

Teacher Training at Kazan Federal University: Ten Years of Modern History

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In 2020, Kazan University received a notable token of recognition for its work in teacher education in the past five years. According to the *Times Higher Education*, our university is now among the top one hundred in the Education subject rankings. Currently, this is the best position among the universities of Russia, CIS, and Eastern Europe. This validates the strategy in teacher education that the university has been implementing over the past years. 2020 is also a special year because it marks ten years of our federal status – the status granted by an executive order of the President of Russia. Currently, KFU is among the ten largest Russian universities; we have about 50,000 students in the majority of the existing higher education specializations. The University collaborates in many scientific and educational programs, including a federal project for boosting the international competitiveness of Russian universities.

Teacher education is one of the most important parts of our activities. In 2015, we positioned it as one of the university's priorities, and we have been moving towards making Kazan University one of leading global multicultural and multilingual scientific and education centers for teacher training of all levels, including preschool, secondary school, tertiary and postgraduate education. That was our response to the challenges of a fast-changing world.

Thanks to this ambitious goal setting, productive efforts, and active cooperation, we have managed to increase our potential and international reputation in teacher education. Notably, only two Russian institutions – Moscow State University and Kazan Federal University – are represented in Education subject rankings in QS and Times Higher Education.

A number of Russian and international experts consider Kazan University to be one of the emerging global leaders in pedagogical education (Menter et al., 2017). This is a direct result of creating a strong team of renowned Russian and international researchers, both based in Kazan and at other institutions, and with whom we work on joint projects. One of these is the International Forum on Teacher Education (IFTE, 2020). In 2020, more than 860 scientists participated, representing 275 universities, scientific and educational organizations, 79 of whom were from abroad. Key reports were made by well-known international researchers from leading universities in Russia, the UK, USA, Ireland, Australia and other countries. The partners of the Forum were the Russian Academy of Education and a number of international scientific associations and it was supported by Microsoft. Over ten days, 536 papers on the best experiences in teacher training in Russia and the world were presented on 136 virtual sites. The Forum participants and organizers achieved a first virtual forum in the history of teacher education in Russia, of the highest quality.

In its 200 years of history, Kazan University has lived through several transformations, but none has been so large-scale as the one we have gone through in these past ten years. The

history of higher education in Russia has no precedent to this merger – seven independent higher education institutions, as well as medical centers, research centers, and secondary schools were united in a vast university holding – Kazan Federal University (Gafurov, Safiullin, Elshin, 2017). Thanks to a merger with two teacher education universities, we became one of the three largest teacher training centers in the nation. Interestingly, we are also one of the oldest in this regard. Since 1812, Imperial Kazan University included a pedagogical institute, which for a long time was basically the only such institution on the vast Russian territory to the east of Moscow.

Two centuries later, we are once again a sizable force in the Russian pedagogical education, mostly due to creating our own organizational and content approaches to teacher training aimed at solving pertinent tasks of educational reform in Russia (Gafurov, 2013).

This return to teacher education was caused by, on one side, problems of the traditional specialized university model, and on the other side, by global trends of teacher education at various universities (Ellis & McNicholl, 2015; Elstad, 2010; Fancourt, Edwards, Menter, 2015; Beauchamp, 2015; Menter & Hulme, 2011). All this made the objective of teacher training more interesting.

Among the types of teacher education institutions, Kazan Federal University stands as a unique phenomenon, one that has been gradually taking shape in the past few years. KFU was the first classical university in Russia to propose its own teacher education model, different from the one offered by specialized pedagogical universities (which remained basically unchanged through most of the 20th century) (Kalimullin, 2014; Valeeva & Gafurov, 2017).

According to Russian and international experts, KFU's teacher education system is a successful local example of modernization. We hope that our experience can be of use to other Russian universities.

While analyzing our work, we have found two groups of factors contributing to the formation of our system. The first group unites synergistic effects of the strong suits of a federal university and a pedagogical university, which helped alleviate some of the problems of the existing teacher training system. Here, I would like to draw your attention to the technological infrastructure, our labs, and our staff, all of which contributed to increasing the fundamental nature of pedagogical education. That was organically supplemented by the traditional advantages of pedagogical institutions – professional targeting, deep methodological training, preparedness for instructional work, - which, taken in total, are the pedagogical atmosphere necessary to educate future teachers. In our model, we tried to incorporate everything of the best and most necessary for quality education.

Merging pedagogical university with a multidisciplinary university also helped solve their financial problems, which, if we are being honest, were quite serious for this category of higher education institutions in Russia. I am not only talking about infrastructure (such as building, access to information resources, educational and everyday services for students, etc.), but also about competitive remuneration, opportunities to attract top talent, and conditions for professional growth.

All this contributed to making our pedagogical education the most variable and the most diverse in the country. Currently, Kazan University is one the few Russian universities preparing teachers in all the levels of higher education and in all the subjects of the standard secondary school curriculum. In total, we have 10,000 people enrolled in teacher education programs, amounting to 18% of the total student body. Furthermore, over 10,000 practicing teachers receive advanced training at our university every year, which contributes to establishing a functioning system of continuous pedagogical education.

We have implemented three different teacher education models. In our Yelabuga Institute, we preserved the traditional model of pedagogical training. This means that we have subject-oriented faculties (such as physics and mathematics, foreign languages, etc.), which prepare teachers to work in this or that subject area. The Yelabuga branch is fully integrated in the general teacher education system at the university, using all of its services, resources, and academic mobility. This is where I started my teaching and research career in the 1980s as a teacher of physics at what was then an autonomous pedagogical institute. That is why I am especially pleased to see how this institution has reshaped itself. Since 2011, we have made sizable investments in the Yelabuga Institute to improve the professional skills of employees, attract research talent, refurbish the labs, renovate and acquire new facilities and dormitories. As a result, its economics sustainability has grown, as well as its research output, entrance exam averages and popularity among enrollees. Yelabuga Institute has become internationally recognized, and now 40% of its students come from overseas. We are currently incorporating a secondary school into its structure. Our objective is not only to improve educational and instructional processes in that secondary school, but also to streamline development technologies for such schools, by which I mean those which show below average results and which, unfortunately, can be found in any city and in any country.

At our central campus in Kazan, we established a new distributed model of teacher education. Every specialized institute has become a focal point for teacher training in its own subject area. We think that future teachers can receive better professional education if they spend a bulk of their time with students of respective subject areas (such as chemistry, mathematics, and so on).

Then, the students hone their pedagogical and psychological knowledge at the Institute of Psychology and Education, which serves as the coordinating center for teacher training. Understanding the importance of both fundamental and methodological training, we pay special attention to techniques of subject teaching. These are learned, both at specialized institute and the Center for Practical Competences of the Institute of Psychology and Education, which is equipped with model classrooms and laboratories in a number of secondary school subjects. These model classrooms comprise the most advanced equipment currently used by the best Russian schools.

At the Institute of Psychology and Education, we have successfully tested another innovation – the Center for Pedagogical Master Studies, which unites the majority of postgraduate programs in teaching. Usually, these programs are not assigned to specific departments at universities. This helped us eliminate overlap and optimize our structure, as well as established unified management and quality control and increase the demand for programs. Furthermore, this approach enables us to be more adaptable to the changing conditions of the job market (Gafurov, Valeeva, Kalimullin, Sahieva, 2018).

Lately, we have been steadily shaping our digital infrastructure for education and research in teacher training. Kazan Federal University now has EduTech (Center for Digital Education Technology). Almost all institutes have their own digital planning rooms and video recording facilities. The University also established the Institute of Advanced Educational Technology tasked with determining the ideology of distance learning and planning online courses across the whole university. This infrastructure provides a backdrop for our groups working in digital transformation of education. Simultaneously, we attract Russian and overseas suppliers of software and hardware to assist in the process of teacher training. As a result of our productive policies in digitization, we experienced a relatively seamless shift to distance learning in March 2020 amid the coronavirus pandemic. Part of our programs were already taught online and offline, so students and educators had the necessary skills to move to distance learning. Notably, 90% of our

students gave positive feedback about distance education. The majority of classes use Microsoft Teams. We plan to continue our cooperation with this software powerhouse and to open the Microsoft Center of Excellence at our university.

For secondary schools, KFU is offering a multimedia database in physics and a course construction tool called “Educational Environment 21+”, one that is widely used to create multimedia educational content. For the BINOM Publishing House, we completed a multimedia textbook in physics for 10th grade, which is freely available for the duration of the anti-pandemic measures. We are currently working on interactive physics textbooks for grades seven through eleven, an astronomy textbook (general and advanced courses), and a multimedia resource called Geography from Space.

Finally, the third model of teacher training is what we call an integrative model. This is only really feasible in a multidisciplinary university. The model enables sophomores or juniors of classical subject majors to shift to teacher education if they so choose. Additionally, within this model we implement various programs of professional retraining for those who received research-oriented instruction (in physics, chemistry, biology, etc.). This approach is in line with what President Vladimir Putin said in his Address to the Federal Assembly on 15th January 2020, namely, the need to provide opportunities for students to change their major before the start of junior year.

Another advantage of developing teacher education at a large university is the emergence of a unique type of school-university partnerships. In Kazan, the university already has two high-quality in-house secondary schools, whose employees are a part of the university faculty. Both of these lyceums are among the top one hundred secondary schools in Russia. They are consistently leading the region in the number of winners in contests at various levels. And their employees are real mentors for the pupils. Also, this year we are going to launch a kindergarten for children with autism spectrum disorders. This kindergarten will be heavily research-oriented. We plan to involve not only our teachers, psychologists, defectologists, but also physicians, physiologists, geneticists, and pharmacists. All our preschool and secondary education entities are, on one hand, wonderful practice platforms for our students, and on the other hand, bases for research activities. This contributes to the research focus of teacher education, something that has historically been lacking at specialized pedagogical universities. In that, we have a deep partnership with a leading research organization in Russia – the Russian Academy of Education. In 2016, the Academy established its research facility at our university, and it has been growing since then. In 2019 alone, the Volga Regional Center of the Russian Academy of Education saw the opening of three new laboratories – Digital Educational Solutions, Cognitive Research in Education, and Educational Management. Such a structure allows us to consolidate resources on the most important topics of research at the University.

We are in close cooperation with the Ministry of Education and Science of Tatarstan – the primary employer of our graduates in teacher training. Together with the Ministry, we founded the Coordination Council on Pedagogical Education in the Republic of Tatarstan.

The second group of favorable factors contributing to the development of this area at Kazan University is the orientation of our researchers towards wide international cooperation and best practices of leading international universities. To boost this activity, we established the Situation Analysis Center and a number of labs.

In 2015, we became one of the few Project 5-100 participants with a focus on pedagogical education. As a consequence, teacher training, as well as medical training, has become one of our development priorities. This helped us concentrate resources and increase our research potential year on year. In 2019, we saw a three-fold growth in research funding from national foundations and private clients. Many of our projects

are interdisciplinary in nature and unite pedagogy, psychology, medicine, and computer science. Our expert reputation helped us continue and increase research for large companies, such as Yandex, MTS, and others.

Kazan Federal University is a rare institution representing Russian teacher education to the global community. We are members of a number of international educational associations. During these past years, Kazan University has become the most visible, and sometimes the only, representative of Russia at major international conferences, spreading information about teacher education expertise in the country. Our high research output has received positive feedback from the international community. In weighted citations, total citations, H-indices we are significantly ahead of other Russian universities and are closing in on our reference institutions – Helsinki, Rochester, and some others. A growing trend of 2019 is our participation in monographs published by leading international publishing houses. For example, the Oxford Encyclopedia of Teacher Education now has a chapter on teacher education in Russia, co-written by our professors Aydar Kalimullin and Roza Valeeva (Valeeva & Kalimullin, 2019).

International recognition in Education subject rankings has increased the competitiveness of our teacher education programs. In 2019, we saw a significant growth of interest in teacher education from highly-ranked secondary school graduates. Moreover, KFU also became the national leader in enrolment to paid programs in teacher education in that same year.

Thus, despite all the difficulties, we have managed to create an effective model of teacher training at Kazan Federal University. Not only does it facilitate solutions to a number of problems facing teacher education, but also creates the mechanisms to foster young talent who then continue their studies at our university and other universities across the country. That is why we are keenly interested in further modernizing this sphere and hope that our experience will be in demand on a national scale. Large university complexes can make meaningful contributions to quantitative and qualitative improvements of teacher training. I must reiterate that this is very important in light of global, national and regional challenges facing contemporary school education in Russia.

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