Open Society Foundations Armenia   **Community Finance Officers Association**

REPORT

On the Monitoring of High School Education Financing and the Financial Efficiency

- **Analysis of the current financing of education in high schools**
- **High school financial efficiency analysis and evaluation**

Yerevan 2014

EXECUTIVE SUMMARY

Introduction

The current goal of the education system of Armenia currently is to develop schools and education quality whilst securing the effective functioning of the system and safeguarding equal access to education for citizens in line with their aspirations and abilities.[1]

During 2006-2012, Armenia implemented strategic programs for the transition to 12-year general education and the creation of a system of separately-functioning three-year-long high schools. As a result of these reforms, some of the secondary general schools of Armenia were reorganized to high schools. In parallel, certain changes were made to the "per student" financing formula for general schools, including the introduction of a special coefficient for high schools. In 2014, further changes were made in the high school financing formula, which was aimed at distinguishing the financing of teachers from that of non-teaching staff.

Objectives of the Survey

The objectives of this survey are:

- To study and to analyze the current situation, strengths, and weaknesses of the existing financing system for high schools in Armenia, to identify the existing issues, shortcomings, and deficiencies, and to develop and present conclusions and recommendations on solutions; and

- To study, analyze, and evaluate the financial efficiency of high schools implementing governmental general education programs, to identify the existing problems, factors, and trends in this area, and to develop and present conclusions and recommendations on solutions.

Methodology

This survey has used various quantitative and qualitative methods based on primary and secondary sources of data. The analysis was carried out on the basis of the review and expert assessment of the Republic of Armenia legislation, strategy, and existing programs, as well as the findings of sociological surveys.

The cost-benefit analysis method has been employed in furtherance of the objectives. Under this methodology, inputs and high school costs were analyzed in relation to the benefits derived by high school beneficiaries (students, parents, and the public), as well as the factors influencing school financing and financial efficiency in specific areas. To improve data reliability and to ensure the effectiveness of the survey, the information received from various sources was cross-analyzed and supplemented.

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[1] Republic of Armenia Law on the 2011-2015 State Program for Education Development, Appendix, para. 7.

To achieve the survey objectives, a number of activities have been implemented with a view to ensuring the success of the survey, including:

1) Study and analysis of the current situation of high school education financing in Armenia;
2) Study of high schools and selection of model high schools, and collection and review of statistical information about them;
3) Definition and assessment of the relative indicators of the situation in model high schools;
4) Development, review, and testing of tools (including questionnaires) for quantitative and qualitative sociological surveys in model high schools;
5) Field work of sociological surveys (interviews) in model high schools, and data collection and processing;
6) Review and analysis of data collected through interviews in model high schools, and formulation of the sociological quantitative and qualitative results;
7) Identification of the problems and factors related to the financial efficiency of model high schools, estimation of their impact, and development of conclusions on the costs and benefits of the school; and
8) Preparing, discussing, and presenting recommendations on improving the financial efficiency of high schools.

Key Findings of the Survey

1. The financing of high schools, similar to the financing of all general education institutions, is mostly provided by the state budget of the Republic of Armenia through the financing for programs of general education. This financing is distributed among schools, including high schools, on the basis of the joint decree of the Finance Minister and Education and Science Minister of Armenia on the coefficients for the per-student financing formula. The Ministry of Finance transfers the financing contemplated for high schools in the state budget of Armenia to high schools through the Ministry of Education and Science.
2. In view of the fact that students are the direct beneficiaries of education services and the measurement unit for the quantitative outcome of services is the number of students educated, it is reasonable, in terms of financial efficiency, to make school financing somewhat contingent upon the quantitative outcome of the institution's performance. Moreover, the per-student financing formula is substantively not in line with the goals of general education and the principles of government policy, i.e. the expected qualitative outcome of the services provided, which causes significant inefficiency in the spending of budgetary resources.
3. The specific sizes of the **Sg** and **Pg** coefficients in the general school financing formula are set each year by a joint decree of the ministers of finance and education and science, but there is no document presenting the methodology of their calculation.

4. Due to the lack of nationwide financial data on general schools, including high schools, it is impossible to perform analysis of the state financing of high schools and the use of these finances.

5. Under the survey, statistical information (**see Appendix 1**) was collected on the 18 model high schools selected for the survey: there is information on general performance, class hours, academic performance, education quality, and financial performance. This information was then used to define and evaluate five relative indicators of education system performance, three relative indicators of education quality, and five relative indicators of financing for the model schools, based on which the analysis was carried out.

6. In the 18 model high schools, there are numerous problems that were identified through the sociological survey, including the following:

Education streams and substreams. The problems in this field are related to the formation of stream classes, the class hours for stream subjects and non-stream subjects under the curriculum for stream classes, the relevance of their transfer exams and graduation exams, the teaching of additional professional subjects, optional classes, and the professional and financial capacity for the organization of extracurricular groups.

Criteria according to which basic school graduates choose high schools. The potential number of 10th-grade high school students is especially predictable in small urban communities and rural communities that have one high school. The choice of the high school by basic school graduates was mostly driven by the following criteria:

- The high school being the only one in the community (37.9 percent);
- The high school being the nearest to the student's house (26.3 percent);
- The high school providing quality education (23.9 percent);
- The stream focus of the high school matching the student's preferences and/or future profession (6.4 percent); and
- Other criteria.

Procedures by which students choose the high schools, procedures of filling the stream classes, and procedures of removal from school. Admission of students to high schools is performed exclusively on the basis of their parents' applications. All those that wish to continue their education in high school may apply and be admitted. In some high schools (for instance, in the City of Yerevan and in the Ararat and Armavir regions), during the initial years of setting up the high school, student admission exams, interviews, or preliminary tests were organized, but everyone was eventually admitted, as the results were mostly unsatisfactory. Hence, this practice is no longer used.

The opinions of the principals and the teachers about the procedure of student admission to high school are very different. The vast majority of the teachers believe that it would be desirable to develop and implement a high school admission procedure, which would check the children's knowledge through interviews or testing. On the other hand, general schools are financed by the number of students, and the aforementioned

approach would considerably reduce the income of the schools. Thus, the high school objective of ensuring high-quality stream education and its per-student financing mechanism directly contradict one another.

The majority of the high school principals believe that there is no need for any procedure of high school admission, so that all those who want are admitted, which would facilitate the implementation of the social principles of general education, including equality, fairness, inclusiveness.

Lesson plans, subject programs, and textbooks. Virtually all of the surveyed teachers and students have mentioned the need to revise the high school curriculum, subject plans, and textbooks. The key problem in this area is that there are major differences and discrepancies between the subject programs and the university admission exam question books.

Professional staffing of high schools. High schools are currently mostly staffed by the same teachers that worked before the reorganization of secondary schools to high schools. The high school teachers are regularly (normally, once every four to five years) trained. Some of them are rated. However, in some model high schools (such as school number 1 of Armavir or the Dzoragyugh Village school), the number of teaching and non-teaching positions, as well as the number of class hours have been reduced in view of the declining numbers of students in recent years, the elimination of some subjects from the curriculum, and other reasons.

Attendance and discipline. Average attendance of students in the 18 model high schools was relatively high in the 10th grade, but considerably lower in the 11th and 12th grades. It means that high school absenteeism increases from year to year. In the model high schools, average semester absenteeism of grades 10 to 12 was 4.2 percent of the total class hours.

The sociological survey found that, during the month preceding the survey, the 10th-grade students were absent for an average of 1.3 days, the 11th-graders—1.8 days, and 12th-graders—2.7 days. Thus, the average was about 1.9 days or 12 class hours, which is about 8% of the total monthly number of class hours (about 150 hours).

Some high schools employ social pedagogues, which permanently monitor the school's students with special needs. The model high schools direly need psychologists, which could play an important role in addressing or resolving various psychological problems between students or between students and their parents or teachers.

Academic performance and education quality. Academic performance is considerably lower in high school than in basic school. This deterioration is due to a number of factors. Firstly, the student knowledge evaluation criteria are objectively more rigorous in high school than in basic school. Secondly, the high school teachers are subjectively more rigorous when evaluating the knowledge of the 10th-graders, in particular, as they mostly complain about the quality of education in basis schools and aim

at showing that the knowledge acquired by the students in basic schools was not quite sufficient. Thirdly, as the students get older, they become more indifferent towards their grades. Fourthly, when the basic school graduates enter high school (grade 10), it takes them a while to become accustomed to the new environment and to understand the new and somewhat unusual demands of the new teachers, which lowers their academic performance during the first semester of the 10th grade.

In the 18 model high schools, the average academic performance of the students was the lowest in the 10th grade (about 94 percent), which means that about 6 percent of the basic school graduates admitted to high school had poor academic performance, and their knowledge from basic school absolutely did not meet the requirements and criteria of high school. The seeming (misleading) increase in academic performance of the low-performing students in the 12th grade (about 99 percent) was due to three circumstances: (i) the effectiveness of the high school teaching staff, and/or (ii) improved knowledge due to the fact that 12th-trade students usually take additional lessons from tutors; and/or (iii) the more likely reason is that Armenia has developed a dangerous "tradition" of getting the low-performing students "to finish high school at any cost."

The average academic performance of students in the 18 model high schools was 95.4 percent, which means that the knowledge of about 4.6 percent of the high school students absolutely did not meet the requirements of high school and the organization of their education in high school was inappropriate and ineffective.

The average quality of education in 18 model high schools was between 39 and 41 percent for the 10th-graders, 40 and 43 percent for the 11th-graders, and about 56 percent for the 12th-graders. The average quality of education for high school was about 46 percent. It means that the knowledge acquired by over half of the basic school graduates was not sufficient for being a "good" or "excellent" student in high school. The sharp increase in the quality of education among 12th-graders (to 56 percent) was due to the same factors as the increased academic performance of the 12th-graders discussed above. Thus, the considerable improvement in the academic performance and quality of education of 12th-graders in high school was due more to subjective reasons than to an objective improvement of the students' knowledge owing to their schooling.

Over half of the high school students (including students receiving grades 5 or 6 in one or more general education subjects) are considered to have potential to do well in high school, to perform well in the school graduation or consolidated exams, and to aspire to continue education in universities or secondary vocational institutions.

Only 4.2 percent of the surveyed parents considered that the grades of the students in high school did not reflect their actual knowledge.

Attitudes of the students; the role of tutors in university admission. 24.3 percent of the surveyed parents believe that the knowledge acquired in high school is sufficient for the student to get admitted to the university of his/her choice. 14.3 percent believe that it is

"mostly sufficient." 31.8 percent believe that it is "largely insufficient," and 29.6 percent believe that it is "absolutely insufficient." Clearly, the majority (61.4 percent) of the parents tend to think that the knowledge acquired by students in high school is insufficient for the student to get admitted to university. About 43 percent of them failed to substantiate their negative response, but the remaining about 57 percent provided the following explanation:

- The standards of high school are low: 14.9 percent;
- It is impossible without tutoring: 14.5 percent;
- The material received in high school does not meet the university admission requirements, and the high schools do not teach using the admission exam questionnaires: 12.6 percent;
- Other explanations.

In the model high schools, 43.2 percent of the surveyed students take lessons from private tutors (18.2 percent of the 10th-graaders, 37.5 percent of the 11th-graders, and 60.3 percent of the 12th-graders). In the City of Yerevan, 56.2 percent of the high school students take lessons from private tutors (36.7 percent of the 10th-graders, 45.5 percent of the 11th-graders, and 60.3 percent of the 12th-graders), compared to 38.3 percent in the regions of Armenia (11.2 percent of the 10th-graders, 34.7 percent of the 11th-graders, and 55.0 percent of the 12th-graders)

In the model high schools, 11 percent of the surveyed students take private tutoring lessons from their school teachers, 16 percent from teachers of other schools, 7.2 percent from university teachers, 4.8 percent from relatives or neighbors that are specialists, 2.4 percent from other teachers of the same high school, which otherwise do not teach the student in school, 2 percent from other persons or special organizations, and 56.8 percent do not take lessons from private tutors.

For every general education subject, the average monthly fee paid to a tutor varies between 20 and 25 thousand Armenian drams (the equivalent of US $50 to 125), depending on the subject and the tutor.

97.3 percent of the high school graduates that took lessons from private tutors got admitted to universities, while only 53.8 percent of those that did not take lessons from private tutors got admitted.

High school contacts with the parents of the students. Only 50.5 percent of the students of the 18 model high schools have diaries (55.5 percent of the 10th-graders, 51.6 percent of the 11th-graders, and 44.8 percent of the 12th-graders; including 55.5 percent of the girls and 43 percent of the boys). Student possession of a diary also varies from school to school and is mostly due to the rigorousness of the school.

Only 79 percent of the surveyed parents had usernames and passwords for the website www.dasaran.am. This indicator varies considerably between schools. High schools also differ in how much they use the website www.dasaran.am. Parents, too, are

not actively using this website, as they prefer to interact with the school administration, the lead class teacher, and other teachers directly.

The website www.dasaran.am has created additional work and difficulties for the teachers. The teacher has to do the same work several times, entering the students' grades into the journal, the diary, and the computer. However, the schools do not provide the necessary conditions for every teacher to work easily with a computer.

Buildings and physical conditions. The majority of the high school buildings need capital repairs, because they were mostly built in the Soviet era and have not been renovated at all or have only been partially repaired after Armenia became independent. The physical conditions of the buildings are good or adequate in only seven out of the 18 model high schools. In the remaining 11 high schools, the conditions are poor in the restrooms, gyms, the special events halls, the windows, the floors, and some of the classrooms.

7. The "per student" financing of high school negatively affects the quality of education, because the high schools receive not only the students who did well in basic school, but also a large number of students that did not perform well academically; class size in high school increases, and teachers spend much time on discipline, distracting their attention to the individual students.

8. The other major shortcoming of the "per student" school financing principle is that the annual minimum costs of school maintenance in the financing formula are the same for all the schools, without any regard for their size. Many high schools still house the 5th to the 9th grades of basic school, and the per-student annual financing coefficient for those grades is lower than the coefficient for high school students, which creates additional financial difficulties for the school.

9. The per-student revenue of high schools from the government budget, as well as total revenues are mostly inversely correlated to the number of students in the school, i.e. the smaller the number of students, the higher the government financing and the total revenue, and vice-versa. The per-student revenue of high schools from the government budget, as well as total revenues fluctuate in a considerably wide range—from 144,300 to 288,100 drams and from 146,800 to 295,100 drams, respectively, which means that, under the current principle, high school financing based on "per-student revenues" is extremely uneven and non-targeted.

10. Current total school expenses [per student] and staff wage expenses are mostly inversely correlated to the number of students in the school, i.e. the smaller the number of students in the school, the higher the per-student current total expenses and staff wage expenses, and vice-versa. Current total school expenses [per student] and staff wage expenses fluctuate in a considerably wide range—from 146,600 to 295,100 drams and from 129,400

to 260,700 drams, respectively, which means that high school financial performance as measured through per-student expenses is extremely uneven and inefficient.

11. Contrary to current total school expenses [per student] and staff wage expenses, school maintenance expenses and other expenses [per student] are not tied to the number of students: the expenses of different schools in these areas vary depending on the number of the school's non-teaching staff, size, local weather conditions, the school's needs in the current year, and other similar factors.

Key Conclusions of the Survey

1. Creating a high school database, which will include financial and other data, is an important prerequisite of assessing high school education effectiveness. To improve effectiveness, it will be necessary to create an effective system of indicators, which will allow developing specific policies to address the current situation.

2. The goal of high school (to ensure high-quality stream education) and its financing mechanism (per-student financing) directly contradict one another.

3. In Armenia, high schools are mostly under-occupied (from one third to two thirds of their designed capacity), and this fact should cause serious concern to the government bodies in charge of general education. More generally, sufficient occupation of schools should become a key consideration for improving their efficiency and developing and implementing policies and strategies for the future development of the general education system.

4. The streams and substreams that currently operate in high schools still do not match the diversity of professions demanded in universities, secondary vocational institutions, or the labor market. This concerns especially professions in the fields of military studies, arts, and sports, as well as various crafts professions.

5. It is necessary to review the high school curriculum, subject plans, and textbook content. There are significant discrepancies and differences between the current subject plans and textbooks, on the one hand, and the university admission exam books, on the other. This concerns especially the 12th grade, the role and essence of which are not clear to either the students or their parents or even the teachers.

6. High school students and their parents have rather high opinions of the high school teachers' professional knowledge of the academic subjects, teaching skills, and personal qualities. The best teachers of high schools happen to be the best and well-known tutors in their communities.

7. About 6 percent of the basic school graduates admitted to high school had performed poorly in basic school, and the knowledge acquired by them in basic school absolutely did not meet the requirements of high school. The seeming (misleading) increase in academic performance of the low-performing students in the 12th grade (about 99 percent) was

mostly due to the fact that Armenia has developed a somewhat dangerous "tradition" of getting the low-performing students "to finish high school at any cost."

8. The knowledge of more than half of the basic school graduates is not sufficient for studying "well" or "excellently" in high school. The considerable improvement in the quality of education of 12th-graders was due more to subjective reasons than to an objective improvement of the students' knowledge.

9. About two thirds of the parents of high school students believe that the knowledge acquired by their children is not sufficient to get admitted to university, hence about half of the high school students take private lessons from tutors. Virtually all the graduates that took private lessons from tutors get admitted to university, compared to only about half of those that did not take private lessons from tutors.

10. Every academic year, high schools encounter problems caused by the changing number of students and financing. Recently, there is a decline in the number of basic school students. Moreover, not all graduates of basic school wish to continue their education in high school. As a result, the number of high school students diminishes every year, and the amounts of high school financing decline as a consequence, too.

11. Per-student revenue-based financing of high schools is extremely uneven and non-targeted, because government-funded revenues of high schools [per student] fluctuate in a considerably wide range—from 144,300 to 288,100 drams.

12. The financial performance of high schools (measured in terms of per-student current expenses) is extremely uneven and inefficient, because these expenses fluctuate in a considerably wide range between schools—from 146,600 to 295,100 drams. The high schools mostly spend the financial allocations received from the state budget for staff wages, and the funds are not sufficient for school maintenance and development costs and project implementation. A large part of the funds allocated for high school maintenance costs is spent non-purposefully, i.e. for paying the wages of the non-teaching staff.

13. High schools rarely incur capital expenses, and the investment or grant projects implemented in high schools with funding from the state budget or donor organizations are neither purposeful nor coordinated or accountable. They are not predictable, public, and transparent for all the schools.

Key Recommendations of the Survey

1. The students of the 5th to the 9th grades currently operating within high schools should be transferred to the nearby basic schools, and the high schools should deliver only the national general high school curriculum. Considering that most of the high schools in Armenia are under-occupied, a new strategy for high school development should be discussed, elaborated, and adopted.

2. Considering the uneven conditions of buildings and property among high schools in Armenia, it is necessary to review and assess the existing needs, to coordinate, and to take urgent measures to find diverse sources of funding for current and capital repairs and refurbishment of the high school buildings.

3. It is necessary to study the technical needs (equipment, materials, and the like) of laboratories and classrooms for languages and technical subjects (biology, chemistry, physics, information technology, and the like) taught in high school and to take measures for their refurbishment and purposeful and fully-fledged operation.

4. It is necessary to recommend to the Ministry of Education and Science and the Ministry of Finance to develop, adopt, and implement a new methodology of high school financing, which will clearly define the financing formula and the procedures of calculating all the indicators and coefficients included therein. It is recommended to develop the new methodology for high school financing on the basis of the following principles:

   - The number of students per class and the number of classes in high school, as well as the division of class hours should be defined in a way as to prevent class formation from directly influencing the amount of school financing and the quality of education;

   - The high school financing formula should be compatible with the structure of actual expenses incurred therein, with a special focus on expenses not related to the number of students, so that high school maintenance costs are determined by a justified scale (depending on the size of their land and buildings), rather than in equal amounts; and

   - The high school financing formula should be amended to introduce the independent variables of not only the number of students, but also qualitative indicators (for instance, the academic performance/education quality of students during the preceding year, or the like).

5. The density of stream/substream classes of high school should be reduced from the current 20-25 to 12-16 students. The procedure of class formation, academic plans, high school payrolls and staffing lists, and other documents should be revised and approved. It is necessary to study and assess the professional and financial capacity for teaching additional professional subjects and organizing optional classes and extracurricular group lessons.

6. It is necessary to define the procedure of remuneration for additional work performed by the staff of high schools (checking of written papers, acting as the lead class teacher, working in methodological unions, and the like).

7. The program financing mechanism should be fully implemented in high schools by defining performance assessment on the basis of non-financial indicators, which would improve the efficiency of high school expenditure policy planning and implementation.

8. Parallel to a system for non-financial indicators for performance assessment, it is necessary to develop and implement a system of program implementation monitoring and evaluation, which will also streamline the data collection mechanisms.

9. Capacity building should be pursued in both high schools and central and local government bodies in charge of general education, as a means of facilitating the program budgeting process and improving project management efficiency, and improving the efficiency of expenditure policies in the field of education.
10. It is necessary to improve the targeting and diversity of high school streams and substreams by aligning them with the professional spectrum required in universities, secondary vocational institutions, and/or the labor market.
11. It is necessary to review the contents of all subject plans and textbooks in high school by harmonizing them with the university and secondary vocational institution admission exam requirements.
12. The quality and effectiveness of teaching-rearing activities of high schools should be improved by means of achieving full-time workload for teachers, conducting regular professional training, reducing the rate of unexcused absenteeism, and improving the discipline and order in high schools.
13. There is a need to strengthen the parents' connection with high schools by means of consistent and comprehensive utilization of all possible means and mechanisms. The high school computer class employee, rather than the teachers, should be responsible for updating the information in the website www.dasaran.am.
14. The Ministry of Education and Science and all high schools should be prompted to create (if not created yet) and gradually to develop an official website for each high school with a view to facilitating improvements in the transparency, publicity, efficiency, and accountability of the teaching/rearing, financial, and logistical activities of high schools.