

The Importance of the Teacher-Student Ratio in Improving the Quality of the Educational Environment in Higher Educational Institutions

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Annotation

Although the 21st century is considered to be a rich period in achievements in various fields of science, unprecedented natural and other types of disasters beyond human control continue to threaten the well-being of society. The experience of developed countries has proven that ensuring the well-being of society depends on the continuous development of science and the productive application of a quality education system.

In this article, the importance of the teacher-student ratio in the modern conditions of the higher education system, in the environment of technological development of the society, and the actual conditions of the ratio in countries with a highly developed educational system today are studied. Also, the issues of ensuring the teacher-student relationship at the optimal level in the higher education system of Uzbekistan are studied in the regulatory documents and in practice, and the dynamics of changes in this ratio over the years are analyzed. The results of the article show that in improving the quality of education, it is important for teachers to create the necessary environment in educational processes, and this process explains the need to ensure a directly proportional teacher-student ratio in the fields of education.

Key words: Remote teaching, traditional classes, teacher-student ratio, labor market, post-secondary special education

Introduction. Although remote teaching is seen as the only acceptable solution to maintain the quality of educational processes in the setting of COVID-19 pandemic, traditional classes are still recognized as an effective approach to educate the young generation that our society requires. Due to constant economic changes and the constant influence of unexpected global factors, the world economy is growing as a complex of strategic industries, which is more difficult to forecast in the future¹. The results of online education organized in such conditions showed that rather than being the central subject of knowledge, teachers have been performing the role of moderator/facilitator as a provider of opportunities, structure and support for students². Since the education system is the main area of constant focus of the government that ensures the continuous existence, development and well-being of the

¹ Isroilugli, Y. F. . (2022). Prospects for Post-Pandemic Development in the Tourist Areas of Uzbekistan. *European Multidisciplinary Journal of Modern Science*, 4, 809–812. Retrieved from <https://emjms.academicjournal.io/index.php/emjms/article/view/189>

² Wettergren, Gunnar & Åkerlund, Kent. (2013). Aligning pedagogy with economics – An empirical study of the economical value of lowering the teacher-student ratio.

society, more attention is paid to the funds allocated to the education sector and the quality of the workforce to be hired. In recent years, various opportunities and benefits have been given to young people to enroll in higher education, to improve their level of knowledge and to acquire specialties that are in high demand in society. As a result, the increase in the admission quota requires higher education institutions to provide more and more qualified personnel than the number of professors and teachers in previous years. Today, the experience of developed countries shows that the teacher-student ratio plays an important role in the effective organization of teacher-student relations in educational processes. It is notable that the current 2023 year has been declared by the president of our country as the “year of caring for people and quality education” and stated that improving the quality of education is the only correct way for the development of the new Uzbekistan³.

Literature Review. The practice of increasing the efficiency of the teaching processes organized for students is carried out through the algorithm of frequent exchange of formative feedback, by which teachers determine the zone of proximal development of students and present educational material in a suitable way. However, teachers face many barriers to provide such individualized support:

- a) time required to deliver multi-level instruction,
- b) managing multiple groups;
- c) students' mental development is unevenly developed;
- d) such as opportunities for face-to-face exchange of ideas necessary for building feedback and relationships⁴.

Naturally, such difficulties can put even experienced pedagogues in a difficult situation. Therefore, there is a need to balance the teacher-student ratio (T-S ratio) in HEIs.

The essence of the teacher-student ratio means that in educational institutions, when the administration provides the appropriate number of students for each teaching staff and the optimal ratio, the teaching processes are organized effectively. To better understand how teacher-student ratio balancing affects student learning, Blatchford, Moriarty, Edmonds, and Martin (2002) conducted a naturalistic, observational study of 10,000 children in small and large classrooms in Great Britain⁵. They found that students could gain more individualized learning in small classrooms. In addition, the data showed that teachers effectively organized the lesson in such ways that enabled quick thinking, sustained interactions, and effective inquiry.

Results. According to international standards, if the teacher-student ratio is 1:16⁶, it is possible to establish direct quality educational relations between the teacher and the student.

In countries with developed educational system of the world, this ratio differs from each other according to various aspects:

³ <https://kun.uz/news/2022/12/20/2023-yil-insonga-etibor-va-sifatli-talim-yili-deb-elon-qilindi>

⁴ Solheim, Oddny & Rege, Mari & McTigue, Erin. (2017). Study protocol: "Two Teachers" A randomized controlled trial investigating individual and complementary effects of teacher-student ratio in literacy instruction and professional development for teachers. *International Journal of Educational Research*. 86. 122-130. 10.1016/j.ijer.2017.09.002.

⁵ Solheim, Oddny & Rege, Mari & McTigue, Erin. (2017). Study protocol: "Two Teachers" A randomized controlled trial investigating individual and complementary effects of teacher-student ratio in literacy instruction and professional development for teachers. *International Journal of Educational Research*. 86. 122-130. 10.1016/j.ijer.2017.09.002.

⁶ <https://collegecliffs.com/frequently-asked-questions/student-faculty-ratio-college-university/>

Table No 17.

Number	Country name	Teacher-student ratio (T-S ratio)
1	USA	1:15
2	Great Britain	1:15
3	Germany	1:12
4	Canada	1:10
5	France	1:13
6	Switzerland	1:10
7	Japan	1:16
8	Australia	1:13
9	Sweden	1:12
10	The Netherlands	1:16

Based on the data of this table, it can be said that in these countries with high economic stagnation, the number of students per educator teaches ranges from 10 to 16. In many developing countries, this ratio is higher than 1:16, in particular, in the People's Democratic Republic of China and India, this ratio is 17 and 26, respectively.

The statistical data studied during the analysis of the quality of post-secondary special education in Uzbekistan show that in the process of providing the higher education system with pedagogic personnel, teacher student ratio was 1:20 in 2001, and it was 1:12 in 2018, which, in turn, is the level of providing higher education institutions with pedagogic personnel compared to 2001 means that it has increased by 66%.

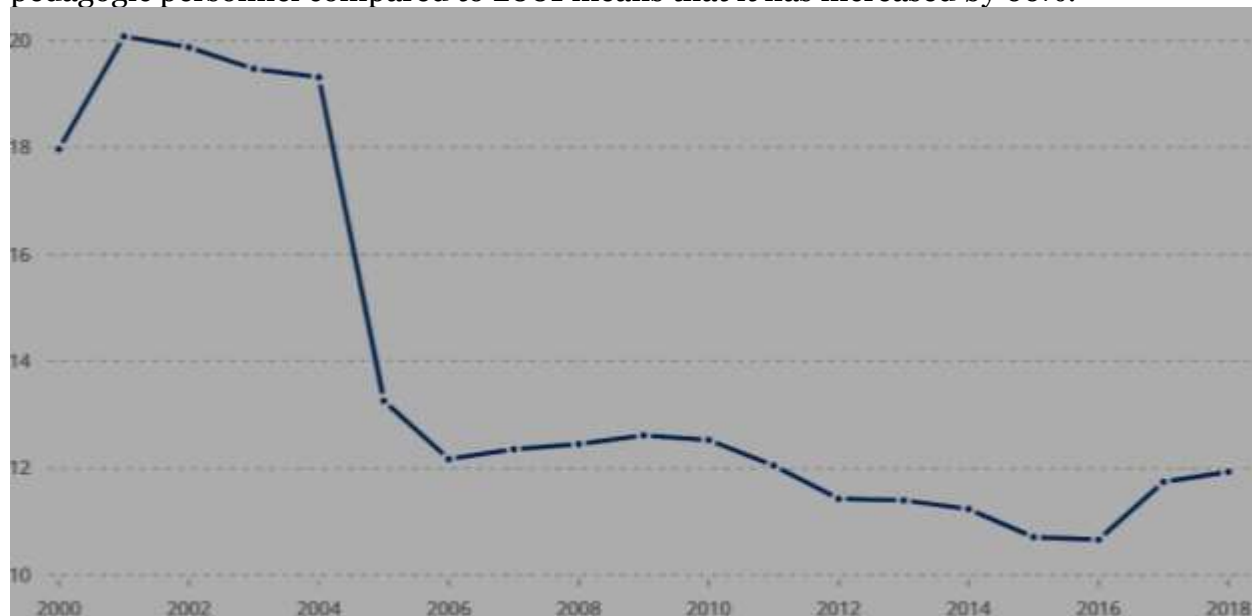


Figure 1. The dynamics of changes in the teacher-student ratio in HEIs of Uzbekistan in 2000-2018⁸.

⁷ https://data.worldbank.org/indicator/SE.PRM.ENRL.TC.ZS?end=2019&name_desc=false&start=2009

⁸ <https://data.worldbank.org/indicator/SE.TER.ENRL.TC.ZS?end=2018&locations=UZ&start=2000>

The process of educating highly educated personnel for the labor market and forming professional characteristics in their skillset that meet the requirements of the time, directly emphasizes the need to work individually with each student.

According to the order of the Minister of Higher and Secondary Special Education of the Republic of Uzbekistan No. 53-2021 of December 30, 2021, in higher education institutions, the norms of the ratio of the number of students to one teacher have been developed in the fields of education, according to which teachers working in different fields can divide the specified lesson hours in the following individual way:

Table No 2⁹.

No	Name of educational fields and directions	Number of students per teacher (t-s ratio)	Percentage of scheduled class time to fit each student (minutes)
1	Engineering	15,8	5,1
2	Production technologies	15,8	5,1
3	Mathematics	15,8	5,1
4	Computer technology and informatics education	15,8	5,1
5	Architecture and constructional education (with the exception of the educational direction of Architecture (by types))	15,8	5,1
6	Communication and information, telecommunication technologies	15,8	5,1
7	Agricultural technology	15,8	5,1
8	Transportation	15,8	5,1
9	Life safety	15,8	5,1
10	Field of services (by types and areas of activity)	15,8	5,1
11	Educational field of humanities (philology and language teaching)	16	5
12	Natural sciences	16	5
13	Sociology and psychology	16	5
14	Journalism and information	16	5
15	Law	16	5
16	Social security	16	5
17	The field of environmental protection	16	5
18	Socio-cultural activity	16	5

⁹<https://lex.uz/docs/-5836865> O'zbekiston Respublikasi oliy va o'rta maxsus ta'lim vazirining 3345-sonli buyrug'i asosida muallif tomonidan tayyorlandi.

19	Service technique and technology (on service industries)	16	5
20	Philology and language teaching (in foreign languages)	12	6,7
21	Theory and practice of translation (in foreign languages)	12	6,7
22	Art	5,4	14,8
23	Sports activities (by types of activities)	11	7,3
24	Pedagogy	16	5
25	Economics	16	5
26	Organization and management of the hotel industry	16	5
27	Tourism (by areas of activity)	16	5
28	Agriculture, Forestry and Fishery	15,8	5,1
29	Field of management education in agriculture	15,8	5,1
30	Veterinary	15,8	5,1
31	Irrigation and land reclamation	15,8	5,1
32	Architecture (by types)	10,4	7,7
33	Healthcare education	9,6	8,3

According to the table, the fields with the smallest teacher-student ratio and the largest amount of individually allocated class time are Art Education (14.8 minutes), Healthcare education field (8.3 minutes) and Architecture (by types) educational direction (7.7 minutes) Sports activity (by activity types) educational directions (7, 3 minutes) should be noted. The practical training directly required of the students studying in these areas makes it necessary for teachers to devote more time to the efficient use of the facilities of laboratories, museums and sports complexes. Also, these industries are considered to be the ones whose importance is increasing today, and the level of demand in various sectors of the economy is increasing.

The advantages of ensuring a low teacher-student ratio in HEIs are as follows:

- Students will have the opportunity in a short time, without waiting for a long time, to study the current lesson in depth and ask questions that arise within the topic individually.
- In contrast to lectures, practical classes require more individual attention from students. Practical classes require students to perform independent tasks, quickly accept the teacher's instructions and report the results back to the teacher. Therefore, providing a low teacher-student ratio is appropriate for practical training.
- The large number of students in the educational process reduces the level of satisfaction of talented students by involving individuals with different thinking skills and knowledge levels in single classes.
- Students usually do not have enough experience and skills to demonstrate their knowledge in front of large audiences, even though these audiences are students of the same age group studying in a certain group, they feel shy. In small classrooms

(with low teacher-student ratio), all students tend to form close friendships with a small number of peers.

- The large number of students in study groups increases the noise level or rises the possibility that students will be distracted out of the lesson because of conversation of students who have a common interest.

Summary. In conclusion, it can be noted that one of the original goals of fundamental changes in the field of education is the formation of an educational system with a modern scientific basis. There is an administration to establish a sustainable education system to meet the demands of a society that is constantly changing. Ensuring a low level of the teacher-student ratio in the higher education system today provides an opportunity to organize higher-level classes.

List of used literature:

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