

SURVIVAL STRATEGIES OF SCHOOLS IN THE KYRGYZ REPUBLIC: A SCHOOL-LEVEL ANALYSIS OF TEACHER SHORTAGES



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Survival Strategies of Schools in the Kyrgyz Republic provides an in-depth analysis of the teacher shortage in Kyrgyz Republic, the causes that lead to such shortage and examines schools' coping mechanisms. This research offers an objective and substantiate picture of the availability of qualified teachers in schools, based on 11 indicators, which allows to measure real teacher shortages in schools. This report combines qualitative and quantitative research conducted in 10 secondary schools in Batken and Jalalabat Provinces.

The conclusions and recommendations of the this independent research are addressed to the Government of the Kyrgyz Republic, the Ministry of Education and Science, pre-service teacher training institutions, international donor agencies and all the other interested parties and general public.

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EXECUTIVE SUMMARY

This study defines teacher shortages in a manner that pays attention to teacher quality. The definition of teacher shortages used in this study can be summarized as follows:

Real teacher shortages =
the number of teachers needed to avoid cancelled subjects and lessons +
the number of teachers employed at a school with no or minimum teacher training education

The officially used definition of teacher shortages only focuses on vacancies, that is, the number of teachers needed to avoid the cancellation of subjects and lessons. By broadening the definition, it is acknowledging that the employment of non-qualified teachers in schools masks real teacher shortages. The study analyzed the scope of and reasons for, teacher shortages in 10 selected schools of the Batken and Jalal-Abat provinces.

The two provinces were selected because they represent typical cases of teacher shortages. The number of reported vacancies in the two provinces is slightly above the national average. Nationwide, 56.6 percent of schools report teacher shortages. The proportion of schools with teacher shortages is 62.6 percent of schools in Batken province and 62.7 percent of schools in Jalal-Abat province. In each of the two provinces (*oblasts*) we selected three districts (*rayons*). The following districts were selected based on their distance to the province centre (a combination of distant and near districts were deliberately chosen):

- Batken province: Batken district, Leilek district, Kadamjai district
- Jalal-Abat province: Suzak district, Bazar-Korgon district, Nooken district

We interviewed 382 individuals in schools and 11 individuals in government offices of the Batken and Jalal-Abat provinces. Most teacher and student interviews were conducted as pair or group interviews. This study draws not only on data gained from in-depth interviews but also from a comprehensive review of decrees, reports and statistical information. For each school, we either received a copy of the tariff classification (*tarifikazia*) or we copied these pay breakdown tables by hand. In half of the schools we also copied the *tabeel*, which can be best translated as “time sheet” or the attendance record that the deputy director typically oversees. The sample size of the study (10 cases/schools) does not allow us to quantify actual teacher shortages in statistical terms, but instead has enabled us to explore in depth mechanisms that schools use to cope with teacher shortages. The findings of the study are summarized below:

Teacher Shortage Rate is Under-reported. We found a great gap between official and empirical vacancies at school level. Officially, the supply of teachers nationwide is 95.8 percent, that is, only 4.2 percent of the teaching force is non-available (vacant). We found a much lower availability rate, projected based on figures retrieved from two provinces with an average teacher shortage rate: we found an availability rate of 77 percent, that is, a teacher shortage of 23 percent. In addition, we found a discrepancy between officially reported teacher shortage rates as reported at central level (National Statistics Committee, MoES), district level (District Department of Education) and at school level. First, according to the information from the National Statistics Committee¹, 56.6 percent of all schools countrywide and approximately 63 percent of schools in Jalal-Abat and Batken suffer from teacher shortages. In our sample of ten schools, however, *all* of the schools had teacher shortages. There is a need to understand and explain not only the differences between the figures from the National Statistics Committee, but also from the Ministry of Education and Science and the ones found in empirical studies, such as the one presented here or the one prepared by the USAID Quality Learning Project (2009).

For the time being, we are only able to offer one explanation: Both the National Statistics Committee and the Ministry of Education and Science assume, as mentioned above, a much higher number of teachers are employed at school level than what we actually found at school level. This accounts for the much higher shortage rate, expressed as a percentage of the total number of teachers (assuming that each teacher only works 1 set teaching load). Even though the schools accurately report the number

¹National Statistics Committee of the Kyrgyz Republic (2008). Education and Science in the Kyrgyz Republic. Statistical Compilation (excerpt from p. 66). See also USAID QLP Report, p. 6f.

of vacancies to the District Education Departments, they tend to over-report the number of employed teachers. The unrealistically low set teaching load, which determines that a primary school teacher should teach 16 hours and a secondary school teacher (grades 5-11) 18 hours, certainly adds to the confusion and one needs to count the number of teaching loads or *stavkas* that are vacant to get an accurate picture of vacancies. In addition, we argue in this study that the schools and the District Education Departments should in future also count the number of hours taught by non-qualified teaching staff as vacancies. The following section introduces this new concept of “real teacher shortages.”

Eleven Indicators of Real Teacher Shortages. We have identified 11 indicators that measure real teacher shortages at school level. In developing these indicators we used an international framework for measuring teacher shortages: a high-quality educational system should have a sufficient supply of *qualified teachers*. “Sufficient supply” implies 100 percent availability of qualified teachers at school level. All employed teachers in an educational system that depart from that ideal norm—not only teachers with only general secondary education degrees but also university students or retired teachers working as teachers, etc — are, according to the international definition used in this study, regarded as an indication of real teacher shortages. The officially reported statistics on teacher shortages, discussed in the previous section, only counts the *availability of teachers*. In contrast, in this study we are examining the *availability of qualified teachers* at school level.

According to the definitions used in this study, a non-qualified teacher should count as a vacancy. It is recommended that a second measure for teacher vacancies (T_{vac}) is used that takes into account teacher quality and therefore measures *real* teacher shortages. The information should be gathered in October/November of each year using the following formula:

$$T_{vac} = \sum \text{CANC} + \text{PROF} + \text{NSP} + \text{UNIS} + \text{RET} + \text{OTHS} + \text{MUL} + \text{UND}$$

The quality-based teacher shortages measure includes the following eight variables:

- CANC Number of teachers that would be needed in order to avoid the cancellation of subjects or lessons
- PROF Number of teachers without teacher training who work as teachers
- NSP Number of teachers who teach subjects for which they have not been trained
- UNIS Number of correspondence students and other university students working as teachers
- RET Number of retired teachers working in schools
- OTHS Number of teachers from other schools working at the school
- MUL Number of teachers with multiple *stavkas* (more than 1.5 or more than 2 *stavkas*)
- UND Number of foreign language classes that couldn't be divided into groups because of teacher shortages

T_{vac} provides an exact measure of teacher shortages as it relates to the quality of education. It will help policy makers have baseline data on teacher quality in schools and will enable them to establish targets and benchmarks to improve teacher quality in the Kyrgyz Republic. The quality-based teacher shortage measure is much more elaborate than the measure currently in use. Currently, teacher shortages are assessed as the number of teachers that would be needed in order to avoid the cancellation of subjects or lessons ($T_{vac-official} = \text{CANC}$). Whether the subjects or lessons are taught by non-qualified teachers is irrelevant for the official teacher shortage measure.

In addition to the 8 indicators, presented above, we have developed the following three additional indicators which are, however, difficult to measure:

- Number of teachers with prolonged absences or absenteeism (seasonal, regular or permanent absences)
- Number of teachers who teach for a shorter duration than officially prescribed (teaching 35 minutes instead of 45 minutes; or shortening of the school year)
- Number of teachers that are listed in the lesson plan that do not hold actual lessons

Low and Fragmented Teachers' Salaries. We analyzed in great detail teachers' salaries in ten selected

schools and found that only those teachers with a 1.5 teaching load and more (24-27 hours and more) are able to live on a teacher's salary. From an international comparative perspective, all other teachers would not be referred to as teachers, but rather as farmers, merchants and professionals in the private sector that, for a variety of reasons (sense of obligation/patriotism, social benefits/pension plan, additional secure income) take on a part-time position as a school teacher.

The report ends with three sets of recommendations:

1. Attention to Teacher Quality

The more comprehensive measure of teacher shortage *Tvac* includes indicators for teacher quality. PISA 2006 and other international studies, such as the McKinsey Report *How the world's best-performing school system came out on top*², emphasize the importance of teacher quality for student learning or outcomes. It is recommended that statistical information on real teacher shortages be gathered using the 8 indicators developed in this study. This new measure provides a more realistic picture of teacher shortages and will help policy makers to have baseline data on teacher quality. As result, policy makers can develop targets and benchmarks to gradually improve the quality of teachers and, as a corollary, the quality of education in the Kyrgyz educational system.

2. Reform of Teachers' Salaries

The current structure of teachers' salaries is too low and unnecessarily fragmented. It consists of a base salary, additional teaching hours, a series of small supplements and social benefits/allowances (see FIGURE 5). Young teachers rarely receive social benefits/allowances (plot of land, apartment or discounts on utilities) because local governments do not have the resources to give these benefits to new teachers. Teachers must be paid significantly more. In particular, the starting salary for young teachers must be lifted significantly in order to attract university graduates with a teaching specialization into the teaching profession. Three major reforms should be considered to significantly improve teachers' salaries:

- Integrating the supplements (*nadbavka*) into the basic salary
- Integrating social benefits/allowances into the basic salary
- Move from a weekly teaching load system to a weekly workload system with a normative teaching load of 22-26 hours/week

3. Teacher Education Reform

The number of teachers who teach subjects for which they haven't been trained (e.g., a chemistry teacher who is asked to also teach geography or a music teacher is required to also teach physical education, etc.) is substantial, as is the number of teachers who have little or no teacher training at all. This applies, in particular, to former and current correspondence students who work as full-time teachers. These two groups of teachers are the most important target groups for improving the quality of education in schools of the Kyrgyz Republic. In addition to the reform programme initiated by the Ministry of Education and Science and supported by the Quality Learning Project (USAID), there is a need to draw greater attention to the following two groups of teachers: multi-subject teachers and correspondence students (former and current) who work as teachers.

² McKinsey Report (2007) *How the world's best-performing school system came out on top* London: McKinsey & Company, written by Michael Barber and Mona Mourshed

1. INTRODUCTION

Teacher shortages are a global phenomenon. There is a lack of 13 million teachers worldwide³. In the Central Asia region, it is seen as the greatest barrier to expanding the educational system — in early childhood education and from 11 to 12 years of formal education — and to providing high-quality education. The 2006 PISA study mentions the shortage of qualified teachers in Kyrgyzstan explicitly and attributes the low marks achieved in science to the lack of qualified science teachers: In Kyrgyzstan, 62 percent of all schools report vacancies in science and almost all of these schools (59 percent countrywide) cope with this shortage by filling their vacancies with teachers that take on additional lessons in science or by assigning unqualified teachers (that is, teachers qualified in other subjects but with no training in science) to teach science⁴.

Despite the common practice of redistribution, there is sufficient evidence to suggest that many schools are not able to offer the full range of subjects prescribed by the curriculum. According to the PISA 2006 study, in Kyrgyzstan approximately 25 percent of students study in schools in which at least one vacancy in the natural sciences has not been filled. This figure is very high from an international comparative perspective. In comparison, in OECD countries 3 percent of students are enrolled in schools where they have one or more vacancies. It is also high in comparison with other countries of Central and Eastern Europe and the Commonwealth of Independent States where, on average, 7 percent of all students are in schools that are not able to offer the full curriculum in science because of teacher shortages⁵. (UNICEF 2009).

Although there are teacher shortages worldwide, the reasons for the shortage vary widely by region. In many regions, there are not enough graduates from general education entering teacher training programmes. In those regions, teacher training institutions do not turn out enough teachers. In South and West Asia and Africa, in particular, there is an undersupply of graduates from teacher training. According to the 2009 *Global Monitoring Report*, South and West Asia will need an additional 3.6 million teachers and countries in Sub-Saharan Africa would need to recruit 145,000 new teachers annually to increase primary school enrolment to a universal level by the year 2015. In these regions, the shortfall of teachers is caused by low educational attainment; more specifically, the lack of graduates both in general education and in teacher training.

The situation in the Kyrgyz Republic and other post-Soviet republics, however, is diametrically opposite. Enrollment in secondary schools is nearly universal and enrollment in tertiary education, including in teacher training programmes, is very high. In fact, there is an oversupply of teacher training graduates, that is, the universities produce too many teachers. However, only 15 percent of those that graduate from pre-service teacher training enter the teaching profession⁶. This study on reported and real teacher shortages sheds light on the puzzle of why there is such an acute teacher shortage in Kyrgyzstan despite the oversupply of teachers. More concretely, it investigates the following three questions:

- What is the scope of officially reported teacher shortages?
- How do schools cope with teacher shortages, that is, what is the extent of real teacher shortages? What impact do these coping mechanisms have on the quality of education?
- Which policies have already been put in place to tackle teacher shortages and which policy options should be considered to systematically remedy the crisis of the pedagogical cadre?

Understanding Real Teacher Shortages

The emphasis of this study is on real teacher shortages. We distinguish between officially reported vacancies and “real teacher shortages.” The officially reported vacancies refer to the number of unavail-

³ UNESCO (2009). *Overcoming Inequality: why governance matters*. Paris: UNESCO, Global Monitoring Report.

⁴ OECD (2007). *PISA 2006. Science Competencies for Tomorrow's World. Volume 1 and 2*. Paris: OECD. Center for Educational Assessment and Teaching Methods (CEATM) (2008). *We Study for Life. The results of the international comparative study of functional literacy of 15-year old students, PISA-2006*. Bishkek: CEATM.

⁵ UNICEF (2009). *Learning Achievement in the CEE/CIS Region. A comparative analysis of the results from the 2006 PISA study*. Geneva: UNICEF.

⁶ Ministry of Education and Science (2009). *Education Development Strategy, 2011-2020 (draft)*. Bishkek: Ministry of Education and Science, Department of Strategic and Analytical Work.

able teachers (listed by subject) that schools report periodically to the District Education Departments. The District Education Departments, in turn, forward these figures to the Ministry of Education and Science. What are not included in these figures are subjects that are taught by unqualified or substitute teachers: correspondence students from universities, professionals without a teaching specialization and teachers that do not have a specialization in the subject they teach. Since these subjects are actually taught, albeit by unqualified staff, they are not considered “vacancies” in the officially reported figures. In other words, the “availability” of teachers (which is the inverse of teacher shortages) does not imply that all the available teachers are in fact qualified.

As we will show in this study, a great number of the so-called “available teachers” would be called para-teachers in other countries. The fact that the Kyrgyz educational system has to rely on masses of substitute or para-teachers without a teaching specialization masks the severe teacher shortages in the system. From an international comparative perspective, one would have to count all those subjects currently taught by para-teachers as “vacancies” in order to obtain a realistic figure for teacher shortages in Kyrgyzstan. The employment of these masses of substitute teachers or para-teachers needs to be regarded as a survival strategy of schools in Kyrgyzstan. Schools would not be able to operate without unqualified substitute teachers. However, needless to say, lessons taught by unqualified teachers have a severe negative impact on the quality of education and student outcomes in the Kyrgyz Republic. Thus, we are suggesting that we interpret the various survival strategies at Kyrgyz schools such as, for example, hiring unqualified substitute teachers, employing retired teachers, assigning excessive teaching loads to qualified teachers, etc., as signs of hidden or latent teacher shortages. This study attempts to bring all these hidden forms of teacher shortages to light in order to start a dialogue on how the crisis of the pedagogical cadre could be resolved in the Kyrgyz Republic.

To summarize, the definition of real teacher shortages is more comprehensive than that for officially reported teacher shortages as it also takes into account the following three phenomena:

- A. Hours taught by “para-teachers,” that is unqualified teachers or individuals without a teaching qualification in a particular subject
- B. Hours taught by qualified teachers who teach either beyond retirement age, beyond the permissible teaching load of 24-27 hours, or beyond the maximum group or class size
- C. Discrepancies between prescribed and actual curriculum, or between hours taught on paper but not in practice. There are many possible causes for the discrepancies, ranging from teacher absences or teacher absenteeism to having instructional hours shortened or canceled.

These three sources of real teacher shortages have served as the basis for formulating indicators of real teacher shortages. The first indicator (cancelled subjects and lessons) corresponds to the officially reported teacher shortages. The other ten indicators have been added to measure teacher shortages in line with international standards and definitions of teacher shortages. TABLE 1 is a summary of the eleven indicators grouped into the three categories mentioned above.

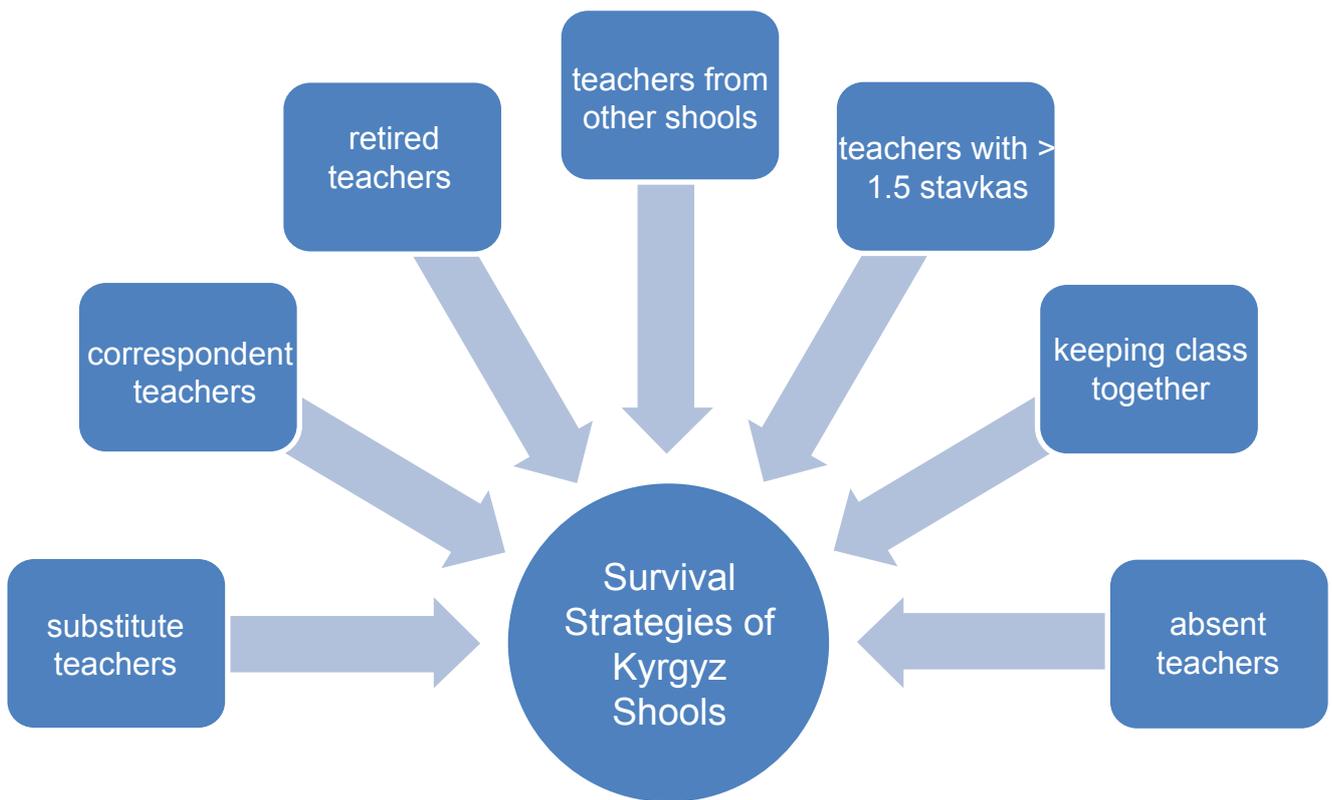
What do we gain by abandoning the existing measure of teacher shortages and instead adopting a more comprehensive measure? Real teacher shortages, as measured by the 11 indicators above, pay great attention to the quality of education and acknowledge that teacher quality has a sizeable impact on students’ results and the quality of education. Thus, it is not only a matter of whether subjects can be taught or not, but also by whom they are taught. The new measure—real teacher shortages—provides policy makers in the Kyrgyz Republic with empirical data on the crisis of the pedagogical cadre. It might guide their efforts to come up with a comprehensive teacher attraction and retention strategy that in the long term resolves the severe crisis of teacher shortages in Kyrgyzstan.

Ten of the eleven indicators, listed above, are in effect survival strategies of schools in times of severe teacher shortages. All eleven strategies except for the first one (canceling subjects or lessons) are “solutions” that schools come up with to cope with severe teacher shortages at school level. Naturally, some of these survival strategies have a negative impact on the quality of education in schools of Kyrgyzstan. FIGURE 1 presents a few survival strategies that, in effect, mask teacher shortages.

TABLE 1 Indicators of Actual Teacher Shortages

		Indicators	Measurement/Examples
1		Cancelled subjects and lessons	Measures those subjects that were reported as having a vacancy (or lessons within a subject that had a vacancy) that had not been taught in the past school year
2	A. Para-Teachers (un-qualified teachers)	Number of professionals (without pedagogical training) who teach at a school	For example, electrician who teaches physics, accountant who teaches math, etc. (professionals without pedagogical training)
3		Number of pedagogical specialists who teach subjects for which they have not been trained	For example, a Kyrgyz language and literature teacher (with a teaching specialist degree) who teaches biology or subjects other than Kyrgyz language and literature.
4		Number of university students who teach at a school	This includes both part-time correspondence students (zaochnik) as well as full-time university students (ozchnik) who teach at the school
5	B. Qualified Teachers who teach beyond the permissible or advised retirement age, teaching load, or class/group size.	Number of teachers of retirement age	Teachers who continue teaching or are brought back to the school to fill vacancies; the retirement age is 63 for men and 58 years for women
6		Number of teachers hired from other schools	To circumvent the regulation on the maximum teaching load (24-27 hours per school), teachers are hired from other schools to teach at the school. At times these teachers are also hired because the school hires teachers with the necessary qualifications
7		Number of teachers teaching at the same school with more than 24-27 teaching hours/week	Schools need to ask permission from the District Education Department if their teachers teach more than 1.5 teaching loads. Some districts have officially lifted the ceiling for the maximum amount of teaching hours from 1.5 to 2 teaching loads (stavka)
8		Number of teachers who do not split the class into groups despite being entitled to do so	In a few subjects (foreign language courses, IT, etc.), schools are permitted to split the class into two groups to allow for more effective learning. Schools with teacher shortages typically do not split the classes into groups to avoid greater teacher shortages
9	C. Mismatch between what is taught on paper and what is taught in practice	Number of teachers with prolonged absences or absenteeism	The absences can be seasonal or permanent and can be related to other non-school related economic activities/work (harvesting, trade, etc.) or other school-related obligations (e.g., principals or deputy principals in charge of teaching classes, but because of other obligations neglect their teaching commitment)
10		Number of teachers who teach for a shorter duration than officially prescribed	The duration of teaching hours is shortened regularly to save on human resources (that are lacking). Reductions in teaching hours apply both to lessons (35 minutes instead of 45 minutes) and the school year (shorter school year than prescribed)
11		Number of teachers listed in the lesson plan who do not actually teach	This indicator includes teachers that are kept on the payroll but who have quit the job and moved to another location. recently or a long time ago

FIGURE 1 Survival Strategies of Schools



Research Background and Setting

This study applies a mixed-method approach that draws both on qualitative and quantitative data. It is a follow-up research project to an important study on teacher retention that was carried out by Creative Associates as part of the USAID Quality Learning Project (QLP)⁷. It complements the USAID study in important ways by focusing on actual or latent teacher shortages, actual annual teaching hours, actual teacher qualifications, hiring practices and retention of teachers as reported at school level. Three other studies served as important background information for this research project: the preparatory analytical work for the Education Development Strategy 2011-2020 of the Kyrgyz Republic (funded by the European Commission)⁸, the background paper for the 2009 *Global Monitoring Report* on teachers' salary reform in the Caucasus, Central Asia, and Mongolia (funded by UNESCO)⁹, and an unpublished study on the *stavka* system in Tajikistan (funded by the World Bank).¹⁰

The research team consisted of an international educational researcher and policy analyst (Gita Steiner-Khamsi) and two social scientists from Kyrgyzstan (Ainura Moldokmatova, Gulzhamal Sheripkanova-MacLeod). Katya Chicherina, a sociology student at the American University of Central Asia, served as research assistant. Nurbek Teleshaliyev and Raiva Toigonbaeva, UNICEF Kyrgyzstan, accompanied the research team during the field research and not only helped with logistical aspects of the research project but also greatly contributed to creating an atmosphere of openness and trust with the interviewees. The quality of the data is outstanding: the interviewees at school, district, and province level readily engaged in conversations and provided us with countless background information, statistical material, and examples that reflect overt and covert teacher shortages in the schools of Kyrgyzstan.

The data was collected over a period of two weeks at the end of May/early June, that is, during a period

⁷ USAID Quality Learning Project in the Kyrgyz Republic (2009). Report on Research "New Teacher Retention in the Kyrgyz Republic." Bishkek: Creative Associates.

⁸ Gita Steiner-Khamsi, Chinara Kumenova and Nurlan Taliev (2008). Teacher Attraction and Retention Strategy. Background paper for the Education Development Strategy of the Kyrgyz Republic 2011-2020. Bishkek: Ministry of Education and Science, Department of Strategic and Analytical Work.

⁹ Gita Steiner-Khamsi, Christine Harris-van Keuren, with Iveta Silova and Ketevan Chachkhiani (2009). Decentralization and Recentralization Reforms: Their impact on teacher salaries in the Caucasus, Central Asia, and Mongolia. Background paper for the EFA Global Monitoring Report 2009. Paris: UNESCO GMR.

¹⁰ Gita Steiner-Khamsi (2007). The *Stavka* System in Tajikistan. Background, challenges, and recommendations for teacher salary reform. Ministry of Education of the Republic of Tajikistan: Education Modernization Project.

when the state exams in grades 9 and 11 were taking place, meaning that many teachers and students had time to meet with us. The size of our research team enabled us to split into three smaller teams and conduct the interviews with the principals/deputy-principals, teachers, and students simultaneously, ensuring that teachers could speak freely without administrators being present in the room. Similarly, students were able to speak to us openly without teachers or administrators being present in the room.

Sampling

Selection of Provinces. We have selected two provinces that are closest to the national average for teacher shortages: the number of schools that reported vacancies (teacher shortages) in the Batken and Jalal-Abat provinces are slightly above the national average. According to the study of the USAID QLP (2009), 56.6% of schools nationwide report teacher shortages. The proportion of schools with teacher shortages is 62.6% in Batken province and 62.7% in Jalal-Abat province.

TABLE 2 Schools with Teacher Shortages by Province/Oblast

Province	Total Number of Schools in the Province	Number of Schools with Teacher Shortages	Percentage of Schools with Teacher Shortages	Ranking
Talas	116	86	74.1	1
Osh	56	40	71.4	2
Bishkek	123	81	65.8	3
Chui Province	325	212	65.2	4
Jalal-Abat	470	295	62.7	5
Batken	225	141	62.6	6
Issyk-Kul	196	95	48.4	7
Osh Province	521	242	46.4	8
Naryn	136	37	27.2	9
Kyrgyz Republic	2,168	1,229	56.6	

Thus, the selected two provinces represent typical cases of teacher shortages. In each of the two provinces (*oblasts*) we selected three districts (*rayons*). The following districts were selected based on their distance to the province center (a combination of distant and near districts were deliberately chosen):

- Batken province: Batken district, Leilek district, Kadamjai district
- Jalal-Abat province: Suzak district, Bazar-Korgon district, Nookan district

Selection of Schools: In a second sampling selection step, we selected schools in the six districts of Batken and Jalal-Abat that reflect the widest variations in school size, distance from the province/district centre, language of teaching and number of officially reported vacancies. Thus, the second step in our detailed sampling technique ensured there was a great diversity of schools. The selection criteria for the provinces, districts, and schools were discussed with the Ministry of Education and Science of the Kyrgyz Republic to enlist their support for a study that is likely to have policy implications.

To ensure anonymity of the informants, we will refer in this report to the five selected schools in the Batken province as Batken 1, Batken 2, etc. and Batken 5 and similarly to the five selected schools in Jalal-Abat as Jalal-Abat 1 to Jalal-Abat 5, respectively. TABLE 3 provides an overview of the sample characteristics.

According to the tariff tables (*tarifikazia*), obtained from the principals of the schools, the ten schools in our sample lack a total of 94 teachers or 9.4 teachers on average. This amounts to a teacher shortage rate of 23%. They should be staffed with 414 teachers but because of a 23% shortage only have 320. Rather than referring to the shortage percentage of 23%, we can also indicate the “availability rate,” a measure that is commonly used by the Ministry of Education and Science and the National Statistics Committee: the teacher availability in the Batken and Jalal-Abat provinces are, according to our study, 77 percent.

TABLE 3 Sample Characteristics of the Ten Selected Schools

	Number of Teachers	Number of Administrators	Number of Students	Languages of instruction	Distance to province centre (km)	Distance to district centre (km)	Number of reported vacancies (# of teachers)
Batken 1	67	4	1,478	Kyrgyz	0	0	10.5
Batken 2	23	3	504	Tajik	150	12	6
Batken 3	30	3	318	Kyrgyz/Uzbek	250	70	6
Batken 4	23	3	412	Kyrgyz	75	70	10
Batken 5	33	4	830	Kyrgyz	60	90	4.5
Jalal-Abat 1	16	2	376	Kyrgyz	64	75	9
Jalal-Abat 2	25	3	439	Uzbek	20	20	4
Jalal-Abat 3	40	4	1118	Russian	70	20	13
Jalal-Abat 4	52	4	1408	Rus/Kyrg/Uz	50	20	25
Jalal-Abat 5	11	2	142	Kyrgyz	80	45	6
Total	320						94
Average	32	3.2	702.5				9.4

Selection of Informants: We interviewed officials in local government offices (village authorities and municipalities), province government offices and District Department of Education offices (*rayOO*). The interviews were scheduled with the directors and, if not available, with the deputy-directors of these offices. At school level we interviewed all available principals and deputy-directors (*zavuch*). We were able to interview *all* teachers in smaller schools, either individually or in focus groups. In large schools we interviewed those teachers that were available. Similarly, we had to use convenience sampling for the selection of students, that is, we scheduled individual or group interviews with students that were on the school premises during our visit.

The list of interviewed individuals, both in government offices as well as in the ten selected schools, is presented in TABLE 4.

TABLE 4 List of Interviewees and Sample Size

	Number of Individual Interviews	Number of Group Interviews	Sample Size: Individuals Interviewed both in individual and group interviews
Interviews in Government Offices:			
Province Government (total: 2)	2	0	2
District Department of Education (total: 6)	4	3	7
Local Government (municipality or ayil okmotu)	2	0	2
Subtotal - Government Level	8	3	11
Interviews in 10 Schools:			
School principals and deputy principals	16	1	17
Teachers			
(44 individual interviews, 113 participated in focus group interviews)	44	7	157
Students			
(3 individual interviews, 205 participated in pair/group interviews)	3	28	208
Subtotal - School Level	63	35	382
TOTAL Government and School Level	70	38	393

Summary: We interviewed 382 individuals at school level and 11 individuals in government offices. Most teacher and student interviews were conducted as pair or group interviews. In addition to these interviews, the study draws on a comprehensive review of decrees, reports, as well as statistical information. For each school, we either received a copy of the tariff classification (*tarifikazia*) or we copied these pay breakdown tables by hand. In half of the schools we also copied the *tabeel*, which can be best translated as “time sheet” or the attendance record that the deputy director typically oversees.

Data Collection Tools and Data Analysis

We designed three separate semi-structured interview guides for principals/deputy-principals, teachers and students, respectively. Several of the questions (for example, number of vacancies, number of para-teachers, duration of lessons and duration of school year, etc.) were posed to all three groups of informants to triangulate the data and draw robust conclusions.

The interviews with government officials took place *after* the interviews at school level and took the form of meetings in which we clarified information that we received at school level. During the meetings with government officials, we also solicited reports, statistical information and important decrees that related to the topic of the study.

We analyzed the data in two steps. First, we transcribed all interviews (duration: 30 minutes to 2 hours). Second, we identified those standardized questions that lend themselves to a quantitative analysis (for example, number of para-teachers, teachers’ qualifications, highest and lowest paid salary in the school, etc.). We entered the information into a SPSS database and produced descriptive statistics.

Limitations of the Study

The strength of this study is the explorative nature of the selected method of inquiry. We followed semi-structured interview guidelines that allowed the interviewees to elaborate in great depth the points that mattered to them the most. Furthermore, we were open to exploring in detail additional points that were raised during the interview. This approach enabled us to understand in depth how schools deal with teacher shortages and why exactly teacher shortages have such a large impact on the quality of education in the Kyrgyz Republic. We also discussed periodically our hypotheses with principals and government officials to ensure that we were not over-interpreting our observations. The ten cases/schools allowed us to understand in depth the causes and the impact of teacher shortages.

Arguably, the greatest strength of this study — in-depth qualitative analysis of a few cases (many variables and small N) — also has its limitations. The limitation of this study was the small sample size: ten schools in two provinces. Even though the case study methodology was conducive for exploring the new conceptual area of real teacher shortages, it didn’t allow us to quantify the scope of real teacher shortages. Nevertheless, developing a methodology for analyzing the mechanisms that schools use to cope with teacher shortages is not to be underestimated and this study has made it possible to list for the first time the various strategies that schools use to deal with the problem and also discusses why some strategies are worse than others and negatively impact the quality of education. Finally, the study also provides a general assessment of how common the various strategies are. It would be feasible to gather, in a follow-up study, detailed statistical information on real teacher shortages, that is, to quantify the frequency of the various strategies at national scale, discussed in this study.

2. OFFICALLY REPORTED TEACHER SHORTAGES: THE PROBLEM WITH STATISTICS

There is a discrepancy between officially reported teacher shortage rates as reported at central level (National Statistics Committee, MoES), district level (District Department of Education), and school level. Even though the absolute numbers are similar, the relative numbers – the number of vacancies as a percentage of the total number of needed teachers at school level – differ considerably. The vast differences between statistical information provided at central, district, and school levels could be explained with the different figures used for the total number of teachers. Even though the absolute numbers for teacher shortages are similar, the teacher shortage rates (or relative numbers) are reportedly much lower at district and central level, because they assume a much higher number of teachers are actually employed at school level.

The vast differences apply to the figures for the number of schools with teacher shortages and with the availability of teachers. First, according to the information from the National Statistics Committee¹¹, 56.6 percent of all schools countrywide and approximately 63 percent of schools in Jalal-Abat and Batken suffer from teacher shortages. In our sample of ten schools, however, all of the schools had teacher shortages. TABLE 5 presents the comparison between the teacher shortage rate, as reported by school principals (second column from the right) and those projected by us for the entire province and the teacher shortage rate in the two provinces, as reported by the National Statistics Committee (last column from right). The average rate of non-available teachers was 23 percent and the teacher shortage rates ranged from 12 percent (Batken #5 school) to 36 percent (Jalal-Abat #1 school).

**TABLE 5 Teacher Shortage Rates:
A Comparison between Empirical and Official Teacher Shortage Rates**

	Languages of instruction	Distance to province centre (km)	Distance to district centre (km)	Number of Teachers	Number of Reported Vacancies	Teacher Shortage Rate (Empirical, School-Level)	Official Teacher Shortages (Nat Stats Committee)
Batken 1	Kyrgyz	0	0	67	10.5	13.5	
Batken 2	Tajik	150	12	23	6	20.7	
Batken 3	Kyr/Uzbek	250	70	30	6	16.7	
Batken 4	Kyrgyz	75	70	23	10	30.3	
Batken 5	Kyrgyz	60	90	33	4.5	12.0	
Average Batken						18.6%	4.6%
Jalal-Abat 1	Kyrgyz	64	75	16	9	36.0	
Jalal-Abat 2	Uzbek	20	20	25	4	13.8	
Jalal-Abat 3	Russian	70	20	40	13	24.5	
Jalal-Abat 4	Rus/Kyr/Uz	50	20	52	25	32.5	
Jalal-Abat 5	Kyrgyz	80	45	11	6	35.3	
Aver. Jalal-Abat						28.4%	3.8%
Average				32	9.4	23	4.2

Second, the same discrepancy applies to the availability rates. The figures of the National Statistics Committee on teacher shortages or non-availability of teachers are much lower than we found in our

¹¹ National Statistics Committee of the Kyrgyz Republic (2008). Education and Science in the Kyrgyz Republic. Statistical Compilation (excerpt from p. 66). See also USAID QLP Report, p. 6f.

study in the two provinces. An availability of 100 percent would imply that there is no teacher shortage. According to the figures from the National Statistics Committee there was 95.4 percent availability in Batken schools and 96.2 percent in Jalal-Abat schools. In our study, however, we found — based on projections made from 10 schools — an availability rate of only 81.4 percent in Batken (or an 18.64 percent shortage) and an availability rate of 71.6 percent (or a 28.42 percent shortage) in Jalal-Abat. There is a need not only to understand and explain the differences between the figures from the National Statistics Committee but also from the Ministry of Education and Science and the ones found in empirical studies, such as the one presented here or the one prepared by the USAID Quality Learning Project (2009).

For the time being, we are only able to offer one explanation: Both the National Statistics Committee and the Ministry of Education and Science assume a much higher number of teachers are employed at school level than what we actually discovered. This accounts for the much higher shortage rate, which is expressed as a percentage of the total number of teachers. Even though the schools accurately report the number of vacancies to the District Education Departments, they tend to over-report the number of employed teachers. There might be several reasons why schools and districts over-report the number of employed teachers to the central level. We found, for example, in our study that at each school there were teachers that worked more hours than permitted at district level. In one district, the District Education Department raised the number of permitted teaching hours from 1.5 *stavkas* (24 hours for primary school teachers or 27 hours for grade 5-11 teachers) to 2 *stavkas* (32/36 hours) and yet we still found teachers that were teaching over 40 hours in schools of this particular district. One way to cover up the high teaching load of teachers is to keep the names of those teachers on the school record or tariff table (*tarifikazia*) that had already quit the job a while ago. By keeping their names on the payroll, the schools manage to partially resolve their teacher shortage by distributing the vacant teaching hours to the existing teaching staff at the school. At the same time, the former teachers that had quit their post but remain listed on the *tarifikazia* of their former employer (also referred to as “ghost teachers”) count as teaching staff. Even though they do not receive any salary because their teaching hours are distributed among other teachers, they are able to build their years of teaching experience, (*ped stazh*) which is essential for receiving a higher salary and a higher social pension fund should they return to the teaching profession at a later stage in their lives. These are but a few tentative interpretations for the discrepancy between the various teacher shortage figures. There is a need to follow-up this discrepancy and explore in greater detail the reasons why schools tend to over-report the number of teachers employed.

What drives teacher shortages? Against all explanations, the variance in teacher shortages is not explained by the remoteness of the school, measured in terms of distance to the province or district centre. Most of the factors that drive teacher shortages have more to do with opportunity cost, that is, the availability of alternative and better sources of income. In some cases the opportunity cost and, as a consequence, teacher shortages were high in schools that were either in towns or relatively close to the district or province centre, because teachers had other, better job opportunities. Also in rural areas that were a long way from towns or cities, teachers often had more attractive job opportunities working in agricultural or animal husbandry. Unlike the situation in Kyrgyzstan, in other low-income countries there is often a close link between teacher shortages and the remoteness of schools. Other poor countries face serious challenges attracting teachers to work in remote rural areas because the standard of living (lack of electricity, no safe drinking water, poor transportation) is so much lower and the working conditions in rural schools are so much worse than in urban and semi-urban areas. This does not seem to be the case in Kyrgyzstan. Teacher shortages are not primarily associated with the location of the school, but it is rather a systemic and countrywide phenomenon. It is therefore important to understand exactly why the teaching profession is so unattractive in Kyrgyzstan.

The close link between teacher shortages and opportunity cost applies to the subjects with the greatest shortages. As TABLE 6 shows, there are three types of subjects that face the greatest challenges in attracting teachers:

- Specializations that are greatly needed in the private sector (English, Russian)
- Specializations with little teaching time that make it difficult for teachers to teach a full teaching load (e.g., music, taught for 1 hour/week in grades 1-7)
- Specializations that do not have an equivalent in pre-service teacher education (e.g., economics;

even though these subjects are not identified as those with shortages).

In other words, there are different reasons why some school subjects have “chronic teacher shortages” therefore, what is needed is a package of reforms rather than a single solution to remedy the crisis of the pedagogical cadre.

TABLE 6 Teacher Shortages by Subject: Batken and Jalal-Abat Provinces

	BATKEN PROVINCE		JALAL-ABAT PROVINCE	
	Number of Needed Teachers	Percentage of Total Teacher Shortages (in %)	Number of Needed Teachers	Percentage of Total Teacher Shortages (in %)
Kyrgyz	19	4.7	32	4.6
Russian	42	10.3	100	14.6
English	78	19.3	114	16.7
Math	37	9.2	83	12.1
IT/Computers	21	5.2	35	5.1
Physics	37	9.2	69	10.1
Biology	5	1.2	16	2.3
Chemistry	17	4.2	35	5.1
Geography	16	3.9	30	4.4
History	16	3.9	38	5.6
Physical Education	26	6.4	41	5.9
Military Training	6	1.5	14	2.0
Craft Classes	6	1.5	8	1.2
Music	30	7.4	12	1.7
Primary School	39	9.7	41	5.9
Arts	8	1.9		
Economics			4	0.6
Other	1	0.2	12	1.8
TOTAL	404		684	

Source: Ministry of Education and Science 2009

The principals submit their lists of anticipated vacancies at the end of the school year to the District Education Departments and provide updates throughout the year. The figures on vacancies impact the re-calculation of salaries (*re-tarifkazia*). Therefore, inconsistencies in the number of vacancies arise if figures from different time periods are compared.

3. INDICATORS FOR MEASURING REAL TEACHER SHORTAGES

We have identified 11 indicators that measure real teacher shortages at school level. In developing these indicators we used a simple standard: a high-quality educational system should have a sufficient supply of *qualified teachers*. “Sufficient supply” implies 100 percent availability of qualified teachers at school level. All employed teachers in an educational system that depart from that ideal norm — not only teachers with only general secondary education degree but also university students or retired teachers working as teachers, etc —are in our definition regarded as an indication of real teacher shortages. The officially reported statistics on teacher shortages, discussed in the previous section, only counts the *availability of teachers*. In contrast, we are examining in this study the *availability of qualified teachers* at school level.

We are presenting here two typical examples of how principals deal with teacher shortages at school level. We would like to refer to these strategies as “survival strategies” since they help the schools to survive. Yet, most of these strategies have a negative impact on the quality of education in these schools. The first example is of a school in Jalal-Abat and the second is from Batken province.

BOX 1. Survival Strategies of Schools

Example 1: School in Jalal-Abat Province (Interview with the Principal & Deputy Principal)

Background information on the school:

- 48 teachers work at the school
- Officially reported vacancies: 25 teaching loads/*stavkas*, which means a shortage of 25 teachers IF one assumes that a teacher only teaches 1 *stavka*/teaching load
- Physics is not taught at all in the grades 7-11 because of teacher shortages

Question: How do you cope with teacher shortages in your school?

Answer: Firstly, we don't divide the classes in Kyrgyz, English, and Russian into two groups even though we would be entitled to do so. This is bad for the quality of teaching in these classes, but we do not have any other choice. Secondly, we invited four teachers from other schools to teach at our school. Thirdly, we begged our own retired teachers to come back and teach for us. Seven of our teachers are of retirement age, but are still working. Finally, we received permission from the District Department of Education to give our teachers a double teaching load and 20 teachers at our school teach more than 2 *stavkas*/teaching loads (more than 32-38 hours). The highest teaching load/week at our school is 50 hours. Teaching so many hours is inhuman for teachers, but there is no choice.

Question: How many of the teachers that took on additional hours teach subjects for which they haven't been trained?

Answer: It is easier to answer, which teachers only teach subjects for which they have a specialist diploma, degree, or certificate! Most of our teachers take on additional hours in subjects for which they never took preparatory courses.... [The Deputy Principal goes through the list of teachers, listed in the *tarifikazia*]. Of the 48 teachers in our school, 22 teachers teach subjects other than the ones they have been trained to teach.

Example 2: School in Batken Province (Interview with the Principal & Deputy Principal)

Teacher shortages are massive in our school: Only patriots teach here. Officially, we have:

- 1 vacancy in the primary school
- 9 vacancies in the secondary school (that is, 9 teaching loads are unassigned).

This is the picture of our teacher shortage and this is how we cope with it:

- a) Physics: non-existent; we don't teach physics in any of our classes. The physics teacher we had became head of the local government this May and left his teaching post.
- b) Math: 2 correspondence students teach math; both of them have taken on two *stavkas* to fulfill the need for math instruction.

- c) Chemistry: we haven't taught chemistry for the past 5 years.
- d) English: 4 years ago we had 1 English teacher who joined our school and stayed with us for two years, but then she went to Russia with her husband so we haven't had an English teacher for the past 2 years.
- e) Geography: we don't have any geography teachers. For the past 5 years the Kyrgyz language teacher has taught the geography hours.
- f) Music: we are only entitled to 0.75 *stavkas* for music. It is very unattractive/impossible to be a professional music teacher at our school. We haven't taught music for the past 4 years. I used the 0.75 *stavkas* and redistributed them among the existing teachers and they use it to sing during the extra-curricular hours; but I wouldn't call this musical education.
We used to have a music teacher (in fact, my son – now 30 years old), but he only earned 1,500 soms for the 0.75 *stavka* in music and he eventually quit the post and took a job in construction in Batken centre and is now earning 6,000 soms. This way, he can support his own family.
- g) Arts and technical drawing: 5 years ago, the arts and technical drawing teacher left for Russia and we haven't had a teacher for the past 5 years. I redistributed the teaching hours and gave them to the handicrafts teacher but this handicrafts teacher retired last month.
- h) History: I (the principal) am the only history teacher. I gave the Kyrgyz language teacher 1 *stavka* and I teach the other *stavka* in history. I had to get permission to teach this additional *stavka*, because principals are only allowed to work for 1.5 *stavkas* (1 *stavka* is for administration). I only teach in the upper classes, that is, in classes 10 and 11.
- i) Math: see above: currently taught by two correspondence teachers, each with 2 *stavkas*. We used to have 3 math teachers with higher education diplomas specializing in math, but 1 left for Russia, 1 left school to work in the post office and 1 sits at home and does nothing (she receives money from her husband who is in Russia).
- k) Primary school, we lack one primary school teacher and this is how I resolved it: one primary school teacher teaches two *stavkas*, that is, two primary school classes.

3.1. Cancelled Subjects and Lessons

In an attempt to minimize the number of vacancies principals redistribute the vacant teaching hours among the existing staff of the school, hire university students to teach at the school, or engage in a host of problematic hiring practices that have a negative impact on the quality of education. When all attempts to fill the vacancies or redistribute the vacant hours fail, they resort to the least desirable option: they cancel subjects or lessons. The following three interview excerpts illustrate the complexity of the situation and show how schools try very hard to find solutions that would avert the cancellation of subjects or lessons.

In eight of the ten schools, at least one of the subjects was either not taught at all or only taught in selected classes and grades during the 2008/2009 school year. English, physics and Russian are the three subjects for which principals seem to face the greatest difficulties in finding substitute teachers. For example, in Jalal-Abat, English was not taught at all in 4 of the 5 visited schools. The difference between official curricula and actual curricula was graver in some schools than in others. One school in Batken province, for example, reported:

- *Informatics: we haven't taught informatics for 5 years*
- *Russian: we haven't been able to teach Russian language and literature for the past 3-4 years*
- *Math: Our 7th and 8th graders haven't had math for the past 3 years.*

The principals/deputy principals, teachers and students openly spoke about subjects that had not been taught or were cancelled during the past school year. However, in some instances students listed more subjects that were not taught than what principals/deputy-principals or teachers reported, suggesting that in a few cases subjects were officially listed, but not taught in practice. Examples from students' comments include the following:

- *The physics teacher took maternity leave and she was not replaced.*
- *The lessons in Russian language and literature were usually conducted by the math teacher, who also left. Now we have neither Russian nor math.*
- *Chemistry was not offered from September until March. We only had chemistry starting in April.*

The following is an excerpt from a group interview with students from a school with classes in Russian, Uzbek, and Kyrgyz languages of teaching. In our sample of ten schools, those schools with Russian as the teaching language faced the greatest teacher shortages. During the Soviet period these schools were able to recruit teachers among the native Russian-speaking population, nowadays, however, many Russian-speaking teachers have either emigrated to work in Russia or Kazakhstan or have found more lucrative jobs outside the educational sector.

BOX 2. Cancelled Subjects or Cancelled Lessons in a School

Example from a School with Kyrgyz/Russian/Uzbek Languages of Teaching (Excerpts from Group Interview with Students)

Russian teaching language classes:

- Teacher shortages in physics – the 10th, 9th and 7th grade students reported a lack of physics teachers. It seems that the school had tried to find different substitute teachers each year and eventually gave up on finding a replacement: “Physics was not taught at all when we were in the 7th and 8th grades. Due to a lack of teachers in the 9th grade, a math teacher was found who agreed to teach physics. In the 10th grade it was again withdrawn from the timetable” (10th grade students). The informatics teacher taught physics for a full school year when we were in the 7th grade. but since then, that is, since the 8th grade, we haven’t had this subject at all...” (9th grade students). “We also didn’t have physics this year...” (7th grade students)
- Teacher shortage in economics: “Economics is taught by the teacher who teaches chemistry to Kyrgyz classes...” (9th and 10th grade students)
- Problems with other classes: The 7th grade English language teachers changed 4-5 times this year whereas the Russian and Kyrgyz language teachers changed 2-3 times. Kyrgyz language started in October instead of September.

Kyrgyz teaching language classes:

No teacher vacancies reported

Uzbek teaching language classes:

The 8th grade students reported having no Informatics lessons at all.

However, as the example above demonstrates, it would be wrong to assume that each vacancy leads by default to a subject or a lesson not taught. As we will explain in the next few sections, most subjects are in fact taught despite officially reported vacancies. However, as we will show in the next few sections, many compromises are made for the sake of survival.

3.2. Professionals without Teacher Training who Work as Teachers

There is a sizeable group of professionals without vocational-technical teaching degrees (ped uchilische) or higher education teaching specialist diplomas who work as teachers in schools, because there were no jobs in their own field. This survival strategy is frequently applied to subjects with little teaching time (e.g., economics, IT/computer science). A few of these professionals had completed a crash course in teacher training such as, for example, a 3-month certificate programme, but the majority of them work in schools without any teacher training. In a few cases, the professionals that teach a particular subject are competent specialists: for example, an unemployed economist with a higher education diploma teaches economics, or an unemployed informatics specialist teaches IT, but very often there is no correspondence between educational background and the subjects being taught in schools. TABLE 7 gives examples of professionals working as teachers in schools.

TABLE 7 Professionals without Teaching Degrees Working as Teachers

Educational Background of Para-Teacher	Teaching the Following Subject(s)
Electrician, technical college in Russia (TVET)	Russian language and literature
Economist, higher education diploma	English
Correspondence university student in electronics	Ethics, physical culture
Correspondence university student in economics	Math
Civil construction specialist (Polytechnic)	Handicrafts classes, physical education
Tailor (TVET)	Handicrafts classes, environmental studies, music

Several of these professionals that lack teacher training have become quite committed to teaching and over the course of their teaching careers enrolled in correspondence studies to become fully certified teachers. They are also very respected by their students, as the following excerpt illustrates:

BOX 3. Professionals Working as Teachers

Example of a tailor working as a teacher:

The following professional tailor who has worked as a teacher of handicrafts, environmental studies, and music for the last 15 years comments:

“Handicrafts is a very popular subject among the girls in this school. This is because in rural areas, like ours, sewing and tailoring skills will be of a great use when the girls grow up and marry. Therefore they asked me to teach more hours. As the school doesn’t have adequate facilities for this work I decided to organise circles at home after school classes...I don’t take money from them as I feel it wouldn’t be right to do so...Anyway I feel rewarded spiritually from thinking that I can help them...”

The same professional/teacher, however, commented: *“The salary is not enough for my big family. My husband used to work at this school as a primary school teacher, but due to a constant lack of money he decided to quit 3 years ago. Now he is a businessman – doing commerce in Russia. I am also planning to leave as soon as our kids get older or, if we earn enough money, I will establish my own small workshop...”*

In a separate focus group interview, the students of the tailor/teacher talked about the handicrafts classes as follows:

‘We love our handicrafts classes. Here we learn even more than from our mums and sisters, who are always busy in the field or at home. We sew clothes and weave small carpets. Unfortunately, the school doesn’t have facilities for this work, so we go to our teacher’s home.’ (5 students; 8th grade girls)

This group of unqualified teachers should be considered “covert unqualified teachers” because the salary system in Kyrgyzstan does not differentiate the educational background of teachers with regard to specialization. Thus, someone with a higher education diploma with a specialization in economics who teaches at a school earns the same as someone with a higher education diploma with a specialization in teaching/education. In fact, the principals and the deputy principals did not quite understand why we distinguish between teachers with a teaching background/teacher certification and those with a non-teacher training background. For them only the formal degree seems to count. It is striking that the content of the degree programme does not matter that much for working as a teacher. This applies especially to professionals who had been working for many years in schools. They are totally respected as teachers even though most of them never completed a teaching degree. The tariff classification does not document the specialization but only the formal degree of teachers working in schools. We are therefore not in a position to identify how many of those that are, for example, listed as having a higher education diploma obtained such a diploma in a teaching specialization or whether they are specialists in another field/profession. Similarly, we are not able to assess how many professionals with vocational-technical training have come from outside the teaching field and now work in schools.

3.3. Teaching Specialists Who Teach Subjects for Which They Have Not Been Trained

All of the ten examined schools have assigned vacant teaching hours to teachers who already work at the school. As a result, teachers teach more than one normative teaching load of 16/18 hours per week. The third indicator measures how many of the additional hours are in a subject other than the one for which the teacher was trained. We excluded those teachers who, by training, are entitled to teach two subjects (e.g., math/physics, biology/chemistry, etc.) and only focused on those teachers who, because of teacher shortages, are asked to teach subjects for which they lack the knowledge, competence, or certification. We found that 19 percent of all teachers teach at least one additional subject in which they have not received any training. Of these 60 teachers who teach in areas they know very little about, 45 of them are assigned one additional subject, 14 teach two subjects and one teacher has taken on three subjects.

TABLE 8 Examples of Subjects Taught by Non-Specialist Teachers

Own qualification	Additionally teaches
Biology Teacher	Chemistry, Society and Man, Economics, Geography
Russian Language Teacher	Drawing
History Teacher	Music
Librarian	Handicrafts
Uzbek Language	History
Kyrgyz Language	Drawing and the Arts
Geography Teacher	Physical training

The practice of assigning vacant hours to other teachers at the school, regardless of the specialization of the teacher, is very common and has a devastating effect on the quality of education. This study shows that every fifth teacher in the Kyrgyz educational system teaches a subject without adequate training and knowledge. Subjects with low teaching hours are likely to be taught by non-specialists, such as music, handicrafts, economics, man and society, astronomy, drawing and creative work, etc. Older students, such as the ones mentioned below, frequently commented on the lack of teacher competence in their schools:

Our chemistry teacher teaches a number of other subjects as well: biology, man and society and economics. This affects the quality of our classes. It would be better if other teachers taught other subjects... (10th grade students)

Students are not the only ones dissatisfied with the situation. The teachers themselves don't feel comfortable teaching subjects for which they have not been trained:

Since I had some computer skills I was asked to teach informatics. At the very beginning during the first 2 chetverts (quarters) I taught theory only... I had to learn IT together with my students. I had to read a lot about computers... I admit that some students have a better understanding of computers than me, since they spend a lot of time in computer clubs. Together with informatics, I was given environmental studies to teach because the previous informatics teacher taught this subject as well. I didn't want to take it on but I had no choice. The school permanently lacks biology teachers. Even though I know very little about the subject, I cannot ask other teachers to teach it because they all have their own hours and biology teachers do not stay long... For instance, this year they had several biology teachers but each of them only stayed for a few weeks. ... My teaching schedule during the 2008/2009 academic year changed very often due to frequent changes of teachers. Some teachers worked for 1 month only... Many left because of the salary.

3.4. University Students Working as Teachers

There are two types of university students who work as teachers: correspondence students (*zaochnik*) and full-time university students. The number of correspondence students working as teachers ex-

ceeds the number of full-time students. In one of the districts examined in this study, the ratio between these two types of university students who are hired as teachers is 1:6, that is, 51 full-time university students to 309 correspondence students. Typically, District Education Departments make agreements with universities in the province or region to have university students fill the vacant positions. Part of the agreement is, for example, that 4th and 5th year university students are allowed to skip their classes at the university if they teach at a school. This applies to *all* degree programmes and not to just teaching specializations. According to the agreement, only the best 4th and 5th year university students are supposed to work as teachers and earn the entry-level salary of a full-time teacher. After all, they miss all their classes for two years and only show up at the university for their exams. In reality, however, any university student is able to join this university-school collaboration programme.

Similarly, there is a huge gap between the theory and practice of correspondence studies. In theory and as per the agreement, correspondence teachers should (a) only start teaching towards the end of the second year of correspondence studies and (b) should quit teaching twice a year for a few weeks to attend teacher training classes (autumn and spring). In practice, however, most correspondence students are former students from the schools who start teaching immediately after they have completed grade 11 at the school. Students of 10th and 11th grade classes reported how former friends of theirs who used to be one or two grades ahead of them now work as teachers at their schools. To make things worse, most correspondence students cannot leave their teaching post twice a year to take classes in pre-service teacher training because the school depends on them and also because the correspondence student cannot afford to lose the income whilst studying. The transition from a 11 grade student to a young correspondence study teacher the following year is naturally not easy. The younger correspondence teachers told of their nervousness about teaching and a few of them explicitly mentioned the problem of earning the respect of 10 and 11 grade students. Most schools pair experienced teachers with inexperienced ones, but in practice the experienced teachers have such a high teaching load themselves that they are not in a position to sufficiently train and mentor the inexperienced young teachers.

Whereas the majority of correspondence teachers are former students who continue at their schools as teachers, there are also older correspondence students who earn a higher education specialist diploma by means of part-time or correspondence studies because they only completed general secondary school or only had vocational-technical training.

TABLE 9 provides an overview of the educational background of the teachers at the ten selected schools. In the tariff tables, the university students (both full-time university and correspondence students) are listed as having “incomplete higher education.” We inserted the ratio of teachers with incomplete higher education as a percentage of the entire teaching force at the school.

TABLE 9 Qualifications and Educational Background of Teachers

Educational Background	BK 1	BK 2	BK 3	BK 4	BK 5	JA 1	JA 2	JA 3	JA 4	JA 5	Total
Higher education specialist diploma	51	17	18	23	16	10	21	31	34	4	225 69%
Incomplete higher education (university students)	7 10%	4 17%	10 30%	3 9%	2 9%	2 13%	2 8%	3 8%	7 14%	2 15%	42 13%
Vocational-technical education (including ped uchilische)	7	2	3	6	5	4	2	5	10	6	50 15%
General secondary school	2	0	2	3	0	0	0	1	1	1	10 3%
Total number of teachers	67	23	33	35	23	16	25	40	52	13	327

The correspondence and full-time university students account for 9-30 percent of the teaching staff in the ten visited schools. On average, every seventh teacher or 13 percent of all teachers in the ten schools are teachers with incomplete higher education. This group of young teachers is not to be underestimated. In Kadamjai rayon, the district in Batken province with the highest teacher shortage rate in the province, 16 percent of the employed teachers are correspondence students.

It is difficult to imagine how schools in Kyrgyzstan would operate without the large numbers of correspondence university students working as teachers. Despite their low teaching quality, the correspondence students are popular; partly because they are former students of the schools and partly because they are likely to keep working at the school when they have completed their studies. They are from the village, town, or city and have family and other social bonds in the community. Unless they are women and marry someone from another location, they are likely to carry on teaching at their schools either full-time or part-time. As one principal said in an interview:

We do try to hire young teachers. We keep hiring them and then they leave. Last year alone, 5 young teachers left for Russia. The ones with a higher education diploma only last a few weeks and then leave. The correspondence students are much better: they stay.

Correspondence students, however, are also well-liked because so many of the regular teachers are former correspondence students themselves. When we scratch the surface of the group that has, according to the National Statistics Committee, higher education specialist diplomas (78 percent of the teaching force nationwide), we find that many of them earned their specialist diplomas via correspondence courses. In the ten visited schools, one-third to a half of the teachers with a higher education specialist diploma were former correspondence students (or, former teachers with incomplete higher education). This means that many of the regular teachers with a university degree did not complete a full teacher training course and most of them learned how to be teachers at schools. This applies especially to the middle-aged teachers who completed their studies in the 1990s and afterwards. These teachers completed their higher education diploma as correspondence students. In contrast, the older teachers (known for having better teaching skills) studied as full-time students during Soviet times.

Even though the former correspondence students end up having the same degree (Higher Education Specialist Diploma), the principals distinguish between teachers who completed their studies full-time or as correspondence teachers. One principal, for example, explained that she does not assign 10th and 11th grade classes to teachers who were former correspondence students. Another principal insisted that she doesn't select former correspondence students as mentors for young teachers regardless of how experienced and skillful the former correspondence students have become over the years. Clearly, students or teachers that undertake/undertook their teacher education in the form of correspondence courses have the reputation of becoming/being second-class teachers. Bear in mind, for now, that many of those that are listed in the official statistics as having higher education specialist diplomas are, on closer examination, former correspondence students.

3.5. Teachers past Retirement Age

In the ten examined schools, the ratio of retired teachers as a percentage of the overall teaching force in schools ranges from 0-30 percent. Typically there are 1 or 2 retired teachers who have been 'brought back' to teach by the principal or even the District Education Department. Most of them did not want to return to work, but felt obliged to come back and help out.

TABLE 10 Retirement age Teachers in the Sample Schools

School	Teachers (total)	Retired Teachers	Percentage of Retired Teachers (%)
BK 1	67	7	10.4
BK 2	23	1	4.3
BK 3	30	2	6.7
BK 4	33	1	3.0
BK 5	23	7	30.4
JA 1	16	2	12.5
JA 2	25	2	8.0
JA 3	40	4	10.0
JA 4	52	7	13.5
JA 5	13	0	0.0

The “over-aging” of the teaching force is heatedly discussed in the Kyrgyz Republic. According to the National Statistics Committee, 5 percent of all teachers nationwide are over 59. The district-level data that we collected from the District Departments of Education suggests a higher rate. According to that information, retirement age teachers account for 5-10 percent of all teachers in the selected districts of this study. With extremely few young specialists interested in teaching the system is extremely vulnerable to teachers of retirement age or shortly before retirement deciding from one month to the other, to cease working. As the following excerpts from interviews show, principals are afraid that teacher shortages will become worse than they are now.

BOX 4. Teachers of Retirement Age

Example of a School Relying on Retired Teachers

We have many teachers that officially are already retired and teachers approaching retirement age. This worries me a lot because there are no replacements for these very committed and experienced teachers. This is the list of 10 retired teachers or teachers of retirement age that left or will leave teaching over the next few years:

- One says he will retire in September
- The second one quits in the summer and will be gone by September
- The third left; yesterday was his farewell party
- The fourth leaves in 2 years
- The fifth leaves in 4 years
- The sixth leaves in 2 years
- The seventh left during this school year
- The eighth is 65 and is 5 years over retirement age, he could leave any moment now
- The ninth is a 64 year old primary school teacher with 43 years teaching experience; she also might leave any moment now
- The tenth teacher is entitled to retire in 2 years

What will I do as a principal if these teachers really quit their job and retire? Close the school?

3.6. Teachers Hired from Other Schools

Being hired simultaneously by two or more schools is very common in urban and semi-urban schools where other schools are within walking distance. The practice of hiring teachers that “belong” to another school enables principals to circumvent government regulations regarding maximum teaching loads. The statutory or normative teaching load in Kyrgyzstan is 16 hours for primary school teachers and 18 hours for 5-11 grade teachers. Thus one teaching load (Russian: stavka) is 16-18 hours. Typically, teachers that are hired from another school teach in total more than 1.5 or 2 teaching loads and are marginalized as the “teacher from another school.” They complained in their interviews that the second school or the host school doesn’t treat them the same as teachers that are from the school. The teachers at the host school are considered only part-time teachers even if they teach a full teaching load at the second school. Three of the schools in our study were in a town and all of them had a substantial number of teachers who worked simultaneously at 2 or 3 schools. In one of the municipal schools in our study, there are 40 teachers: 29 who are based at the school and the other 11 are hired from surrounding schools. In another school, 10 of 67 teachers were part-time teachers that the school hired from another school. In the third municipal school, 4 of the 52 teachers were based at another school.

Curiously, teachers from rural schools in this study were convinced that teachers from towns are in a position to easily find additional sources of income to make a living. But teachers in town consistently expressed the inverse and felt sorry for themselves. They thought it is much more attractive to be a teacher in a rural area than in a town. In other words, the interviewed teachers always considered the other teachers as the lucky ones and highlighted the financial hardship of their peers in their own community. This strongly held belief was also manifested in teachers’ rationalization for working in several schools:

In villages, teachers have additional income from selling produce or meat, but in towns and cities teachers have fewer job opportunities and therefore teach many more hours, preferably at their own school or, if not available, at another school.

3.7. Teachers with Multiple Teaching Loads

Similar to the previous indicator, this indicator measures the proportion of teachers with teaching loads above the legally permissible or advised teaching load. Strikingly, there is a great deal of confusion and legal confusion as to what the ceiling is with regard to the legally permissible teaching load. The responses that we received included 1.5 teaching loads in total (24-27 hours), 1.5 teaching loads per school (32 – 36 hours) with no upper limit for all the teaching loads combined, 2 teaching loads in total (32 – 36 hours), or even 40 hours as in the Labour Code. The answers varied depending on whether we asked teachers, principals, or government officials and they also differed by district and province. The fact remains, however, that distributing the vacant hours to other teachers in the same schools is standard practice.

We gathered information on teachers' basic salaries per teaching load (stavka rate), the number of weekly teaching hours and noted the salary supplements and salary deductions in the ten examined schools. In addition, we received from all the ten principals the tariff tables that, besides the salary information for each employed teacher, also list the following characteristics of the teacher: age, work experience, teaching experience, educational background, salary category and salary level, subject specialty, weekly teaching load and additional teaching functions. Based on these two different sources of information — teachers and administrators — we are able to provide reliable information both on the teaching load and salaries of teachers in the ten examined schools. TABLE 11 provides an overview of the lowest and highest teaching loads held by teachers at the ten selected schools.

TABLE 11 Lowest and Highest Teaching Loads

School	Lowest Teaching Load per Week	Highest Teaching Load per Week
BK 1	12	36
BK 2	9	35
BK 3	10	38
BK 4	15	43
BK 5	17	36
JA 1	23	37
JA 2	10	36
JA 3	8	46
JA 4	12	50
JA 5	7	35

On the average, teachers in the ten schools teach 27 hours per week, which corresponds to slightly over 1.5 normative teaching loads. It is common for language, math and science teachers in schools with large teacher shortages to teach 35-40 hours/week. In two of the districts, the teaching shortages were so acute that the District Education Departments lifted the ceiling and demanded that principals only submit special requests if teachers were assigned to more than 2 teaching loads.

Even though a high teaching commitment implies less time for preparing lessons and reviewing students' work, teaching loads of 1.5 stavkas and above are very popular among those teachers that do not have other sources of income. A cursory analysis of the tariff tables reveals that older teachers tend to have a bigger teaching load than young ones. Based on that observation, we asked the interviewees whether teachers fight over getting more teaching hours. Nine of the ten principals confirmed that they tend to assign the vacant teaching hours to older, more experienced teachers. One of the principals explicitly addressed the issue and made the point that young teachers are already "punished" by their very low starting salaries and that he therefore assigns vacant teaching hours to younger and middle-aged teachers that have children to raise.

The vacant hours are redistributed at the end of August, shortly before the start of the next school year. There are different protocols for appointing teachers to take on additional hours. In most of the visited schools the principals themselves decide who will be assigned vacant hours. In a few schools, the prin-

principal, deputy principal and the Teachers' Union representative present a list of entitled teaching loads/stavkas by subject and discuss them openly at teachers' meetings.

3.8. Teachers Working in Undivided Classes and Groups

In a few subjects (foreign languages, informatics), teachers are entitled to split the class into 2 or 3 groups to allow for more effective teaching. A common but highly unpopular strategy to cope with teacher shortages is not to divide classes but rather keep the students in big groups of 25 and more.

In exceptional cases, schools also combine two classes into one because of teacher shortages. The last four indicators — indicators 8, 9, 10, 11 — represent school-level strategies to cope with teacher shortages. However, since some of them are considered unofficial the interviewees were hesitant to provide exact data and possibly under-reported these strategies. We are therefore only able to provide examples from various schools and are not in a position to make any estimates of the frequency with which these coping mechanisms are used.

The image shows a document titled "Сабактардын регламенти" (Lesson Schedule Regulation). It contains three tables, each with 5 rows of lesson times. The columns are labeled "Сабактар" (Classes), "Коргуу" (Lesson), "Чыгуу" (Lesson), and "Ден калуу" (Break). The lesson durations are listed in minutes.

Сабактар	Коргуу	Чыгуу	Ден калуу
1	8 00	8 40	5 минут
2	8 45	9 25	5 минут
3	9 30	10 10	10 минут
4	10 20	11 00	5 минут
5	11 05	11 45	5 минут
6	11 50	12 30	5 минут

Сабактар	Коргуу	Чыгуу	Ден калуу
1	12 35	13 15	5 минут
2	13 20	14 00	5 минут
3	14 05	14 45	10 минут
4	14 55	15 35	5 минут
5	15 40	16 20	5 минут
6	16 25	17 05	5 минут

Сабактар	Коргуу	Чыгуу	Ден калуу
1	16 25	17 05	5 минут
2	17 10	17 50	5 минут
3	17 55	18 35	10 минут
4	18 45	19 25	5 минут
5	19 30	20 10	5 минут

3.9. Teachers with Prolonged Absences and Absenteeism

Naturally, prolonged absences and teacher absenteeism tend to be under-reported by principals and teachers. Therefore, in addition to interviewing principals and teachers, we also asked students to comment on these issues. In fact, the group interviews with the students provided the most useful and reliable data on this particular issue.

We identified two main reasons for prolonged absences and absenteeism:

- *Seasonal absences during the planting (spring) and harvesting seasons (fall)*

The interviewees spoke openly about absences resulting from working in agriculture. In some schools, the principals and teachers denied the occurrence of such absences whereas the students confirmed that neither teachers nor students show up in school during the labour-intensive months in agriculture. In other schools, principals regulate the extent of absences by temporarily reducing, for example, the number of shifts from two shifts to one thereby allowing teachers to work part-time in agriculture. It is safe to assume that the annual teaching time is significantly shortened because of seasonal absences of teachers. In general, principals and government officials at the District Department of Education turn a blind eye to teachers that miss school because of seasonal work commitments in agriculture. The following excerpts illustrate the lack of punishments principals and government officials can administer. The decision not to punish teachers for their prolonged absences is not only directly related to their low salaries, but also to the realization that schools cannot afford to upset or lose teachers in these times of severe teacher shortages.

BOX 5. Teachers' Seasonal Absences

Examples of How Schools React to Teachers' Seasonal Absences

Principal:

I try to be soft with the teachers [who work in the fields during planting and harvesting seasons], because if I were too strict, the teachers would quit their jobs. It's not a problem if a teacher misses school for only a day or so; I only look for a stand in if a teacher misses more than 1 or 2 days in a row.

Teachers' Union Representative:

If a teacher misses classes, we call a meeting with the teacher and the principal. Reasons for absences are often seasonal work/harvesting in the months of September/October and May. The schools pay the substitute teacher hourly, because the teacher usually only misses half of the day during planting and harvesting season. In general, we count on the “morale” of the teacher – [trying to convince them to miss as few days as possible].

But in general we fully understand that a teacher needs to have other sources of income: A teacher earns 100,000-200,000 KGS from selling carrots and potatoes. This is the equivalent of 1-3 annual salaries of a teacher! A teacher’s salary is 4,000 – 6,000 KGS per month or 48,000-72,000 KGS per year. However, the produce from one harvest sells for 100,000-200,000 KGS on the market. To make that much money, the teacher needs to work in the field and in the market for just a few days a year. It is natural that teachers prefer working in the field than working in the school during the planting and harvesting seasons.

It is important to bear in mind that work-related absences are also common for students, especially for the older children and youths in classes 5-11 who are expected to work in the fields during the planting and harvesting seasons or have to help transport or sell produce.

- *Chronic teacher absenteeism because of work overload in schools*
Students complained about teachers, especially those with more than two teaching loads/stavkas, who often come late or miss classes. They either have their class merge with another class or put a student (class president) in charge of “keeping the class quiet.” Principals and deputy principals deserve special mention here. Their administrative workload is considered equivalent to one normative teaching load. Like teachers who are not able to live on one teaching load, school administrators take on additional work — in the form of teaching hours — to boost their salaries. Schools, in turn, depend on school administrators’ interest and willingness to take on teaching hours. All the examined schools had their school administrators (2-3 individuals) teach to minimize teacher shortages. Principals and deputy principals are, however, notorious for canceling lessons or asking teachers to fill in for them whenever urgent administrative work arises.

3.10. Cutting Teaching Time

Kyrgyzstan experienced an electricity crisis during the winter 2008/2009 and schools with electrical/central heating systems had permission to reduce their teaching time during the winter months if they prolonged the school year in other ways. It was recommended to cancel the autumn and spring school breaks and extend the school year beyond the end of May. In the ten schools that we visited nine of them were hit by the energy crisis. Only one of the schools was exempt from the energy crisis because it had a traditional metal stove (burzhuika) which relied on coal and wood rather than electricity.

The crisis-induced winter break in the nine visited schools lasted for the entire month of January and the first week of February. In one of the nine schools the teaching time for all lessons was reduced from 45 minutes to 25 minutes during the winter months. The other eight schools had to close down for the entire month of January and the first few days of February 2009. Approximately half the schools cancelled the spring and autumn school holidays (2 weeks in total) and held classes during those two weeks to make up for the lost teaching time. But, against all official recommendations, none of them extended the school year into the month of June to make up for the missed classes. All of the schools that we visited finished classes on May 24th and only had students come in for standard exams in the month of June. This means that students in these ten schools missed 2-4 weeks of teaching time in school year 2008/09.

The inability to extend schooling into the summer months in times of an unexpected energy crisis had many causes. Teachers were neither willing nor able to work a few weeks more at school because they had other work commitments over the summer months.

3.11. Ghost Lessons and Teachers

In order to avoid confusion we will briefly address the two phenomena separately:

- *Ghost lessons*

In their struggle to keep their schools functioning during severe teacher shortages, principals at times resort to practices that are problematic. There is a great fluctuation of teachers, especially among younger teachers, who quit their jobs at short notice. They either move to another location in Kyrgyzstan or emigrate to Russia to follow their spouses, or quit teaching because they don't like the work and living conditions. Rather than notifying the District Department of Education about a new vacancy they keep the teacher and the lessons "on the books" and pretend that the lessons are being held as usual and arrange for students to receive grades even though they hadn't had lessons in the subject. We suggest that this phenomenon is labeled "ghost lessons." The following group interview with students provides a few examples of ghost lessons for which students received grades:

We didn't get grades for physics this year; it was totally withdrawn from the timetable. Since biology and chemistry were not taught during the first chetvert we had to go through the curriculum very quickly (3-4 topics per lesson), mostly in the form of lectures. Physical training was not withdrawn from the timetable though we didn't have the lessons for about 2 months. Instead we had other subjects or had 'windows' (i.e. no lesson at all)...

Question: Did you receive grades for the first term [chetvert] of physical training.

Answer: Yes, we received marks even though it wasn't taught for 2 months.

- *Ghost teachers*

Ghost teachers are related but not identical with the previously discussed ghost lessons. "Ghost teachers" implies that the principal deliberately keeps the name of a teacher on the tariff table (tarifikazia) and time sheet (tabeel) to enable that teacher to accumulate years of teaching service (pedstazh) despite her/his absence from the school. The hope of the principal is that the (ghost) teacher returns to the school and resumes teaching. The hours of the ghost teacher are typically redistributed among the other teachers of the school and the lessons are actually taught. This is the main distinction between ghost teachers and ghost lessons. In the case of ghost lessons, the lessons are not taught and the students do not learn anything about the subject but nevertheless receive grades because the principal and the teacher pretend that the lessons actually took place. From the perspective of educational quality, ghost lessons are a problem but not ghost teachers. From an economic perspective (waste of salaries and social fund), ghost teachers are a problem. The focus of this study was on ghost lessons and not on ghost teachers.

Only one teacher out of four has the required qualification for subject that she is teaching (math)

From 11 teachers on the pictures, only the following four are "real teachers":

- Two math teachers who teach math
- Two Kyrgyz language teachers who teach Kyrgyz language and literature

All other teachers are either correspondence students or teach, in addition or instead of their own subject another subject (some of them have a certificate in the additional subject).

The only two young teachers are correspondence teachers (2nd and 4th grade correspondence studies) who are from the village and who are pregnant, that is, will be on maternity leave soon.

4. REAL TEACHER SHORTAGES: A SUMMARY

In this study we draw attention to teacher quality in the schools of Kyrgyzstan. We argue that teacher shortages should be analyzed more thoroughly and also include an investigation of the qualifications of those currently employed in schools. Such an investigation would reveal the large extent of substitute teachers. Naturally, in the context of teacher shortages, schools are forced to be very flexible with regard to recruiting and employing teachers. Nowadays, schools in the Kyrgyz Republic hire professionals, correspondence students, retired teachers, and teachers from other schools to fill their vacancies. They also depend on the willingness of their own teachers to take on additional teaching hours; very often for subjects for which they have not been trained.

As a result, qualified teachers take on two and more teaching loads (*stavkas*), sometimes exceeding the permissible workload of the labour law. Even though the teaching force in Kyrgyzstan consists of a relatively high proportion of teachers with a higher education specialist diploma (78.2 percent), they very often end up teaching subjects for which they have not been trained. In towns and larger villages, excessive teaching loads of 32 and more hours are common. They increase the chances of teachers being ill-prepared, late for class, absent for long periods of time, or not showing up at all.

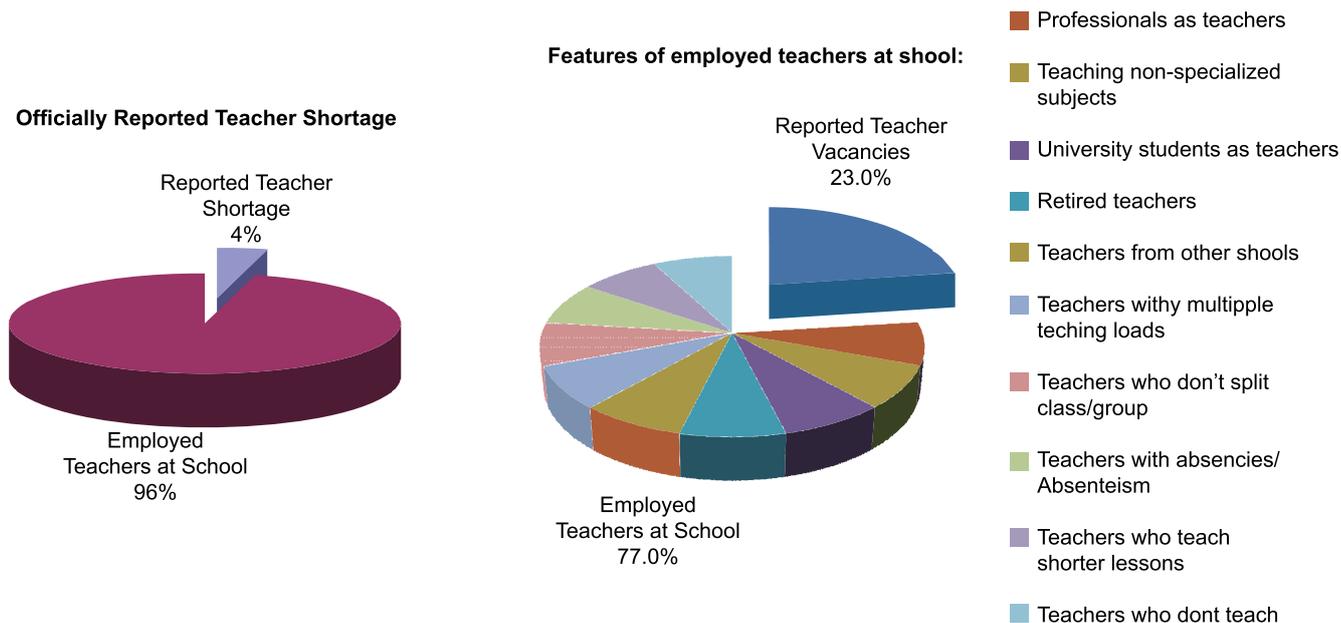
Furthermore, even though 78.2 percent of all teachers in the Kyrgyz Republic have a higher education specialist diploma, many of them obtained the diploma as correspondence students.. One of the findings of this study was that correspondence students get diplomas even though they are rarely able to take the courses and receive no mentorship whatsoever from their university for their teaching. In practice, many correspondence students are full-time teachers and undergo informal on-the job mentoring or training by regular teachers in schools. Thus, the teaching quality of current and former correspondence students is seriously impaired. Based on our study, we estimate that one-third of the current teaching workforce with a higher education specialist diploma consists of former correspondence students who got their diplomas despite little or no teaching training.

FIGURE 2 illustrates the two definitions of the term “the crisis of the pedagogical cadre.” The term is frequently used in Kyrgyzstan, but the two definitions of the term encapsulate entirely different aspects of teacher supply. *The left side* depicts a definition that exclusively focuses on the officially reported teacher shortage of 4.2 percent. Its only preoccupation is how to fill the vacancies so that subjects or lessons do not have to be cancelled and students across the country receive the same curricula. For them, the crisis is confined to the officially reported teacher shortages. The second definition, depicted on *the right side*, is much more comprehensive. First, it acknowledges that the officially reported teacher shortages should be 5-6 times higher (23 percent) because the number of employed teachers is not as high as reported at the district and central level. Second, it dissects the current teaching workforce in schools and finds that many individuals are considered teachers in Kyrgyzstan that in other educational systems are merely regarded as temporary substitute teachers and therefore count as indicators of teacher shortages.

A note of caution is in order here: as mentioned before, this study is an exploratory study into real teacher shortages and does not attempt to provide exact statistical figures. Many currently employed teachers meet several criteria. For example, a teacher may be retired, teach multiple teaching loads and also teach subjects for which she/he hasn't been trained thereby meeting three of the criteria of real teacher shortages. Again, FIGURE 2 should not be interpreted in statistical terms. The main point is that the more comprehensive definition (used on the right side) does not consider the teaching workforce as a homogeneous group but instead, sheds light on the teaching workforce and shows that its current composition is a big part of the crisis of the pedagogical cadre. The reason why there are so many substitute teachers is because the real teacher shortages are much higher than officially reported.

FIGURE 2 The Crisis of the Pedagogical Cadre: Two Definitions

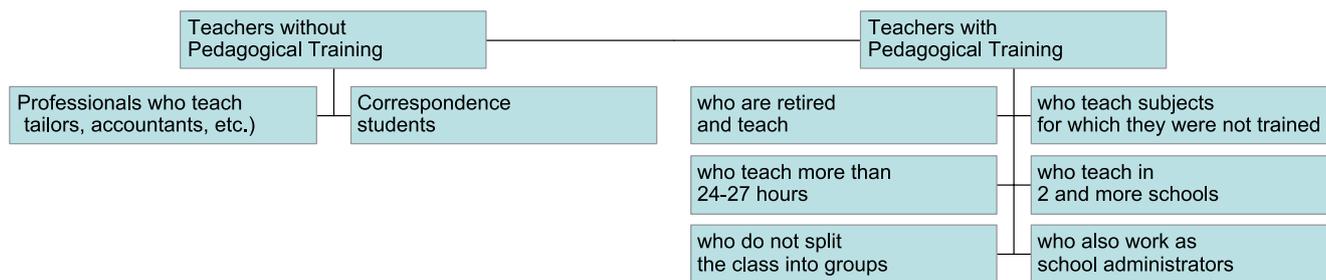
The official definition (left side) and the definition used in this study (right side)



Another way of illustrating the definition that has been used in this study is to view the various employment practices as survival strategies that ensure that schools can function despite severe teacher shortages. Schools reach out to retired teachers, assign multiple teaching loads to qualified teachers, ask teachers to teach subjects about which they know very little, encourage correspondence students to work full-time rather than to study, turn a blind eye to teachers that are periodically absent, etc. *because* there are teacher shortages.

FIGURE 3 makes the same point as in FIGURES 1 and 2 but breaks down the teaching workforce by teachers' qualifications. As a first step, we broke down the group of "qualified teachers" (those with a higher education diploma) and then all teachers, that is, those with and without the required teacher qualifications.

FIGURE 3 The Impact of Teacher Shortages on Teacher Quality



The breakdown of teachers by formal qualifications and hiring practices, as presented in FIGURE 3, is important for the following reasons: If we were to exclusively rely on the qualifications profile and use the educational background of teachers as the only indicator for the quality of teachers, the Kyrgyz educational system would come across as one with an impressively high quality of teachers: 78 percent of all teachers have a university diploma. However, once we break down - as a first step - the group of teachers with a higher education specialist diploma, we discover at least three groups of teachers who are currently subsumed under this category. In the process of breaking down this big group of "teachers with a higher education diploma" three hidden features come to light: First, quite a few of them, currently listed as "teachers with a higher education diploma," have a diploma outside the field of education and thus work as professionals in schools (economists with a higher education diploma, IT/computer specialists with a higher education diploma, etc.). Second, one-fifth of them (19 percent)

teach additional subjects for which they have had no teacher training. Finally, one-third to one-half of them were former correspondence students, that is, obtained their higher education specialist diploma with minimal training. Thus, the term “teachers with a higher education diploma” erroneously provokes the association that teachers in this category (78 percent of the teaching workforce) are all qualified to teach the subjects to which they have been assigned.

As a second step, we suggest that the working conditions of all the individuals employed as teachers be examined, that is, both those that, in official terms, are considered “qualified” and those considered “unqualified.” Such an investigation would reveal that several hiring practices and working conditions of teachers - chosen by schools as strategies to cope with teacher shortages - have a negative impact on the quality of education in the schools of Kyrgyzstan.

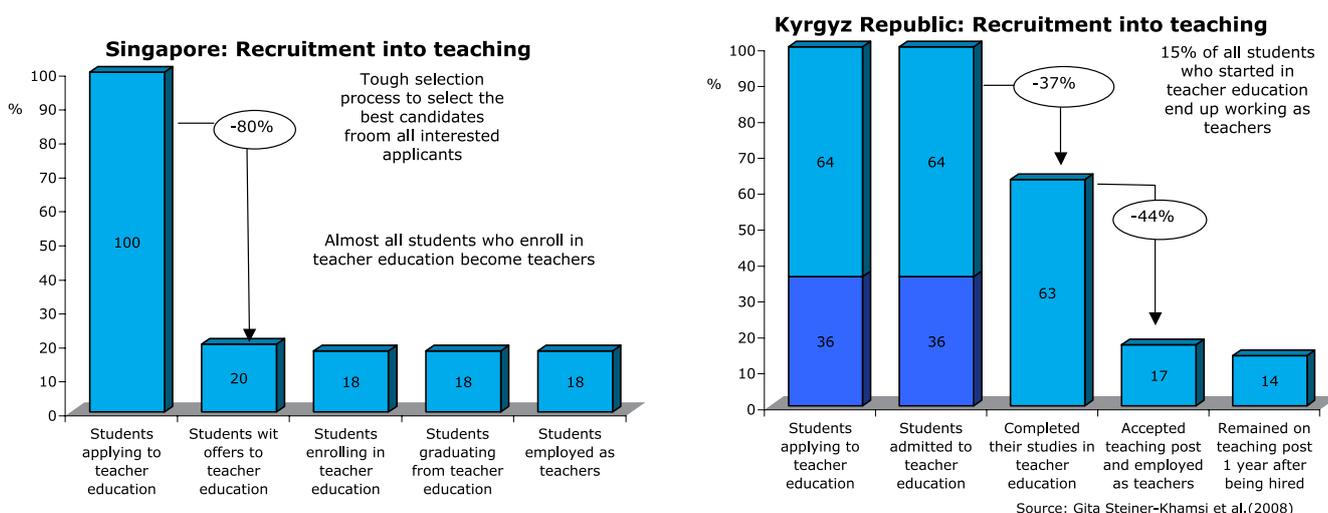
5. THE LOW AND FRAGMENTED SALARIES OF TEACHERS

The crisis of the pedagogical cadre has evolved over the past two decades as a result of several developments that have made the teaching profession increasingly unattractive. The cost of living has soared, the private sector has started to pay much higher salaries than those in the public sector, the social benefits for civil servants have been drastically reduced or even abolished and the nominal value for all kinds of salary supplements (e.g., for specific skills or for remote and rural locations) have shrunk to a level that makes them look symbolic. These are just a few of the reasons that have made the teaching profession totally unattractive, creating problems with teacher supply. As mentioned in the introductory chapter, teacher shortages in Kyrgyzstan are not because there is a lack of trained teachers but rather because the trained teachers are not motivated to work in schools.

5.1. Recruitment into Teaching

Thus, teacher shortages in Kyrgyzstan are not a supply problem but a motivational issue that is related to the low salaries or the high opportunity cost, respectively, associated with the teaching profession. There is in fact an over-supply of teachers in Kyrgyzstan; many more individuals complete a teacher education degree than the educational systems could possibly absorb if the graduates were to become teachers. In international terms, the problem in Kyrgyzstan is a motivational issue or one of “recruitment into teaching.” FIGURE 4 contrasts the recruitment of students for pre-service teacher training and their transition into the teaching workforce in Singapore and in the Kyrgyz Republic¹².

FIGURE 4 Recruitment into Teaching: Comparison between Singapore and the Kyrgyz Republic



Singapore scored top both in science and math in TIMSS 2003, and the Kyrgyz Republic scored at the very bottom (ranked 57 out of 57 countries) in PISA 2008. As FIGURE 4 shows, the teacher training institutions are extremely selective in Singapore. The universities only accept 20 percent of those that apply for teacher training programmes. Almost all those who start a teacher training programme actually complete it and then starts teaching. In fact, 9 out of 10 interested in teacher training (18 percent of those who applied for teacher training) end up working as teachers.

The situation is entirely different in the Kyrgyz Republic: the chart illustrates the high attrition rate during teacher training and the huge waste of government resources given that 36 percent of all teacher training students in higher education receive government scholarships (i.e., are “budget” students) but only a few of them end up working as teachers. During the 5-year teacher training diploma programme, 37 percent of those enrolled either abandon their university studies or switch to another degree pro-

¹² The figure for Singapore is an excerpt from Barber and Mourshed (2007, exhibition 10) and the figure for the Kyrgyz Republic is based on Gita Steiner-Khamsi, Chinara Kumenova and Nurlan Taliev (2008). Teacher Attraction and Retention Strategy. Background paper for the Education Development Strategy of the Kyrgyz Republic 2011-2020. Bishkek: Ministry of Education and Science, Department of Strategic and Analytic Work.

gramme. In total, only 63 percent of those who start teacher training actually complete their studies and obtain a higher education diploma with a teaching specialization. Of those that complete their studies with a training specialization, only 17 percent go into teaching. To make things worse, approximately one-sixth of those who go into teaching in Kyrgyzstan quit the job within the first two years of their employment: only 14 percent are still teaching two years after starting teaching.

Naturally, the contexts vary significantly. The teaching profession is an attractive job in Singapore and - for a variety of reasons (low and fragmented teacher salaries, difficult working environment, few social benefits, etc.) - an unattractive one in the Kyrgyz Republic.

5.2. Teachers' Salaries

It is an undisputed fact that low teachers' salaries are the main reason for teacher shortages. The teachers interviewed in the study (N = 43) listed 5 factors that would help reduce teacher shortages:

- Increase the salaries (98% of all responses)
- Improve the social benefits, e.g., social fund, plot of land, teachers' accommodation, discounts for utilities (electricity, gas, water) and other benefits (subsidised holidays/health resorts, etc.) (96%)
- Improve working conditions, that is, infrastructure, availability of books, heating, electricity and the schools (66%)
- Provide professional development for teachers (41%)
- In general, give more rights to teachers and raise their status (36%)

The responses from principals and government officials interviewed in the schools and the various districts are similar to what teachers suggested in terms of measures that would resolve the teacher shortage problem. An analysis of the salary structure is necessary to understand why exactly teachers' salaries - apart from the low nominal value of the salaries—are so unattractive.

5.2.1. Legal Basis and Regulations

The following two Presidential Decrees are relevant for understanding the salary structure of teachers in Kyrgyzstan:

- Decree # 225 of December 28th 2006, that specifies and revises article 32 on the “Social Protection of Staff in the System of Education” of the Education Law, An English translation of Decree #225 is listed in APPENDIX 1.

This decree prescribes, for example, that teachers with 5 years teaching experience (ped stazh) should receive not less than 10 percent of the salary rate, teachers with 10 years of teaching experience 20 percent, and teachers with 15 and more teaching experience 30 percent of the salary rate. Compared to other educational systems the salary scale of teachers in Kyrgyzstan is short: it only takes approximately 15 years to move from the starting to the final salary.

It also establishes the normative teaching workload for teachers. Varying from regional and international standards, the teaching load is lower in primary school than in lower and upper secondary schools. Usually, the inverse applies: the teaching load of teachers decreases by year level. In the Kyrgyz Republic, the normative teaching load is 16 hours for years 1 - 4 and 18 hours for years 5 - 11.

The decree also lists the supplements (nadbavkas) that the school should pay for marking students' workbooks, managing classrooms (referred to as cabinet), and other unspecified teaching activities. It also lists two social benefits that, according to our empirical study, do not exist in reality: (a) “bonuses or other types of incentives” and (b) the “right to land, immovable property and other types of property on equal terms with peasants and farmers.”

Finally, the decree also prescribes that “young professionals coming to work in rural schools, are given, from the local budget, a lump sum of ten salary rates for household purposes.” Apart from

the Young Specialist Deposit Scheme (funded by the development banks), there exist no noticeable incentives for graduate teachers to go into teaching. The young teachers that we interviewed only received a monthly salary supplement of 200 KGS per month; a very low bonus in comparison with teachers that have 5 or more years teaching experience who receive salaries that are multiplied by a rate of 10, 20, or 30 percent.

- Decree #561 of January 1st 2007 includes two tables that list the nominal value of one normative teaching load (16/18 hours) for each of the 9 salary levels (razriat 4 to 12). The two tables are listed in APPENDIX 2.

The educational background of a teacher determines, along with years of teaching experience and to a smaller extent actual performance, the level on the salary scale. Only teachers with a Higher Education Specialist Diploma are entitled to the three highest salary levels/razriat 10, 11, and 12. In contrast, teachers with a technical-vocational educational background, incomplete higher education background or a general secondary school degree can only be promoted from razriat 4 (lowest salary level) to razriat 9. The rate for 1 normative teaching load of 16/18 hours per week is determined by the salary level. The rate for 1 normative teaching load/stavka on salary level 1 is currently 916 KGS per month; the rate on the highest level (salary step 12) is 1,966 KGS. The compression rate between the lowest and highest salary (for 1 normative teaching load/stavka) is 2.1, that is, the most educated and oldest teacher should earn slightly more than double than the least educated and youngest teacher in a school. In practice, however, older and experienced teachers earn 3 or 4 times more than young teachers. This salary difference explains to a great extent the difficulty in attracting and hiring young teachers. The following summaries from tariff tables, gathered from ten different schools, will help explain why the teaching profession is so unattractive for all teachers, but particularly unattractive for young ones.

5.2.2. Highest and Lowest Teacher Salaries

In each of the ten schools, we asked teachers to provide details of their salaries. In the same schools, we asked principals and deputy principals to give us detailed information on the two highest and lowest salaries in their schools. The tarifkazia (tariff table) lists all the required information. In almost all cases we double-checked the information with the village or municipal government offices. This means that the salary data has been collated from 2-3 different sources and is quite reliable. The data includes, quite detailed information on the characteristics of the employed teachers: teacher qualifications, salary category, years of pedagogical experience (ped stazh), number of teaching hours, subjects taught as well as salary supplements (nadbavkas) received.

TABLE 12 Highest Paid Salaries in Ten Schools

	School	BK1	BK2	BK3	BK4	BK5	JA1	JA2	JA3	JA4	JA5
Teacher Characteristics	Gender	M	F	M	M	M	F	F	F	F	F
	Years of Teaching (ped stazh)	18	18	20	14	34	23	28	25	21	26
	Level of Education	HE									
	Subjects Taught	HIST	RUS	RUS	P/RU	RUS	B/CH	KYR	MAT	P	P/ KYR
	Teaching Hours per Week	44	35	38	35	32	37	36	50	45	30
	Rate per Teaching Load/Stavka	1,966	1,966	1,966	1,966	1,966	1,966	1,966	1,966	1,966	1,966
	Adjusted Rate per Stavka (special skills supplement)	1,966	2,261	2,261	1,966	2,261	1,966	1,966	1,966	1,966	1,966

Composition of Salary	Salary for Teaching Hours	4,806	5,598	4,773	4,154	4,019	4,041	3,932	5,461	5,529	3,549
	Suppl. Ped Stazh 10%/20%,30%	961	393	954	1,025	1,205	1,364	1,389	1,638	1,106	1,065
	Suppl. Class Teacher				587	476	393		786	733	294
	Suppl. Marking work-books		25		270			30	67	22	23
	Suppl. High-Mountain Location					580					
	Suppl. Rural Area		15		15	15	15	15			15
	Suppl. Young Teacher										
	Suppl Classroom management						10			10	
	Suppl. Hazardous Work (IT, Chem.)										
	Teaching 10th & 11th grades						87	65			
	Suppl. Circle/Extra-Curricular Act								654		
	Suppl. Special Subjects (RU, ENG, KYR in UZBEK schools)		incl	incl		incl		589			
	Suppl. from district/municipality		503								
Total Monthly Salary (KGS)	5,767	7,269	5,728	6,051	6,295	5,910	6,020	8,606	7,399	4,946	

Legend:

Level of Education: HE = Higher Education; Subjects Taught: HIST=history, RUS=Russian, P=Primary School, B/CH=biology/chemistry, KYR=Kyrgyz language and literature, MAT=math.

TABLE 12 shows the breakdown of the 10 highest paid salaries in the ten sample schools of Batken and Jalal-Abat provinces. The highest paid teacher is from school JA #3. He teaches 50 hours of math, has 25 years of teaching experience and earns 8,606 KGS per week. The typical features of the highest paid teachers - as shown in the average figures from TABLE 12 - are summarized in the following.

BOX 6. Characteristics of the Highest Paid Teachers

The highest paid teachers typically

- have 14-34 years teaching experience (average: 22.7 years)
- have higher education specialist diplomas (abbreviated to HE), category 1, salary level 12 (raz-riat)
- teach more than 2 teaching loads/stavkas, i.e., teaches 30-50 hours/week (average: 38.2 hours)
- earn an average 6,399 KGS per month

Like the highest paid salaries, the next TABLE 13 provides an overview of the lowest paid teachers in the ten sample schools of this study.

TABLE 13 Lowest Paid Salaries in Ten Schools

	School	BK1	BK2	BK3	BK4	BK5	JA1	JA2	JA3	JA4	JA5
Teacher Characteristics	Gender	M	M	F	F	F	F	F	F	F	F
	Years of Teaching (ped st.)	13	4	0	19	0	0	6	21	7	0
	Level of Education	HE	HE	IHE	TVE	IHE	IHE	HE	HE	TVE	IHE
	Subjects Taught	IT	M/IT	ETH	ART	BIO	P/RU	P/KY	CH	P	KYR
	Teaching Hours per Week	6	9	10	15	18	20	20	8	17	7
	Rate per Teaching Load/Stavka	1,154	1,309	1,049	1,310	1,049	916	1,176	1,966	1,154	916
	Adjusted Rate for 1 Stavka (special skills supplement)	1,154	1,309	1,049	1,310	1,049	916	1,176	1,966	1,154	916
Composition of Salary	Salary for Teaching Hours	712	1,168	643	1,092	1,049	1,156	1,470	873	1,226	356
	Suppl. Ped Stazh 10%,20%,30%	79			332	0	0	169	174	0	0
	Suppl. Class Teacher					209	137	176		157	
	Suppl. Marking work-books						10	10		10	9
	Suppl. High-Mountain Location					147					
	Suppl. Rural Area			15		15	15	15			
	Suppl. Young Teacher					200					
	Suppl Classroom management										
	Suppl. Hazardous Work (IT/Chem.)	incl	incl								
	Teaching 10th & 11th grades										
	Suppl. Circle/Extra-Curricular Act						200				
	Suppl. Special Subjects (RU, ENG, KYR in UZB/ RU schools)						25	22			
	Suppl. from district/municipality										
Total Monthly Salary (KGS)	791	1,168	658	1,424	1,620	1,543	1,862	1,047	1,393	364	

Legend:

Level of Education: HE=Higher Education, IHE=Incomplete Higher Education (includes correspondence students), TVE=technical vocational education (includes ped uchilische); Subjects Taught: IT=information technology, M=math, ETH=ethics, ART=art, BIO=biology, P=Primary School, RU=Russian, KY=Kyrgyz language and literature, CH=chemistry.

The lowest paid teacher is from school JA #5. She joined the school two months ago as a 4th year correspondence student. She is born in 1983 and does not have any prior teaching experience. She

teaches 7 hours of Kyrgyz language and literature to grades 5-9 and earns 364 KGS/month. As before, we are able to provide a summary of the typical features of the lowest paid teachers based on the average values in TABLE 13. However, unlike the highest paid teachers, there is no uniform prototype for the lowest paid teachers: they earn little either because they are young or because they choose to teach only a few hours.

BOX 7. Characteristics of the Lowest Paid Teachers

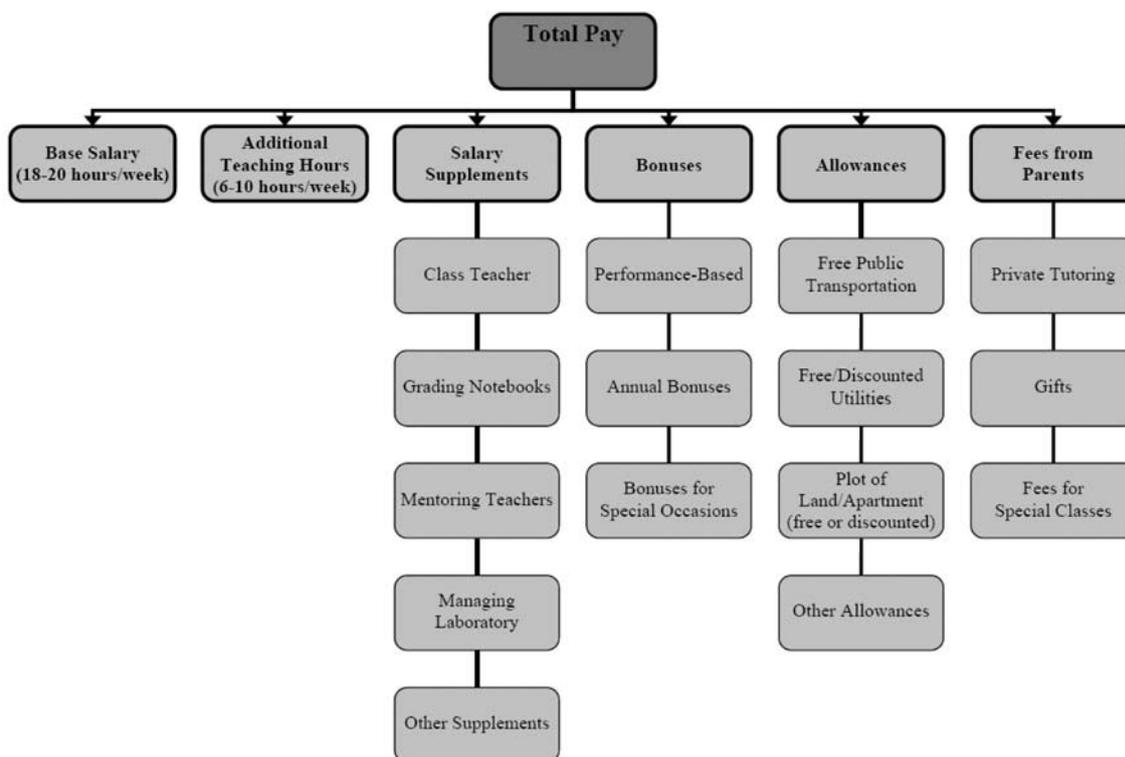
The lowest paid teachers are typically

- either correspondence students with Incomplete Higher Education (IHE), young teachers with Higher Education Specialist Diplomas (HE) or Technical-Vocational Diplomas (TVE; ped uchil-ishe), or part-time teachers with very few teaching hours per week (less than 1 stavka/teaching load)
- are female
- earn an average of 991 KGS per month.

5.2.3. Breakdown of Teachers' Salaries

It is important to bear in mind that they salary structure in Kyrgyzstan is a legacy from the Soviet past and is, in principle, identical with the one in other educational systems of the region. The following is an illustration of the fragmented teacher salary structure that exists throughout the Central Asia region, Eastern Europe and Mongolia.

FIGURE 5 The Post-Soviet Teacher Salary System



Source: Steiner-Khamsi (2007; World Bank study on the Stavka System in Tajikistan)

In practice, however, we found that the contemporary teacher salary in Kyrgyzstan differs from the typical post-Soviet salary, shown in FIGURE 5, as follows:

- The normative teaching load for the basic salary is not 18-20 hours, but 16-18 hours/week.
- Salary supplements exist but they are irrelevant in terms of nominal value
- Bonuses have been abolished (with the exception of prizes for olympiads) and donor-funded pilot projects have been introduced to test the introduction of incentive schemes

- Allowances or social benefits exist on paper, but local governments are, with the exception of better off municipalities, not in a position to provide plots of land, apartments, etc.

The breakdown of teachers' salaries reveals that three factors have a great impact on them:

- Teaching hours: calculated as a multiple of a normative teaching load of 16/18 hours/week
- Educational background of the teacher: higher education specialist diploma or not
- Teaching experience (ped stazh) which, in effect, is a proxy for age or seniority.

All the other supplements (nadbavka) contribute to the fragmentation and non-transparency of teachers' salaries but, in effect, contribute very little in financial terms. Of all the supplements, the skill supplement (foreign language teachers, IT/computer teachers) and the class teacher supplement (15% of the rate for 1 stavka), are relatively the best paid supplements but still low in terms of nominal value.

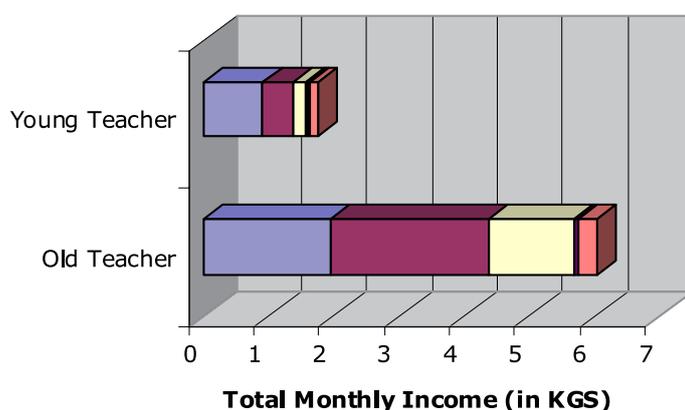
5.2.4. The Low Starting Salaries of (Young) Teachers

As mentioned repeatedly throughout this report, low salaries and in particular the low starting salaries for (young) teachers is a well known cause for public concern. The system relies on a series of survival strategies; many of which have a negative impact on the quality of education such as, hiring teachers that teach subjects for which they have not been trained, hiring correspondence students, assigning excessive teaching loads to teachers, etc.

The salaries of young specialists (typically female) are low for three reasons: First, the basic salary rate is much lower because they start at salary level 4 whereas the older teachers with a Higher Education Specialist Diploma are, after just a few years, in the highest category and on level 12 of the salary scale. Second, the young teachers' basic salaries and teaching hours are not multiplied by 10, 20 or 30 percent for teaching experience (ped stazh) but instead they only receive 200 KGS in the form of a supplement for the first 3 years. Last but not least and yet less known: younger teachers are typically assigned fewer teaching hours, because they lack the experience and, from the perspective of the principals, the competence to teach more hours.

In the figure below, we compare the average typical salary for a young teacher with 1 year of teaching experience with the typical salary for an older teacher with 20 years of teaching experience; both with the same educational background (Higher Education Specialist Diploma). The computed figures, presented in FIGURE 6, apply to teachers' salaries in rural and semi-urban areas where the village government or the municipality lacks funds to boost the salaries of public employees by means of additional allowances or bonuses. The figures represent averages for teachers in the two provinces of Batken and Jalal-Abat, but are likely to apply to all teachers in rural and semi-urban areas of the Kyrgyz Republic.

FIGURE 6 Young and Old Teachers: A Comparison of Salaries



	Old Teacher	Young Teacher
■ Class Teacher (15%)	295	137
■ Marking Workbooks	50	50
■ Rural Area Supplement	15	15
■ Teaching Experience	1,311	200
■ Additional Hours	2,403	458
■ Basic Salary (1 Stavka)	1,966	916

According to our data and projections, the total pay for the young teacher is on average only 1,776 KGS. In comparison, the total monthly salary of the older teacher is on average 3.4 times more: 6,040 KGS per month. The salary projections are for full-time teachers. In the computations for FIGURE 6, we therefore added 9 additional hours for the young teachers, but 22 additional hours for the older teacher. All other elements of the salary structure are determined by a regulation that weighs teaching experience/ped stazh too heavily.

5.3. The Three Types of Teachers

Novel in this study is also the emphasis on motivational aspects of the teaching profession. Rather than only asking why the teaching profession has become so utterly unattractive, we also attempt to understand why the teaching profession is more attractive to some than for others. As a prerequisite to specifying policy-relevant recommendations, we analyzed the motivation of current teachers for accepting a teaching job and for staying in the teaching profession.

The 42 teachers that were interviewed individually provided the following reasons for staying in the teaching profession:

- My family lives in this area (100%)
- No other professional options in this area (71%)
- Pension fund (44%)
- Good administration, good colleagues (17%)

As we will show below, it is very often a combination of the first two reasons that makes teachers stay in the teaching profession: they are from the village/town (or, in the case of women are married to men from the village/town) and do not have other professional options.

We constructed a typology of teachers in Kyrgyzstan based on the teachers' sources of income:

- (A) Teachers that work exclusively as teachers and rely on their teachers' salaries (teach more than 1.5 stavkas)
- (B) Teachers that consider teaching merely as a part-time job and therefore have another main source of income (teach 1-1.5 stavkas)
- (C) Teachers that have another job, but teach for a few hours as a safety net measure (teach less than 1 stavka)

Of the three types that emerged in our analyses, only teachers with more than 1.5 normative teaching loads/stavkas are able to entirely rely on their teaching job as the main source of income. From an international comparative perspective only this group of teachers (group A) with 24 – 50 hours of teaching per week is considered full-time teachers. All other teachers (groups B and C) with less than 24 teaching hours per week are considered part-time teachers, because they have other, often more important sources of income as farmers, traders, or other types of profession.

Groups B and C make up the majority of teachers who are unable to live on just a teacher's salary. The two groups are the following: (B) teachers with a teaching load of 1 stavka (16/18 hours/week) that have another main source of income or rely on somebody else's salary to cover household costs and (C) teachers with less than 1 stavka that merely use their teacher's salary as a safety net that guarantees a pension/social fund and therefore is useful as a back-up plan in case other economic activities do not turn out as expected. An analysis of teacher identity in Kyrgyzstan requires an in-depth analysis of the various income sources of teachers.

Gender differences are not to be underestimated. Judging from the teachers that we interviewed for this explorative study, the majority of those that use teaching as a safety net (group C) are male. In contrast, many female teachers with young children are in group B, and finally, older teachers approaching retirement age (both male and female) are strongly represented in group A.

A few examples from interviews with teachers might be helpful in understanding how teachers deal with the financial hardship associated with the teaching profession:

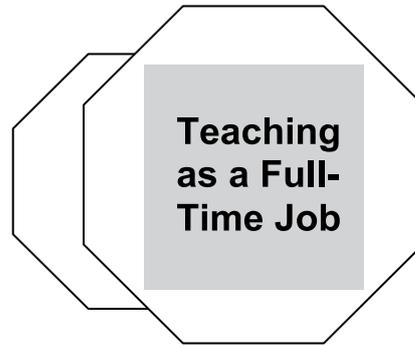
BOX 8. The Financial Hardship of Teachers

Excerpts from interviews with teachers in Batken and Jalal-Abat provinces:

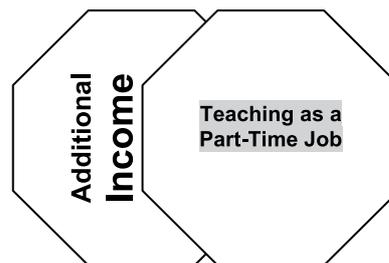
- I teach 2 classes [approximately equivalent to 2 teaching loads/stavkas] in primary school and earn only 3,500 KGS. One bag of poor quality flour costs 600-700 KGS. If I wanted to buy better, high quality flour then I would need to pay 1,000 KGS. My salary is not even enough to purchase food each month even though I work double hours.
- Because teachers' salaries are inadequate, most teachers need to take on another job to generate additional income. This leads to an overload of tasks and leaves little time and energy to prepare for classes. For example, I earn more from selling walnuts to merchants than from working full-time at school. I rented a plot of land with walnut trees from the local government. Even though I work full-time as a teacher, the few hours that I spend in the walnut tree forest are indispensable in covering my living costs.
- I have devoted about 35 years of my life to the school and I feel that I deserve to be treated better. I have to take on additional jobs to support my family. I set up a small komok (container-based shop) near the school where I sell stationery. I earn much more from that than from teaching. But I can't quit my teaching post. I love my job and I would feel guilty about my students if I deserted them and quit the school.

FIGURE 7 The Three Types of Teachers

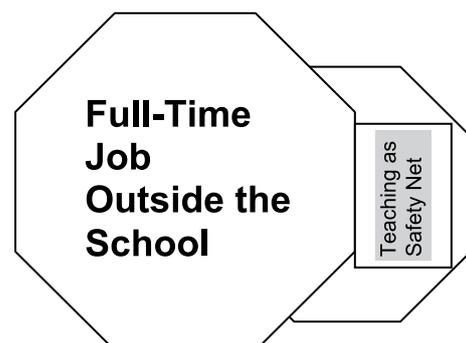
Teachers who teach more than 1.5 normative teaching loads (more than 24 hours/week) →
Professional Identity as a Teacher



Teachers who teach 1 or 1.5 normative teaching loads (16-24 hours)
Professional Identity as a Part-Time Teacher and Part-Time Farmer, Merchant, Construction Worker, etc.



Teachers who teach less than 1 normative teaching load (> 16 hours)
Professional Identity as a Full-Time Farmer, Merchant, Construction Worker, etc



The teachers that we interviewed in the ten schools work on average 1.5 stavkas (16-24 hours) and either draw on additional income from working as farmers, merchants, or other professionals, or rely on the income from another family member. They should be considered part-time teachers despite the fact that they work a full normative teaching load or even 1.5 teaching loads/stavkas. In other words, the typical teacher in Kyrgyzstan is a part-time teacher who is not able to live on their teacher's salary alone. The only full-time teachers that live on their teachers' salaries alone are the ones that work more than 1.5 teaching loads; often 35 and more hours of teaching per week. The fact that teachers either teach too much or have two jobs simultaneously has without doubt, a negative impact on the quality of teaching and on students' results.

6. RECOMMENDATIONS

This report ends with a series of recommendations. Naturally, some of the recommended actions are long-term and require more preparation than others to implement.

6.1. Attention to Teacher Quality

The measure of teacher availability or non-availability (teacher shortages), respectively, should include indicators that address the quality of the employed teacher. An unqualified teacher should count as a vacancy. It is recommended that a second measure for teacher vacancies (T_{vac}) is used that takes into account teacher quality and therefore measures real teacher shortages. This information should be gathered in October/November of each year using the following formula:

$$T_{vac} = \sum CANC + PROF + NSP + UNIS + RET + OTHS + MUL + UND$$

The quality-based teacher shortage measure includes the following eight variables:

- CANC Number of teachers that would be needed in order not to cancel subjects or lessons
- PROF Number of teachers without teacher training who work as teachers
- NSP Number of teachers who teach subjects for which they have not been trained
- UNIS Number of correspondence students and other university students working as teachers
- RET Number of retired teachers in a school
- OTHS Number of teachers from other schools working in a school
- MUL Number of teachers with multiple stavkas (more than 1.5 or 2 stavkas)
- UND Number of foreign language classes that couldn't be divided into groups because of teacher shortages

T_{vac} provides an exact measure of teacher shortages regarding quality of education. It will help policy makers have baseline data on teacher quality in schools and will enable them to establish targets and benchmarks to improve teacher quality in the Kyrgyz Republic.

6.2. Reform of Teachers' Salaries

The current structure of teachers' salaries is unnecessarily fragmented and the nominal values and the various supplements are too low. Teachers' salaries consist of a basic salary, additional teaching hours, a series of supplements with insignificant nominal values, and social benefits/allowances (see FIGURE 5). Young teachers rarely receive social benefits/allowances (plot of land, apartment or discounts on utilities) because the local governments do not possess the resources to provide these benefits to new teachers. Three major reforms should be considered to significantly improve teachers' salaries. Teachers must be paid significantly more. In particular, the starting salaries for young teachers must be raised significantly in order to attract university graduates with a teaching specialization into the teaching profession.

- Integration of Supplements:

The supplements should be included in the basic salary as they reflect teaching activities such as, for example, marking students' workbooks, acting as a class teacher, managing a classroom, etc.

- Integration of Social Benefits/Allowances:

The decentralized approach to having allowances (plot of land, apartment, discount on utilities) provided by the local government only works in municipalities and in villages with sizeable tax revenues. A mechanism should be piloted and put in place that acknowledges the non-availability of these social benefits or allowances and therefore lifts teachers' salaries substantially to cover their

living expenses. The current salary level erroneously assumes that these additional benefits that would boost income actually exist.

- Move from a Weekly Teaching Load to a Weekly Workload System:

Currently, the majority of teachers has a weekly teaching load of 24-27 hours (1.5 stavkas) even though the normative teaching load would be 16 or 18 hours, respectively. In line with international standards, the teaching load system (stavka system) should be replaced with a weekly workload system. Teachers should be contracted and paid for 40 hours/week. Depending on their subject, skills, year level and function, they should teach 22-26 hours per week, and use the remaining time for preparing lessons, evaluating student's work, meeting with parents, doing administrative work, conducting after-school activities, mentoring or working with other teachers. Schools should not be permitted to hire teachers for less than 50% employment (less than 11-13 hours of teaching) or more than 100% employment (more than 22-26 hours of teaching). Exceptions should only be made for subjects with extremely low teaching hours (e.g., music, IT).

6.3. Teacher Education Reform

The number of teachers who teach subjects for which they haven't been trained (e.g., chemistry teachers who are asked to also teach geography, music teachers required to also teach physical education, etc.) is substantial. The number of teachers who have little or no teacher training at all is also large. This applies, in particular, to former and current correspondence students who work as full-time teachers. These two groups of teachers are the most important target groups for improving the quality of education in schools of the Kyrgyz Republic. In addition to the reform programme initiated by the Ministry of Education and Science and supported by the Quality Learning Project (USAID), there is a need to draw greater attention to the following two groups of teachers:

- Multi-subject teachers: teachers for primary and lower secondary schools (grades 1-9) should not be trained as mono-subject specialists (math or biology or physics, etc.) but as multi-subject specialists (chemistry/biology, math/physics/astronomy, etc.). In the past, multi-subject specialization existed for a few subjects. The introduction of multi-subject specialization in teacher training institutions requires that the curriculum in secondary schools is also designed and carried out in terms of subject areas rather than by individual subjects only. In addition, there should be training programmes for those teachers that currently teach subjects for which they haven't been trained. These training programmes should lead to the certification of these teachers and entitle them to teach 2 or 3 subjects.
- One-third to half of all teachers in rural schools are either former or current correspondence students working as teachers. This group deserves much greater attention. As with the group of multi-subject teachers, the lack of training or the low quality of their professional training, respectively, accounts for the low student performance in the schools of Kyrgyzstan.

Finally, we noticed a mismatch between subjects offered in teacher education programmes and subjects required in the school curricula. Some school subjects (including subjects taught in non-Kyrgyz language schools) are not covered in pre-service teacher training.

The three sets of recommendations, presented above, will not only help gradually resolve teacher shortages over the long-term, but also significantly help improve teacher quality and, as a corollary, the quality of the Kyrgyz education system and student learning.

As a first step, however, it is important to come to grips with the survival strategies that schools use keep operating under conditions of severe teacher shortages. Measuring real teacher shortages rather than the number of vacancies would provide a sense of urgency for taking policy action. These three and other recommendations, put forward by other national and international researchers, should become part of a comprehensive teacher attraction and retention strategy that is, in the long run, able to lure more teacher training graduates into the profession and keep them working in schools.

APPENDIX 1

The Law of the Kyrgyz Republic About Education

Article 32

Social protection of staff in the system of education

Wages and salaries of staff of educational organizations are paid for the performance of functional duties and work under their employment contracts. Payment for the fulfillment of other types of work and duties is paid according to additional contracts depending on the scope of work, except in the cases provided by the legislation of the Kyrgyz Republic.

The levels of salaries for employees of the public educational system are determined by the single tariff, taking into account education, teaching experience, performance appraisal, performance, existence of documents on qualifications improvement, existence of academic degrees, state awards and titles. The initial rate of wages and salaries shall be no lower than the average wage in the Kyrgyz Republic.

Depending on the funds available in educational organizations for the payment of work, the organizations can set differentiated extra payments in addition to salaries for people carrying out research and training scientific-teaching staff.

Additional payment is laid down for educational specialists:

- for a PhD degree, according to the legislation of the Kyrgyz Republic;
- for 5 years teaching experience - not less than 10%, 10 years - not less than 20%, 15 or more years - not less than 30 percent of the salary rate.

The Normative teaching work load for teachers of the first level of education is 16 hours per week and for teachers of second and third levels of education - 18 hours.

Depending on the funds available for paying salaries, educational organizations can pay bonuses to employees, other types of incentives and compensation and funds for the purchase of training, methodological and scientific literature.

Education employees living in rural areas and urban settlements, have the right to land, immovable property and other types of property on equal terms with peasants and farmers.

Young professionals starting work in rural schools, are given a lump sum of ten salary rates for household purposes paid for by local budgets.

Employees of educational organizations get additional payment for marking workbooks, students' written work, for the management of classrooms and classes and other payments laid down by the Government of the Kyrgyz Republic and the central educational body of the Kyrgyz Republic.

Employees of educational organizations get an obligatory free of charge outpatient medical examination in public healthcare facilities annually.

(Revised/edited on December 28th 2006, #225)

APPENDIX 2

Normative Load of 16 hours for Grade 1-4 Teachers
Decree #561 of the President of the Kyrgyz Republic, January 1st 2007

Razriat/level	Coefficient	ETS (KGS)	Stavka Rate (KGS)	Amount per teaching hour (KGS)
4	1.73	530	916	57.31
5	1.98	530	1,049	65.59
6	2.22	530	1,176	73.54
7	2.47	530	1,309	81.82
8	2.72	530	1,441	90.10
9	2.96	530	1,568	98.05
10 (2nd cat)	3.21	530	1,701	106.33
11 (1st cat)	3.46	530	1,833	114.61
12 (highest)	3.71	530	1,966	122.89

Normative Load of 18 hours for Grade 5-11 Teachers.
Decree #561 of the President of the Kyrgyz Republic, January 1st 2007

Razriat/level	Coefficient	ETS (KGS)	Stavka Rate (KGS)	Amount per teaching hour (KGS)
4	1.73	530	916	50.94
5	1.98	530	1,049	58.30
6	2.22	530	1,176	65.37
7	2.47	530	1,309	72.73
8	2.72	530	1,441	80.09
9	2.96	530	1,568	87.16
10 (2nd cat)	3.21	530	1,701	94.52
11 (1st cat)	3.46	530	1,833	101.88
12 (highest)	3.71	530	1,966	109.24

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