

**Case Study on National Testing Centers
Georgia**

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Acronyms

EPCC	Education Project Coordination Center
GAT	General Aptitude Test
GRE	Graduate Record Examinations
HEIs	Higher Education Institutions
IDPs	Internally Displaced Persons
MoES	Ministry of Education and Science of Georgia
NAEC	National Assessment and Examination Center
NCAC	National Curriculum and Assessment Center
NCEA	National Center for Educational Accreditation
NTC	National Testing Center
PIRLS	Progress in International Reading Literacy Study
TIMSS	Trends in International Math and Science Survey
TEDS-M	Teacher Education and Development Study in Mathematics
UEE	Unified Entrance Exams
USD	United States Dollars
WB	World Bank

Policy Rationale for Establishing National Testing Center

Two main factors conditioned the establishment of a national testing center in Georgia and introduction of HEI entrance exams especially. The most important of them was the corruption existing in the education sector. Equally important factor was the aspiration of the Georgian government to join the family of developed nations that required re-consideration of the system of education provision and of the measurement of learning outcomes in particular. The latter factor was especially relevant with regards to joining the Bologna process that became a top priority of the education system.

Corruption in education sector had been a problem in Georgia even during Soviet times. Because personal connections and bribes used to play a big role in getting employment and good positions in a centrally planned economy, a few young people did not bother with getting quality education. Their parents used to pay for obtaining places in higher education institutions or even buy university diplomas for them. Having higher education diploma was important for social standing.

This situation persisted in the years following the collapse of the Soviet Union; however, one more source of corruption emerged in addition to the mentioned *cultural grounds*. The corruption in education sector exacerbated as a result of *underfinancing* of this sector. Thus, throughout 1990s the government's expenditure on education sector had been under 3% of its GDP. Teachers' salaries were low and even those were not paid timely, resulting in the arrears of payment. Not surprisingly many qualified teachers either moved abroad or left the sphere and got involved in other economic fields of activities, which put the quality of education provision at risk. Other teachers complemented their poor salaries with the income received from private tutoring. (It should be noted here that in view of a few education experts private tutoring offered by HE teaching staff involved in university entrance examinations could be considered as a source of corruption. These tutors had access to the inside, in many cases non-transparent information about the criteria and methods for students' assessment; therefore, they were charging higher fees for private tutoring than other teachers.) A few of more other teachers who were influenced by drastic cuts in their salaries got involved in the corrupt behavior, granting good grades to bribe payers both at schools and at university entrance exams. Having satisfactory grades at schools was important for receiving secondary school completion certificate which in turn was required for enrolling in higher education institutions.

Corruption had a discriminatory influence on youth from poor families not only in terms of getting admitted to HEIs but also on receiving government scholarships as these scholarships were solely merit based. Moreover, no special programs existed for young people from poor households or for national minorities. Equity concerns due to corruption were aggravated by the fact that the poor youth could not afford paying for private tuition that was recognized as a necessity for getting higher education.

Thus, before the establishment of a national testing center university entrance exams were unfair and non-transparent and they were not used to inform policy making with regards to quality improvements to school education. These factors had negative effect on the equity of admission of young people to HEIs as youth from poorer households, and especially those from rural areas of Georgia (where quality of education was known to be poorer), had lower likelihood of enrolling in higher education institutions.

Because of pervasive corruption in all spheres of government's operations, dissatisfaction of the country's population with the government was increasing (this dissatisfaction later had led to a Rose Revolution in November 2003). Under the pressure of civil society and international organizations the government was pressed to propose anti-corruption measures that was covering education sector as well.

Corruption at university entrance exams¹ was recognized as one of the pressing problems by the team of World Bank's national and international experts working on the development of Education System Realignment and Strengthening Project in 1999. One of the study papers commissioned during the project preparation phase (Lorentzen, 2000) describes the system of student entry and progression at HEIs and concludes that there was an inequality in access to higher education due to a highly corrupt nature of the exams' administration.

The World Bank financed Education System Realignment and Strengthening Project the implementation of which started in 2001 aimed at improving efficiency, equity and quality of the education system. One of the important components of the first phase (years 2001-2005) of this project was to establish methodological and institutional mechanisms for the assessment of students' learning outcomes. Therefore, from the very beginning of the project the assessment component was set up within the Education Project Coordination Center. Later the National Assessment and Examination Center (NAEC) was established as a legal entity of public law. Because NAEC was established on the basis of WB project and it was mainly the project staff members and the Ministry of Education and Science officials that played a big role in its establishment.

Experts working on the development of the mentioned project² were suggesting establishing the testing center that would conduct university entrance exams in addition to conducting other types of assessments. The government, and the Ministry of Education and Science in particular that was responsible for the project preparation phase, was aware of the corrupt practices at HEI entrance exams; however, there was a mutually beneficial relationship among these institutions as the ministry employees were most likely receiving their portion of the pie from the administrators of HEIs that were running their own university entrance exams. Hence, the government rejected the idea of an independent institution running centralized HEI entrance exams. The experts were told that the government feared the opposition - mainly the administrators of HEIs.

¹ Lack of reliable and systematic information on learning outcomes was a broader issue identified by the experts that required attention.

² One of the former experts currently works at NAEC as a team leader of the research group.

As a result, the assessment and examinations component of the WB project and later the newly established testing center were initially charged with the responsibility of conducting sample based national assessments of students. They were also charged with the responsibility of participating in international studies. It was not until 2004 when the decision was taken to conduct centralized examinations for the admission of applicants in the country's higher education institutions. The new government that came into power after the Rose Revolution was determined to eradicate corruption in all spheres of the government, including education sector.

The new system of students' admission to universities was introduced very rapidly. The changes to the Law on Education were made in December, 2003 and the first unified³ national exams were conducted in the summer of 2005. The decision was met by a strong opposition from the side of HEI administrators, a few HEI faculty members, and also by students and parents who were expecting some gains from the old system. For several days there were street protests and hunger strikes, followed by public arrests, however, the new government stayed firm with its decision.

The results of the conduct of the first national exams were promising as Georgian population for the first time in many years believed that students could get admitted to HEIs with just their knowledge and abilities. This perception of population was confirmed by a few evaluation studies conducted by the Transparency International and the American Councils that judged the conduct of the exams in 2005 and 2006 as well organized and transparent.

Legal and Institutional Arrangements

National Assessment and Examinations Center in Georgia was established under the auspices of WB financed Education System Realignment and Strengthening Project. It was officially registered on 5 July, 2002 as a legal entity of public law of Georgia by the administrative decree of the Ministry of Education and Science.

According to the relevant law "Law of Georgia on Legal Entity of Public Law", such entities can be established under the decree of the President or under the administrative decree of the relevant government body. Legal entities of public law under the state control are given the freedom to independently conduct the activities envisioned by their charters. The state has the right to control economic and financial activities, as well as the legitimacy, rightness, and effectiveness of operations. Relevant state bodies are also responsible for the development and endorsement of the charters of legal entities and making policy level decisions.

NAEC is accountable to the MoES and its activities can be evaluated by the Chamber of Control of Georgia as well. The center on its own behalf can conclude agreements, has its

³ These exams were named "unified" as NAEC was testing students' learning across a range of subjects

own stamp and bank account. The organization is managed by its director who in turn gets nominated by the Ministry of Education and Sciences and gets appointed on that post by the Prime Minister. NAEC does not have a governing body; it is unilaterally governed by its director.

One of the first agreements signed by NAEC was the agreement on setting up and implementing a national assessment and examinations system - concluded with the Ministry of Education and Science and the WB Education Project's Coordination Center (EPCC). The latter center by itself was established by the Development Credit⁴ Agreement made by and between the Government of Georgia and the World Bank's International Development Association.

The agreement stipulated the following obligations for NAEC:

- (a) Provide the Georgian education system with valid, reliable and objective tools necessary for the assessment of students' knowledge and skills;
- (b) Provide the Georgian Government, general secondary education schools, teachers, parents and students with information about the outcomes of teaching and learning;
- (c) Participate in monitoring the quality of education and provide recommendations on this matter to the Ministry;
- (d) Conduct National Assessment and National Examinations in subjects and grades identified by the Ministry, collect and analyze data;
- (e) Implement research of assessment-related issues;
- (f) Identify assessment criteria for group and individual teaching and help teachers with learning and applying such criteria;
- (g) Use modern psychometric methods with the purpose of analyzing results and, if necessary, relevant computer software; keep an eye on new achievements in the field of psychometrics and attend relevant conferences and discussions.
- (h) Participate in international evaluations of students' accomplishments.

Because NAEC was receiving funds from both the government of Georgia and IDA in the form of a grant, for the first four years of its existence NAEC was financially accountable to both the MoES and EPCC. IDA share of financing was decreasing each year and as of 2006 NAEC was financed by the state.

Soon after the end of IDA financing, in April 2006, the Ministry of Education and Science of Georgia took the decision to separate a national assessment function from NAEC and transfer this responsibility to a curriculum development center – currently National Curriculum and Assessment Center (NCAC). The decision of the Ministry was largely influenced by the director of the Curriculum Development Center and its staff members, as in their view the assessment instruments were not based on the existing school curricula and education strategy.

Handover of the national assessment function to the Curriculum Development Center was highly criticized that time by the WB as the newly established division within that center did not have a capacity, trained staff members to conduct assessments. Besides, conducting

⁴ The Georgia Education System Realignment and Strengthening Credit.

assessments for their own study programs was seen as conflict of interests by the World Bank. The subsequent phase of the WB project financed the capacity building of NCAC staff members in assessment methodologies.

According to the new charters of NAEC and NCAC, the work of both of these organizations are governed by their charters, Constitution of Georgia, Law on legal Entity of Public Law, other normative acts and relevant international agreements. In addition the work of NAEC is governed by the Law on Higher Education, while additional relevant laws for NCAC include the Law on General Education and Law on Professional Education. Law on General Education and Law on Higher Education specify the responsibilities of NAEC and NCAC with regards to assessments and examinations.

NAEC and NCAC are responsible for undertaking research to further strengthen the assessment field of the education system. Both of these organizations are involved in the assessment of students' outcomes in primary and secondary schools – the responsibility for conducting national assessments lies with NCAC, whereas the responsibility for participating in and conducting international assessments, exams and Olympiads lies with NAEC.

According to the charter of NCAC, the specific responsibilities of this organization with regards the assessments include a) evaluating group and individual teaching process of students; b) implementing national and regional assessments in public schools of Georgia; c) developing and researching the assessment field in education sector; d) establishing relationships with assessment centers abroad.

The new charter of NAEC adopted on February 5, 2007 includes more responsibilities for the organization in addition to those listed on Page 6 of this report (but with the exception of conducting national assessments of students' learning in primary and secondary schools of Georgia). The added responsibilities include the preparation and administration of HEI entrance exams, exams for school leavers at the request of school(s), certification exams for distance learners / home-schooled youth, administration of GRE exams, and teacher's certification exams.

Since its establishment NAEC has implemented the following activities:

- In 2002 and 2003 implemented state exams nationwide for 9th grade students in three subjects (Georgian language, mathematics and foreign languages) using new model.
- In 2003-2004 conducted a nationwide sample based assessment of primary school children in two subjects – Georgian language and mathematics.
- In 2005 conducted centralized university entrance exams for the first time. These exams are being conducted annually.
- From 2005 NAEC implements international researches that are guided by the International Association for the Evaluation of Educational Achievement (IEA).
- In 2006 conducted international conference on the topic “Promoting Fairness and Equity in Access to Higher Education”.
- Administered international education surveys such as PIRLS (2006), TIMSS (2008) and TEDS-M (2007).

- Starting from 2006 NAEC had been working on the preparation of Graduate Record Examinations (GRE) for progressing to Master's level. Administration of GRE exams started in 2009.
- Starting from 2008 NAEC had been working on teachers' certification exams the implementation of which started in 2010.
- Starting from 2009 NAEC implements Olympiads for the purposes to recognize outstanding students, provide incentives to students, teachers, and facilitate school reform process.

As to the NCAC, since its establishment in 2006 the center has conducted:

- Assessment of students learning, teaching and internal assessment practices (2006-2007).
- Assessment of teaching Georgian as a second language in the 1st grades of non-Georgian pilot schools (2007).
- National assessment in Georgian language and literature for 9th grade students (2009).
- National assessment for 4th grade students in math and reading comprehension (2010).

Two testing centers in Georgia have both formal and informal relationships with various players in education sector. MoES established and uses these centers for the implementation and advancement of state education policy and programs. The centers collect data on educational processes and outcomes and advise the Ministry on related matters. The Ministry either introduces changes through its administrative decrees or normative acts, or later takes those recommendations to the parliament which is ultimately responsible for passing legislation and endorsing policy decisions. Furthermore, the testing centers frequently use the help of Education Resource Centers (regional and district level units of MoES) that are charged with the responsibility of facilitating educational processes locally in the country's education establishments. Hence, ERCs facilitate the conduct of assessments and studies in their respective areas; mainly provide the assistance in disseminating information to schools.

Both testing centers closely collaborate with primary and secondary schools where they conduct various types of assessments in accordance with the laws on general and higher education and in accordance with their charters. In addition, testing centers have working relationships with National Center for Teacher Professional Development Center (TPDC) and National Center for Educational Accreditation (NCEA). They exchange information with these organizations, provide and seek advice of relevant staff members. NAEC also collaborates with HEIs as this testing center administers university entrance exams and GRE exams. Recently NAEC and NCAC have worked together on the development of a format and general directions for school leavers' certification exams (the development of detailed instruments will be the responsibility of NAEC).

As a consultation mechanism both NAEC and NCAC have established formal review/consultation committees for the review of their research instruments. The members of the committees come from secondary schools and higher education institutions (teachers), research institutes for relevant subjects (e.g. institute of mathematics), TPDC,

non-governmental organizations working on education research issues, individual experts in the field.

The above described relationships of the testing centers are informal as there are no formal agreements signed among those organizations – except when professionals are sub-contracted for the review of research instruments. Formal relationships exist between the testing centers and international organizations in education field. Both of the testing centers are members of the International Association for the Evaluation of Educational Achievement (IEA), and have a partnership agreement with world’s leading testing and assessment company CITO (Netherlands). Besides, NCAC has an agreement with MoES and WB as this agency is a recipient of WB financing within the framework of the Phase 2 of Education System Realignment and Strengthening Project.

In addition to NAEC and NCAC, there are other organizations that are conducting assessments in the education field. Thus, NCEA conducts accreditation of schools and HEIs and therefore collects and analyzes institutions and programs related data. The center is responsible to certify that teaching processes in secondary schools comply with the national goals for education and curricula, and to certify that HEI programs are in conformity with international standards. TPDC is also charged with the responsibility to undertake evaluations of teaching practices, identify training needs of education personnel – although they can outsource the assessment services.

Master’s level and PhD students in a few universities that have faculties in education field also conduct education related studies in addition to their faculty members. A few more NGOs conduct education research in Georgian schools – topics include interactive teaching, inclusive education, etc. However, the research by NGOs at schools is not welcomed by the new Minister of Education and Sciences of Georgia. Recently Norwegian Refugee Council was conducting a study on IDP integration issues in secondary schools of Georgia by the end of 2009 and after a sudden change of the Minister the researchers of the contracted research firm were not allowed to take interviews from teachers and children at schools (Sean Loughna, et al., 2010). Restrictions were also placed on giving interviews to media representatives without a prior permission from the Ministry.

Before establishing testing centers in Georgia the system of assessing students’ learning outcomes was simple and not employed to inform the decision making process. Students were given grades on a scale from 2 to 5 based on the knowledge of certain facts. NCAC got involved in the development of such methods of assessment and examinations that *would evaluate students’ higher order cognitive and other skills*.

Currently school teachers use multiple methods for the assessment of students’ learning outcomes such as homework, class tests, observation, portfolio of work, presentations, self-evaluation, group work, involvement in educational process, etc. Teachers are free to choose the relative weight for each of those assessment methods (they had to use at least four of such methods) for computing the final score. However, the research showed that the new system of assessment was complicated for teachers and applying relative weights required too much of their time. Therefore, for the coming academic year it has been decided to reduce the number of methods of assessments from four to three: homework,

class work, and teachers are free to choose a third method of assessment (e.g. tests administered at school). The system of using multiple methods of assessment is believed to *better identify the difficulties in student learning and develop remedial measures.*

In addition to the internal assessment of students by teachers, a few schools administer grade completion exams. As these exams are not a requirement they are not used to inform policy decisions. It was only in 2002 and 2003 when NAEC has conducted 9th grade completion state exams; after that it was discontinued. However, for the coming years it is planned to introduce the final - 12th grade completion certification exams and students will be required to pass exams in all subjects. These exams will be administered by NAEC and the lessons learnt during the previous rounds of school exams administration will be taken into account. Namely, one of the important recommendations was not to employ the same subject teachers as supervisors.

External assessment of students learning outcomes is administered by NCAC once in four years in certain subjects. As mentioned earlier, this organization administers sample based national assessments in certain subjects. (It should be outlined here that such kinds of assessments were not conducted before the establishment of testing centers.) The findings of these assessments *allow drawing conclusions on the content of curriculum and other factors that influence students' learning outcomes.*

The incentives for corruption exist for the first two types of assessments – internal assessment by teachers and grade completion exams. The new ethics code recently developed by the TPDC for bids teachers to take bribes, gifts from students or their parents. It also discourages the practice of providing private tutoring to their students. The latter was an accepted practice and teachers used to favor students who they were giving lessons to. To reduce the instances of bribe taking the government tries to increase teachers' salaries and benefits.

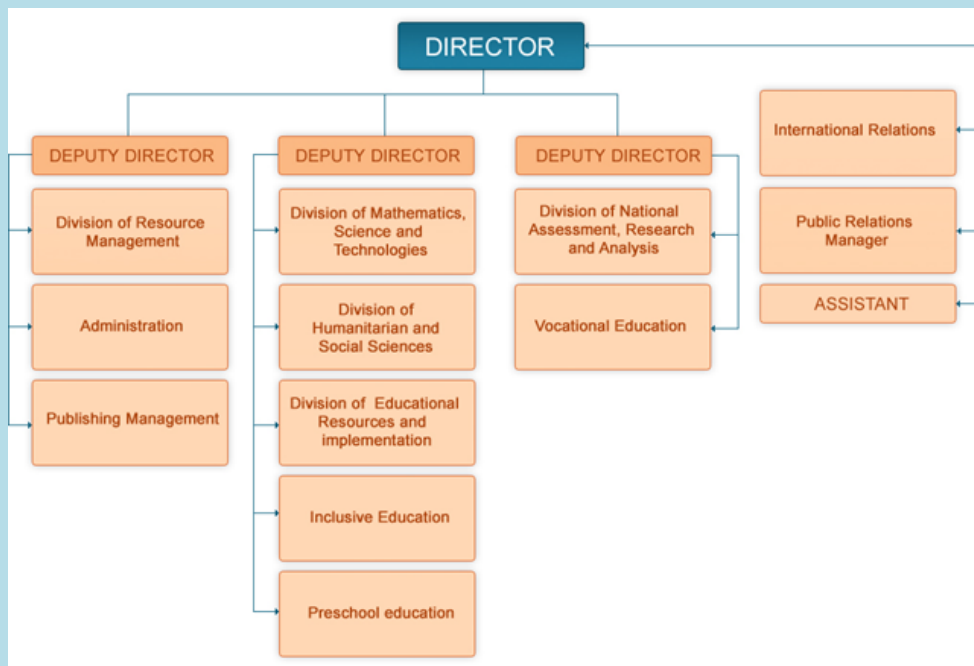
Organizational Structure of Testing Centers and Governance

Because there are two centers in Georgia responsible for providing educational testing services, this section will describe the organizational structure of each of them separately.

The organogram presented below shows that Division of National Assessment, Research and Analysis is one of the many other divisions and functions of the center. Its sole responsibility is purely research related – preparing research plans, developing and pre-testing research instruments, collecting and analyzing data, writing reports and disseminating the findings. In the accomplishment of these activities the research division is supported by almost all other offices of the center (with the exception of preschool education office). Thus, Administration and Resources Management Divisions of the center issue contracts for short-term personnel, make payments and logistical arrangements (such as printing of tests). Publishing Management Office ensures the publishing of study reports. Public Relations Manager works with media and different organizations for wide dissemination of study findings. Staff members of subject divisions (Division of Mathematics, Sciences and

Technologies and Division of Humanitarian and Social Sciences) who are responsible for the development of curriculum in the respective school subjects, collaborate closely with the consultants of the Research and Analysis Division on the development of research instruments for national assessments. When the research findings become available, the results are being used by the two subject divisions of NCAC for making any necessary adjustments to the existing educational programs and processes.

Figure 1. Organogram of NCAC

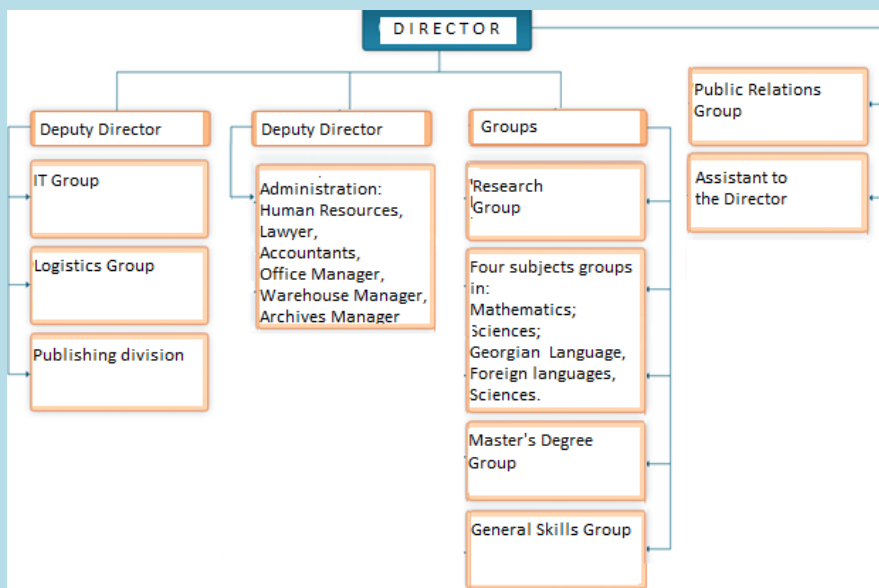


There are nine permanent staff members working for the division of national assessment, research and analysis – manager, research coordinator, psychometrics staff member, programmer, statistician, two subject specialists in two subjects – Georgian language and literature and mathematics. In addition, for each of those subjects the division hires 30 subject specialists to work on the development of research instruments. When required, research division of NCAC subcontracts data entry personnel and fieldworkers.

Staff members working for the research division had some experience in educational research prior to their hiring. The manager and psychometrics staff member came from academia, more specifically from psychology department of the Tbilisi State University. However, in the beginning staff members' capacity in applying modern educational research methods and in developing research instruments was low (there are not many professionals in Georgia in this field). Therefore, the second phase of the WB education project invested funds in the capacity building of the division's personnel. They sent staff members abroad for attending training sessions, and brought in international consultant for assisting national staff in setting up the assessment system. The manager of the Research and Analysis Division believes, however, that having the services of an international consultant would have been important during the implementation stage of national assessments as well.

As to the National Assessment and Examination Center, it is also governed by the director and has all the necessary support services for the implementation of assessments and exams. Number of permanent staff members on fixed contracts constitutes 48 persons, on temporarily fixed contracts 50, and the number of personnel contracted on a short-term basis reaches 7,000 (includes coordinators, supervisors, registrants, etc.). The distinction between the fixed and temporarily fixed contract personnel is that the latter staff members do not receive annual leave and other benefits from the center – though they are still considered to be employees of NAEC.

Figure 2. Organogram of NAEC



In this organization as well, most of the professional staff members come from academia and research institutions. As the core staff members were hired during the implementation of the first phase of the WB’s education project, hiring procedures had to be transparent and follow certain procedures. Therefore, vacancy announcements detailing job specifications and functions were issued and placed in various media outlets and hiring decisions were made by EPCC. Later the same procedures were followed when NAEC was established (it still was receiving WB financing); however, hiring decisions of the core staff this time were made by the organization’s director. Within the last 10 years the number of staff members increased from four to about a hundred.

NAEC’s core personnel is assigned to specific groups – such as general skills group, mathematics group, research group, etc. Each of those groups has from two to four fixed-term permanent staff members. The biggest group is IT group that has eight permanent staff members. If we consider staff members who have temporarily fixed term contracts than the total number of employees reaches 100 persons and the size of each group varies from 4 to 11 persons. So, research and foreign languages group each comprise of 11 employees, Georgian language and literature – 7, master’s level, general skills and natural sciences groups each have 6 employees, mathematics and humanitarian sciences groups each have four employees.

The responsibility of subjects groups (math, sciences, etc.) is to develop research instruments and participate in pilot-testing. They also analyze research findings and contribute to writing the reports and recommendations respective to their subject matters. The responsibility of research group is to make sample design for pilot testing of research instruments, supervise fieldwork, collect and analyze data, prepare research reports and disseminate the findings. In addition, the research group is responsible for consolidating information on the resource requirements and submitting it to administration. All groups work together to develop and agree on the format of research instruments and on the interpretation of research findings.

It should be noted that there is almost no staff turnover at NAEC and many of them work in the organization from early years of its establishment. The capacity of staff members was built during the first phase of WB education project through attending training courses abroad and getting assistance from international experts. In addition, before implementing any new initiative, relevant staff members go to study tours to well established educational research institutions in Europe, US or Canada.

Operations

The conduct of national sample based assessments by NCAC was already discussed in the previous section. This section will mainly discuss the operations provided by NAEC. As mentioned earlier this organization administers and implements international assessments, HEI entrance exams, GRE exams and teachers' certification exams. At the end of 2010-2011 academic year NAEC will also be administering 12th grade completion certification exams for school leavers. However, for the purposes of the present study the report will focus on the analysis of HEI entrance exams that used to be administered in a highly corrupt way, thus, affecting the equity of access to higher education.

For reducing corruption in the admission exams to HEIs, one of the important decisions taken by the Ministry of Education and Sciences of Georgia was the introduction of centralized university entrance exams (UEEs). This task was delegated to an independent National Assessment and Examinations Center. UEEs have completely replaced entrance exams that earlier used to be conducted by individual higher education institutions.

NAEC has undertaken number of steps to curb the corruption and ensure the transparency and equity in access to higher education. First of all, in the first two years of the reform the center launched a vigorous public information campaign to *provide stakeholders with full information about the new model of examinations*, new tests and assessment criteria (NAEC had approximately a year and a half between the decision was taken on UEEs and its actual administration). The center produced and disseminated leaflets and other information materials, used all media outlets including Internet and TV (32 information advertisements were prepared and aired on various TV channels). NAEC also used assistance of ERCs in disseminating information, conducted meetings, presentations, press-conferences, and provided telephone hotline number. Evaluation of the exams conducted by Transparency

International and American Councils showed that about 86% of all applicants in the first year and 94% of applicants in the second year were adequately informed about the exams.

Secondly, the agency tried to *provide similar conditions for every candidate*. Instead of traveling to a certain HEI for passing exams (mostly to the capital of the country or big cities) that used to be the case earlier, now candidates can pass exams in 15 testing centers located throughout a country – this allows applicants from rural areas and poor households access the centers at less costs through saving on transportation and lodging. The registration of applications for the exams was made easy as well – currently all those wishing to participate in HEI entrance exams can get registered in the nearest schools.

The conditions of rooms and environment are similar in all 15 centers; however, none of the testing centers have air conditioning which in highly warm summer months differently affects the ability of students to concentrate and answer exam items; besides, depending on weather conditions, certain locations may be in advantageous conditions than others (lower temperature). Before visiting the center students are given a plastic examination card which states their sitting location in the building and in the room. This location is randomly assigned by a computer program and printed on the applicant's identification/registration card.

Thirdly, NAEC *set up transparent examination procedures*. From 2006, before the appeal procedures begin, HEI entrants are able to see scanned pages of their marked scripts on the Internet after entering their personal information. (Applicants may also receive hard copies of their scripts.) The same way they can also see their individual exam and final scores on the Internet and receive this information via sms messages sent to their cell phones.

During the examination days, video monitors are installed in every testing room allowing live transmission to parents and other observers outside the centers. Inside the centers certain number of administrators, coordinators and supervisors are ensuring the smooth run of the exams process⁵.

Fourthly, NAEC *established mechanisms to ensure the confidentiality of exam test papers and candidates' scripts*. In order to avoid the problem of leaking of information on exam tests, NAEC contracts publishing companies located abroad. After their arrival to Georgia they are stored in sealed boxes at the warehouses of the National Bank of Georgia and with the police escort are transported to the exam centers on the day of exams.

For ensuring confidentiality of candidates' scripts the names of candidates are not included on test papers. Furthermore, from 2008 NAEC introduced computer marking of test papers (eMarker). *All these made it possible to objectively assess applicants' knowledge and skills and make an objective selection of entrants for HEIs.*

The selection of candidates itself is made using specially designed software that considers candidate's score on the admissions test, the university faculty, faculty of choice, and the

⁵ There is 1 administrator, 1 coordinator for each testing center, plus 2 supervisors per each sector that comprises of 15 test-takers.

number of places available in the faculty. It is an automated process which excludes human judgment and the possibility of corruption. (The same software identifies students who are eligible for receiving government scholarships.)

It is worth pointing out that HEI applicants currently have a possibility of applying for seven different faculties that increases their chances of admission to HEIs. Furthermore, even if the scores of the applicant are not enough for enrolling in the HEIs of their choice, they are given a chance to enroll in those institutions that have vacant places available, providing that applicants get minimum competence scores on the exams. All these measures *make higher education more accessible* to youth. Thus, the number of applicants and enrolled students has increased since the introduction of UEEs. The number of applicants has increased from about 32,800 to 36,500 for the period of 2005-2010 and so did the number of enrolled students - 19,500 and 25,381 respectively (the latter number of students includes 3276 students enrolled in higher professional education programs that were absent back in 2005).

To achieve *equity of access to higher education for ethnic minority applicants* NAEC from 2008 has been administering general aptitudes test in Azeri and Armenian languages as well.

After the end of exams, NAEC analyzes data and *publishes both detailed and aggregate information* which can easily be downloaded from their website. This information includes number of applicants, the list of students who got admitted to HEIs and list of students who got government scholarship with the indication of their scores and the amount of funding. Aggregate information is available for example about the success rates of applicants' enrolment by regions, districts and schools of Georgia.

Information about success rates by schools was published by NAEC just once and it had a negative outcome on students with low academic achievement. Because students' success in entering HEIs influences schools' rating, there were instances when schools were reluctant to enroll students with poor academic achievements, or they were not allowing such students to graduate by making them repeat the same class. Nonetheless, starting from the 2010-2011 academic year the MoES introduces "Schools Branding" initiative and students' success at HEI entrance exams will be one of the criteria for ranking them. Furthermore, according to this initiative, the graduates from the highest ranking schools will automatically get enrolled in HEIs of their choice.

In addition to the emphasis on curbing corruption, one of the important directions of NAEC's work was to develop and *introduce new assessment methods for the assessment of students' higher levels of knowledge*. The new instruments placed more importance on the assessment of analytical, practical skills rather than assessing knowledge of facts. Subject tests include closed and open-ended items and an essay, for the assessment of which graders are trained extensively.

For the preparation of tests NAEC subject matter specialists conducted compatibility studies of school curricula and HEIs' requirements; exam instruments were pilot tested many times in all regions of Georgia to ensure the internal consistency and content validity of the

instruments. Moreover, psychometric analysis was conducted and discrimination index and difficulty level of items was determined before items were selected for the final versions of tests.

In 2010, those wishing to enroll in HEIs had to pass four compulsory exams – General Aptitude Test (GAT), Georgian language and Literature, Foreign Language (English, Russian, French or German) and one elective subject from the following list of subjects: math, history, geography, physics, and biology depending on the faculty or faculties he/she was applying. If an applicant was applying in different fields he/she might have ended up passing more than four exams.

The most debated exam in the beginning of introducing UEEs was GAT that was a novelty in Georgia. Up until 2010 the allocation of scholarships was based on the results of this test only as NAEC considered that this test puts all candidates in equal conditions and is a good predictor for assessing learning potential and success in an academic life. Starting from 2010 the scholarships are rewarded based on the performance on all four exams giving an explanation that this system would be fairer. For the calculation of final scores the scaling model is used that makes it possible to compare scores of those entrants who took different versions of the same exam subject, and also compare scores of different subjects.

The results of UEEs are going to be used as one of the criteria for ranking schools, but these results are not used by NCAC for making or revisiting national curriculum. NCAC staff members think that UEE exam items are not based on the entire school curricula and sometimes they even deviate from it.

One of the drawbacks of UEEs is that graders use their status to charge higher fees for private tutoring they provide, as they try to convey a message to prospective candidates that they know better the structure and content of exam instruments than other tutors and that NAEC does not do much in its PR campaign to refute this perception.

One of the negative outcomes of UEE tests were that teachers started to teach to the test and students were studying mostly those subjects that they had to take at UEEs. Furthermore, in the last grade of secondary schools students' absenteeism was high as they were preparing for UEEs. To tackle the problem, starting from 2011 the government is introducing secondary school leaving exams for getting the certificate of school completion. Exams will be administered in all subjects and meeting a minimum competence score will be required for getting the certificate.

Funding

The charters of the testing centers state that the budget of the organization is formed through the targeted funds from the state budget, grants, and from income received from the provision of services. The centers are permitted to use funds only for undertaking those functions of the organization that are stated in their charter.

Because the majority of financing for both testing centers in Georgia come from the state budget, the budgeting process starts in the first quarter of each year. In the middle of the year the final budget is submitted to the Ministry of Finance which later is passed to the Parliament for approval.

The person responsible for consolidating and finalizing budget at NAEC is the Deputy Director who oversees the administration of the agency. There are some fixed costs that the organization has – such as salaries of permanent staff members, maintenance expenses, etc. Different units of the organization submit to the Deputy Director only the variable costs. For example public relations office may plan with other units of the organization to conduct certain types of activities (e.g. airing of TV advertisements, printing of leaflets, organizing press-conferences, etc.), employees of IT unit may need to upgrade their computers, masters' group members may need to attend training session abroad, etc. For conducting exams and assessments all relevant groups (subjects groups, research group, masters group) work together to identify number, duration and type of persons to be hired on a short-term basis, as well as to identify number of their fieldwork days and other resource requirements.

The total budget of NAEC in 2009 was about 4 mln. USD and the share of government's financing was 79%. The remaining funds were mainly received from the collection of exam fees. (For example, the fee for one subject of unified entrance exams constitutes 10 laries which is about 6 US Dollars.)

Table 1. Share of different sources of financing in NAEC's budget in 2009.

Sources of Financing	Percent
State Budget	79.0%
UEEs fees	14.3%
Graduate Record Examinations fees	3.7%
Fees for appeals	0.4%
Selling of books	0.7%
Other sources of income	1.8%
Total	100%

The budget execution document available on the parliament website gives limited categories of the expense items of NAEC. It can be seen from the table below that the salaries of staff members and short-term personnel constitute the biggest part of the agency's expenses – 77.5%.

Table 2. Share of different expense items in the total expenses of NAEC in 2009.

Expense Items	Percent
Staff members' salaries	22.0%
Salaries of short-term personnel	55.5%
Per-diems	2.6%
Office expenses (communal expenses, printing, publishing, etc.)	13.9%
Maintenance expenses of buildings, vehicles, equipment	3.1%
Other expenses	2.9%
Total	100%

Adequate funding of assessments and examinations has a crucial importance for getting quality data/information, ensuring equity and for curbing corruption. As mentioned earlier, in view of both NCAC and NAEC staff members financing is adequate for the implementation of their activities. NAEC staff members and contracted personnel receive good remuneration that guarantees the reliability of results. However, the lack of air conditioning for example in the testing centers may have some negative consequences on the assessment outcomes.

Lessons Learnt

During almost a decade of the establishment of the national testing center (NAEC) in Georgia, the organization in cooperation with other agencies has implemented many changes with regards to improving the area of educational testing and consequently education quality. On the whole, introduction of new assessment methodologies and of a new model of university entrance exams is considered to be a success story as they improved the methods of students' assessments and substantially reduced corruption. This was mainly attributable to a *strong political will* of the new government that introduced reforms in a short period of time. Another factor was the *staffing* of the center that attracted dedicated and reliable staff members. One more factor was *gaining public trust* through the administration of corruption free exams and vigorous public relations campaign. Lastly but not the least, *sufficient financing* provided to the center enabled it to achieve stated goals.

However, there are areas of the state policy and areas of the testing centers' operations that are debatable and yield to negative consequences. One of the debatable issues was the *separation of national assessment function from NAEC* that was largely stemming from the lack of dialogue and consultations between NAEC and National Curriculum Center. On the one hand, the positive side of NAEC implementing national assessments was that it had trained personnel and capacity to conduct assessments. It was believed also that information collected by NAEC would have been impartial as they were assessing the programs developed by National Curriculum Center. On the other hand, if the collected information was not used by the end user - the National Curriculum Center than it was yielding to a wasteful use of resources. Therefore, to ensure the usage of results *it is of*

utmost importance to have a good dialogue and consultations with the end user before implementing any assessments.

Another debatable issue is *publishing aggregate information on applicants' achievements on UEEs by schools* as it turned out that it negatively affected students with poor academic standing (see Page 15). But on the other hand, it allows parents to make more informed decisions about the school's choice for their children.

Lastly, but not the least, one more debatable issue is *the assignment of the function of conducting international assessments to NAEC*. In many other countries this can be done by any research institution selected on a competitive basis. It seems that NAEC holds monopoly on conducting international assessments in Georgia. The positive side of NAEC conducting international assessments can be considered the fact that NAEC has vast experience and easy access to schools; whereas one of the negative sides could be the fact that it may contribute to inefficient use of resources as other research institutions may conduct those studies cheaper.

Another issue is the *public monitoring* of NAEC's operations. During five years of conducting UEEs, NAEC has gained public confidence and everything is built on the faith that this organization is doing a good job. No external monitoring has been done so far of certain aspects of its operations - for example regarding the actual workings of its IT systems and software (e.g. random assignment of students to sectors, assigning enrolled students to specific faculties of their choice, etc.).

Finally, no public information is available as well on the utilization of resources according to specific budget items and by specific exams and assessments. It would have been desirable to require testing centers to report expenditures by projects⁶ - e.g. costs of conducting Olympiads, teacher certification exams, etc. This would require making changes to the format of financial reporting.

In order to ensure continuing trust of general public in NAEC's operations, it would be important to reexamine the charter of the organization and relevant legislation in order to make the system even more transparent, more efficient and fairer.

⁶ Currently the existing format proposed by the Parliament requires to list expenses by such categories as staff salaries, per-diems, etc.

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