic of Uzbekistan, EcoGIS centre, gender, knowledge, investment, sustainable development, Presidential decree.*

Introduction

In my childhood the role of science was massive, because of my family. My family is intelligent: my two grandmas are associate professors and my dad also was associate professor until he passed away.

Most of all, my grandpa is a scientist, honored inventor, professor in sphere ecology and a great example for me! From my childhood, I admired of him and proud of him! My grandpa is 81 years old and he is still teaching to lots of students at the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers. My family's brilliant mind always amazed, inspired me and makes me keeping moving forward, never give up!

Over the course of the last few decades, researchers and policymakers have sought to increase students' interest in science, technology, engineering, and mathematics (STEM) fields given their importance in society (Zakaria 2011). Professionals in STEM fields are often stereotyped as geniuses or naturally gifted in the discipline (Cheryan et al. 2013b; Ehrlinger et al. 2018; Hannover and Kessels 2004; McPherson et al. 2018; Storage et al. 2016).

Literature review

In total 72 articles were downloaded and analyzed, including foreign articles.

Analysis and results

Whole my life my family supports me, believes in me giving me the right advice.

I started my job in the State committee of the Republic of Uzbekistan for ecology and environmental protection as a leading specialist in investment projects. It is very interesting for me and cognitive! My strong motivation is my family! I owe them! Moreover, I am grateful for my country-the Republic of Uzbekistan, which has done all facilities for us youngsters to enhance our knowledge and skills!

Starting from school №50, lyceum of world languages, bachelor's in Tashkent Chemical-Technological Institute, thereafter in *Tashkent Institute of Irrigation and Agricultural Mechanization Engineers my master's in the best EcoGIS center. I am thankful for all professors, teachers, scientific supervisors. At the moment I am the independent researcher PhD student at Tashkent Institute of Irrigation and Agricultural Mechanization Engineers.*

When I studied at school, there were 6-7 lessons in one day, thus I carried all these books in my rucksack, even though it was heavy, because each subject was very interesting for me! Knowledge is the most precious thing in our life, the best investment in children!

To the extent that students believe that STEM success requires being a genius but do not see themselves as highly intelligent, they may become less motivated to pursue these fields to avoid the risk of appearing unintelligent (Dweck 2007). In support of the balanced identity model, a recent study with undergraduates found that the concordance between views of scientists as highly intelligent and students' intelligence self-concepts predicted their science career interest (McPherson et al. 2018). Conversely, holding this belief would be positively related to STEM motivation among those who also view themselves as gifted. (2019, Christine R. Starr, Campbell Leaper Do adolescents' self-concepts moderate the relationship between STEM stereotypes and motivation?)

There are a lot of Presidential Decrees, which provides sustainable development of our country:

1 Decree of the President of the Republic of Uzbekistan of November 29, 2017 No. PD-5264 "On the establishment of the Ministry of Innovative Development of the Republic of Uzbekistan

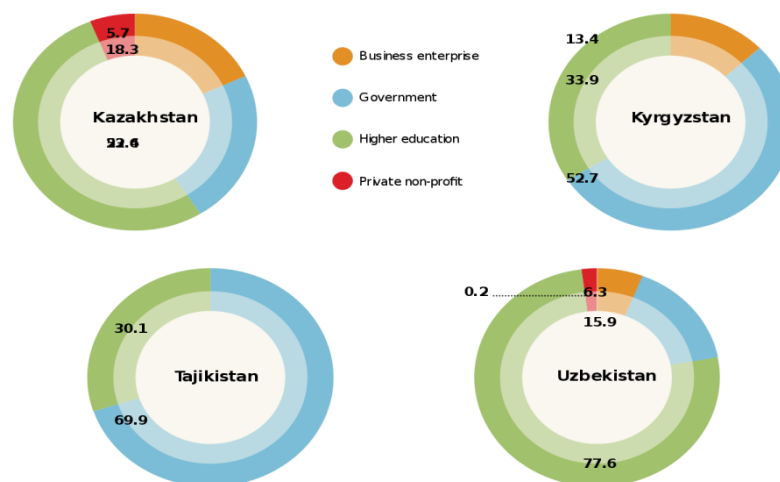
2 Decree of the President of the Republic of Uzbekistan dated February 16, 2017 No. PD-4958 "On further improvement of the system of postgraduate education

3 Decree of the President of the Republic of Uzbekistan dated December 29, 2016 No. PD-4907 "On measures to further improve and stimulate the activities of academicians of the Academy of Sciences of the Republic of Uzbekistan

4 Decree of the President of the Republic of Uzbekistan dated April 17, 2019 No. PD-4291 "On the approval of the strategy on solid waste management in the Republic of Uzbekistan for the period 2019-2028"

5 Decree of the President of the Republic of Uzbekistan dated September 29, 2020 No. PD-4845 "On measures for further improvement of the activity management system in the sphere of management with household and construction waste"

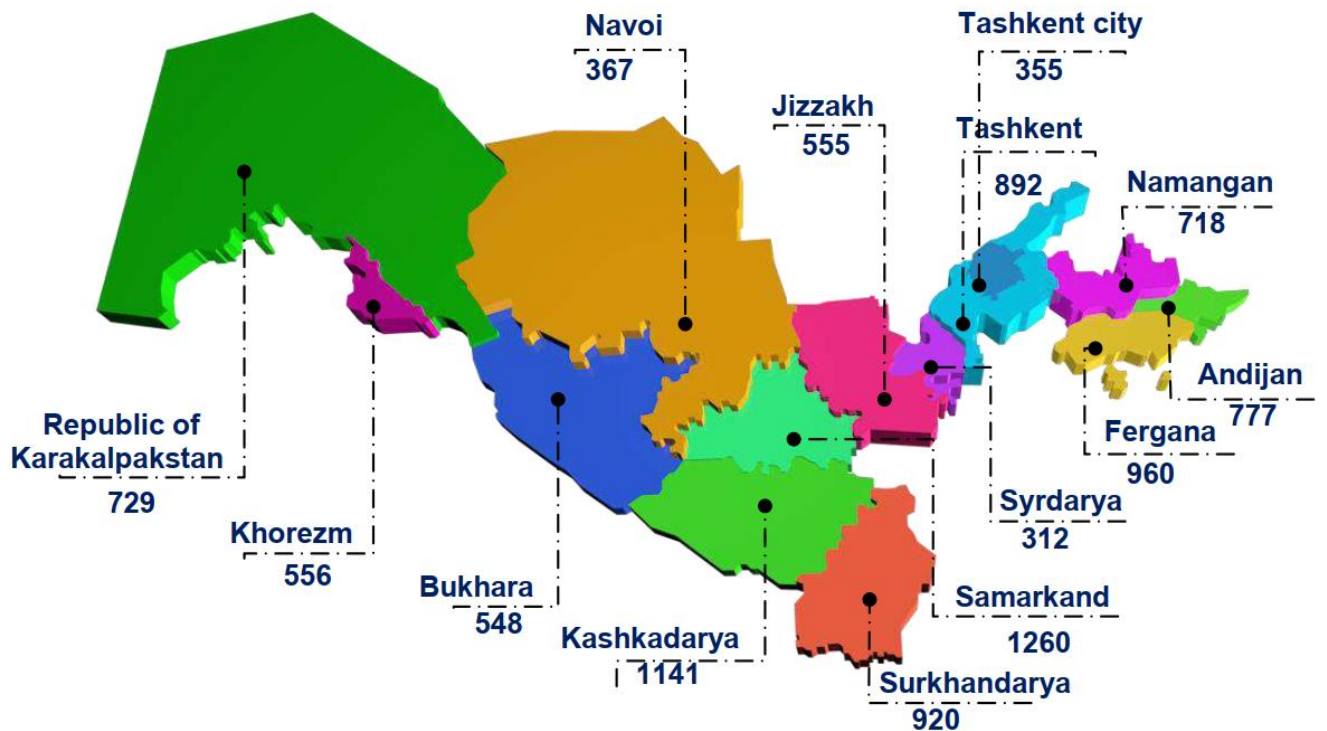
6 Decree of the President of the Republic of Uzbekistan dated December 28, 2020 No. PD-4937 "On measures to implement the investment program of the Republic of Uzbekistan for 2021-2023"



Note: For Kyrgyzstan and Uzbekistan, the most recent data are for 2011. Data are unavailable for Turkmenistan.
 Source: UNESCO Institute for Statistics, February 2015

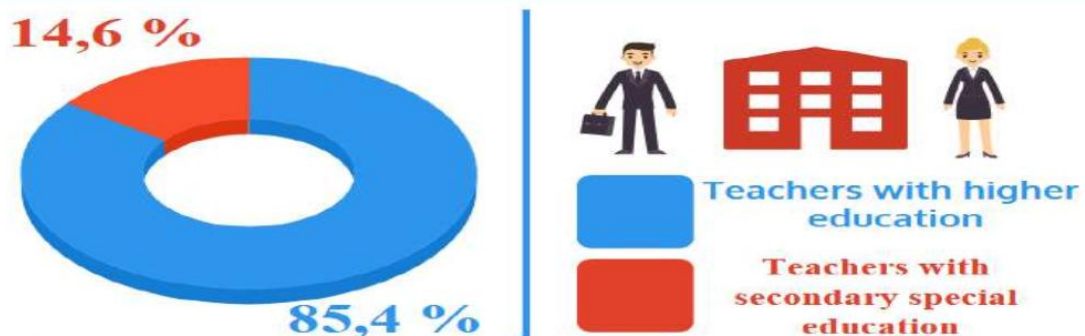
This graphic illustrates 4 Central Asian countries: Kazakhstan, Kyrgyzstan, Tadjikistan and Uzbekistan by division of business enterprise, government, higher education, private non-profit. Higher education plays an important role in the Republic of Uzbekistan with 77.6% and a leader in this graphic. Each year number of institutes, universities is increasing rapidly in the Republic of Uzbekistan. In Kyrgyzstan 33.9% is higher education. In Tadjikistan 30.1% is higher education.

Distribution of educational institutions by region, units.



27.03.2020 Statistics of education in Uzbekistan.

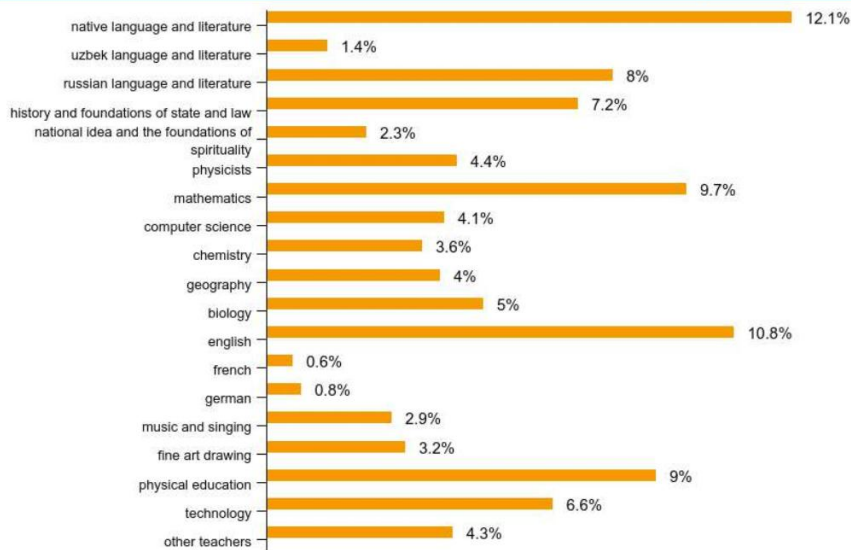
The distribution of teachers in educational institutions by level of education²⁾, %



27.03.2020 Statistics of education in Uzbekistan.

This graphic demonstrates the distribution of teachers in educational institutions by level of education in % in Republic of Uzbekistan, 85,4% are teachers with higher education and 14,6% are teachers with secondary special education.

Distribution of subject teachers at the beginning of the 2019/2020 school year, %



27.03.2020 Statistics of education in Uzbekistan.

At the beginning of the 2019/2020 school year, the highest percentage of teachers in secondary schools was observed in such disciplines as native language and literature, English, mathematics, physical education, Russian language and literature, and the percentage of teachers in these academic disciplines is higher than among teachers in other items. (27.03.2020 Statistics of education in Uzbekistan.)

The lowest percentage is in learning French 0,6%, German 0,8%, Uzbek language and literature 1,4%, national idea and foundations of spirituality 2,3%, music and singing 2,9%, fine art drawing 3,2%, chemistry 3,6%, computer science 4,1%, physicists 4,4%.

The highest percentage is native language and literature 12,1%, English 10,8% and the percentage of learners English is sharply rising every single day, mathematics 9,7%.

The number of students by age in secondary schools, thousand people
(as of the beginning of the 2019/2020 school year)

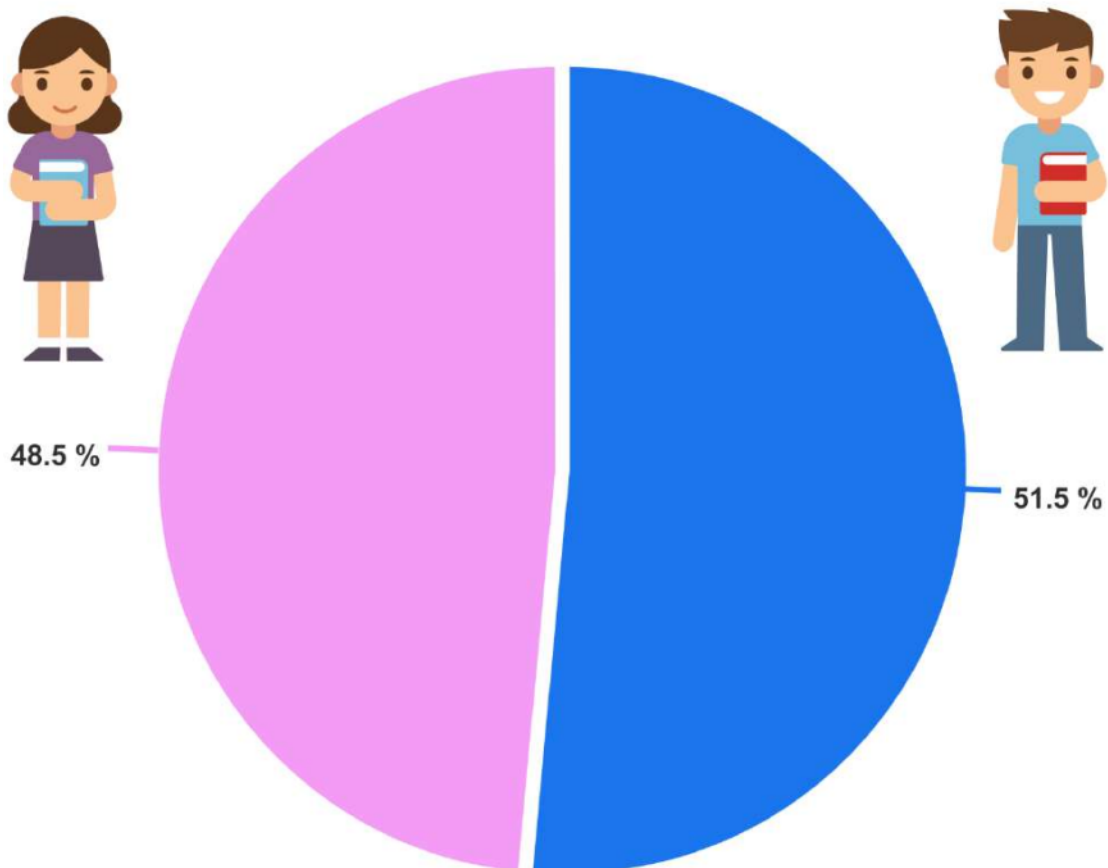
	Number of students, total	of which:										
		6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	16 years and above
Republic of Uzbekistan	6146,3	75,0	603,1	607,9	623,1	635,3	620,7	581,7	535,3	503,6	493,2	867,4
Republic of Karakalpakstan	344,3	4,0	35,4	33,3	35,3	36,4	35,4	33,2	30,2	27,7	27,8	45,6
regions:												
Andijan	556,8	10,6	54,6	54,1	59,5	62,2	58,7	53,4	46,5	43,9	40,9	72,4
Bukhara	325,9	7,3	31,6	31,1	32,4	32,7	30,9	28,9	29,1	28,4	27,1	46,4
Jizzakh	257,6	1,2	24,4	24,2	25,2	26,6	26	23,7	22,8	22	21,5	40,0
Kashkadarya	627,7	4,5	62,2	61,2	62,8	62,6	62,5	56,8	54,7	53	51,9	95,5
Navoi	178,6	1,0	17,5	17,4	17,7	17,5	17,4	17,6	16,4	15,2	14,7	26,2
Namangan	500,4	6,7	48,9	50,2	48,6	50,6	53,3	49,1	40,5	39,9	39,8	72,8
Samarkand	720,0	5,3	70,7	73,0	74,5	74,9	73,3	66,5	63,7	57,4	56,3	104,4
Surkhandarya	495,1	2,1	50,4	51,5	49,4	50	49,4	44,6	42,1	39,6	39,3	76,7
Syrdarya	156,5	2,7	14,6	14,9	15,7	16,4	16,1	15,2	14,1	12,5	12,4	21,9
Tashkent	508,3	7,9	49,6	49,9	51	53,7	51,1	49	44,3	41,4	41,8	68,6
Ferghana	664,3	7,0	64,4	66,2	69	66,5	64,8	64,8	58,8	55,2	54,2	93,4
Khorezm	352,0	3,0	32,5	34,1	34,9	36,3	35	34,9	31,4	29,4	29,1	51,4
Tashkent city	458,8	11,7	46,3	46,8	47,1	48,9	46,8	44	40,7	38	36,4	52,1

27.03.2020 Statistics of education in Uzbekistan.

This table shows the number of students by age in secondary schools, thousand people in 2019/2020 school year. In Republic of Uzbekistan in total number of students in 2019/2020 year were 6146,3 thousand people.

At the beginning of the 2019/2020 school year (without schools for children with disabilities in physical or mental development), the highest indicator for the number of students aged 6 years studying in educational institutions was recorded in Tashkent and Andijan region, the lowest indicator was in Jizzakh and Navoi region. (27.03.2020 Statistics of education in Uzbekistan.)

Distribution of students of educational institutions by gender, %
(as of the beginning of the 2019/2020 school year)



27.03.2020 Statistics of education in Uzbekistan.

This diagram shows distribution of educational institutions by gender in % in the beginning of the 2019/2020 school year in Republic of Uzbekistan, which consists of 48,5% are girls, 51,5% are boys.

Conclusion/Recommendations

Science from childhood makes a huge influence on child's future!

In the last few years some research teams have received international grants, which has served to promote scientific research in our country, attracting some young people, as well as older, more experienced and capable women researchers. (20.08.2002, Ulmas Gafurov, Women in physics in Uzbekistan) There is more need a financial support of science by the government and modern equipment to make research deeply with investigation.

It is important to encourage young people into research and provide them with good opportunities and conditions to pursue science that will help to develop our country. Pursuing research will help them to overcome difficulties, get good jobs and help to improve their social life through networking. The best advice I can give young women is for them to believe in themselves, enjoy doing research as a hobby because it strengthens the mind, to follow their dreams and be a model for their kids and society (2018 Profiles of women scientists in Asia).

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