

Document of
The World Bank

Report No: ICR00001318

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IDA-38490)

ON A

CREDIT

IN THE AMOUNT OF SDR 13.2 MILLION
(US\$ 19.0 MILLION EQUIVALENT)

TO THE

REPUBLIC OF ARMENIA

FOR AN

EDUCATION QUALITY AND RELEVANCE PROJECT

IN THE SUPPORT OF THE FIRST PHASE OF
THE EDUCATION SECTOR REFORM PROGRAM

June 1, 2010

Human Development Sector Unit
Europe and Central Asia Region

CURRENCY EQUIVALENTS
(Exchange Rate Effective 12/31/2009)
Currency Unit = Dram (AMD)
AMD 1.00 = US\$ 0.0026
US\$ 1.00 = AMD 377.89

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

APL	Adaptable Program Loan (used also to refer to this Adaptable Program Credit)
ATC	Assessment and Testing Center
CAS	Country Assistance Strategy
CER	Center for Education Reform
CPD	Continuous Professional Development
ECA	Europe and Central Asia
EFMR	Education Financing and Management Reform
EMIS	Education Management Information System
ERC	Education Resource Centers
EQRP	Education Quality and Relevance Project
FM	Financial Management
ICR	Implementation Completion Report
ICT	Information Communication Technology
IDA	International Development Association
IMF	International Monetary Fund
ISR	Implementation Status Report
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
MoES	Ministry of Education and Science
MoF	Ministry of Finance
MTR	Midterm Review
ATS	Assessment and Testing Center
NIE	National Institute of Education
NACET	National Center of Education Technologies
PIU	Project Implementation Unit
PDO	Project Development Objectives
PIRLS	Progress in International Reading Literacy Study
PRSP	Poverty Reduction Strategy Paper
SDR	Special Drawing Rights
SIL	Specific Investment Loan
SLC	School Learning Center
TIMSS	Trends in International Mathematics and Science Study
TPDC	Teacher Professional Development Center
WB	World Bank

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ARMENIA
Education Quality and Relevance Project

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A. Basic Information			
Country:	Armenia	Project Name:	Education Quality & Relevance Project (APL #1)
Project ID:	P074503	L/C/TF Number(s):	IDA-38490
ICR Date:	06/02/2010	ICR Type:	Core ICR
Lending Instrument:	APL	Borrower:	GOVERNMENT OF ARMENIA
Original Total Commitment:	XDR 13.2M	Disbursed Amount:	XDR 13.0M
Revised Amount:	XDR 13.0M		
Environmental Category: C			
Implementing Agencies:			
Ministry of Education and Science			
Center for Education Projects			
National Center for Educational Technologies			
National Institute for Education			
Assessment and Testing Center			
National Employment Service Agency			
Cofinanciers and Other External Partners:			

B. Key Dates				
Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	05/30/2002	Effectiveness:	07/23/2004	07/23/2004
Appraisal:	09/03/2003	Restructuring(s):		11/28/2007
Approval:	01/20/2004	Mid-term Review:	05/31/2006	11/09/2006
		Closing:	11/30/2008	11/30/2009

C. Ratings Summary	
C.1 Performance Rating by ICR	
Outcomes:	Satisfactory
Risk to Development Outcome:	Moderate
Bank Performance:	Satisfactory
Borrower Performance:	Satisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)			
Bank	Ratings	Borrower	Ratings
Quality at Entry:	Satisfactory	Government:	Satisfactory
Quality of Supervision:	Satisfactory	Implementing	Satisfactory

		Agency/Agencies:	
Overall Bank Performance:	Satisfactory	Overall Borrower Performance:	Satisfactory

C.3 Quality at Entry and Implementation Performance Indicators			
Implementation Performance	Indicators	QAG Assessments (if any)	Rating
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	No	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Satisfactory		

D. Sector and Theme Codes		
	Original	Actual
Sector Code (as % of total Bank financing)		
Central government administration	10	10
Compulsory pension and unemployment insurance	7	7
Other social services	3	3
Primary education	40	40
Secondary education	40	40
Theme Code (as % of total Bank financing)		
Education for all	33	33
Education for the knowledge economy	67	67

E. Bank Staff		
Positions	At ICR	At Approval
Vice President:	Philippe H. Le Houerou	Shigeo Katsu
Country Director:	Asad Alam	D-M Dowsett-Coirolo
Sector Manager:	Mamta Murthi	Maureen Anne McLaughlin
Project Team Leader:	Meskerem Mulatu	Tobias Linden
ICR Team Leader:	Zorica Lesic	
ICR Primary Author:	Zorica Lesic	

F. Results Framework Analysis

Project Development Objectives (from Project Appraisal Document)

The Project Development Objective is to improve the quality and relevance of the Armenian school system to meet the challenges of the knowledge society.

The key indicator is that 70% of teachers are engaged in activities likely to develop the necessary knowledge and competencies in their students.

Revised Project Development Objectives (as approved by original approving authority)

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Number of teachers engaged in activities likely to develop the necessary knowledge and competencies in their students			
Value (quantitative or Qualitative)	0 % Note: No baseline assessment was needed considering that for the first year of implementation, the expected figure was 0 percent. (See PAD: arrangements for results monitoring)	70% of teachers are engaged in activities likely to develop the necessary knowledge and competencies in their students.		90% of teachers are engaged in activities likely to develop the necessary knowledge and competencies in their students.
Date achieved	01/01/2004	11/30/2009		11/30/2009
Comments (incl. % achievement)	Over achieved.			

(b) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	New National Curriculum and aligned learning materials being used in a certain number of schools.			
Value (quantitative or Qualitative)	0	New National Curriculum and aligned learning materials being used in 80% of		New National Curriculum and aligned learning materials being used in 100% of

		schools.		schools.
Date achieved	12/18/2003	11/30/2009		11/30/2009
Comments (incl. % achievement)	Over achieved.			
Indicator 2 :	95% of trained teachers understand and accept the rationale for the curriculum and assessment reform.			
Value (quantitative or Qualitative)	10% trained by the National Insitute for Education.	95% of trained teachers understand and accept the rationale for the curriculum and assessment reform.		95% of trained teachers understand and accept the rationale for the curriculum and assessment reform.
Date achieved	12/18/2003	11/30/2009		11/30/2009
Comments (incl. % achievement)	Fully achieved.			
Indicator 3 :	70% of teachers use enhanced classroom-based assessment practices to inform students and parents of learning and progress.			
Value (quantitative or Qualitative)	no use	70% of teachers use enhanced classroom-based assessment practices to inform students and parents of learning and progress.		70% of teachers use enhanced classroom-based assessment practices to inform students and parents of learning and progress.
Date achieved	12/18/2003	11/30/2009		11/30/2009
Comments (incl. % achievement)	Fully achieved.			
Indicator 4 :	Revised examination procedures being used to determine access to higher education, having been piloted, evaluated, and adjustments made accordingly.			
Value (quantitative or Qualitative)	Old examination procedures in place	Revised examination procedures being used to determine access to higher education, having been piloted, evaluated, and adjustments made accordingly.		New school graduation and university entrance unified exams were piloted and gradually introduced in three years period. In 2009 all exams were carried on according to new procedures.
Date achieved	12/18/2003	11/30/2009		11/30/2009
Comments (incl. % achievement)	Fully achieved.			

achievement)				
Indicator 5 :	70% of schools have School Learning Centers (SLC) operating.			
Value (quantitative or Qualitative)	no School Learning Center operating	70%		78.6%
Date achieved	12/18/2003	11/30/2009		11/30/2009
Comments (incl. % achievement)	Fully achieved.			
Indicator 6 :	90% of schools have received SLC hardware from Computer Revolving Fund. and have made payments to CRF on time and in full.			
Value (quantitative or Qualitative)	0%	90% of schools		100%
Date achieved	12/18/2003	11/30/2009		11/30/2009
Comments (incl. % achievement)	Over achieved.			
Indicator 7 :	140 networked schools are using technology effectively.			
Value (quantitative or Qualitative)	0	140		320
Date achieved	12/18/2003	11/30/2009		11/30/2009
Comments (incl. % achievement)	Over achieved.			
Indicator 8 :	30% of teachers are ICT literate.			
Value (quantitative or Qualitative)	0	30%		35 %
Date achieved	12/18/2003	11/30/2009		11/30/2009
Comments (incl. % achievement)	Fully achieved.			
Indicator 9 :	90% of project schools use innovative experimentation of active learning teaching methods.			
Value (quantitative or Qualitative)	0%	90%		95%
Date achieved	12/18/2003	11/30/2009		11/30/2009
Comments (incl. % achievement)	Fully achieved.			
Indicator 10 :	All schools are operating effectively under the new management and financing arrangements.			
Value (quantitative or Qualitative)	0	1,400		All schools (1.427) are operating effectively under

				the new management and financing arrangements.
Date achieved	12/18/2003	11/30/2009		11/30/2009
Comments (incl. % achievement)	Fully achieved.			
Indicator 11 :	Teacher salaries increase in line with MTEF, subject to budget allocations being adequate and percentage spent on non-salary items is according to budget plans.			
Value (quantitative or Qualitative)	AMD 30.951	AMD 55.099		AMD 111.865
Date achieved	12/18/2003	11/30/2009		11/30/2009
Comments (incl. % achievement)	Over achieved.			

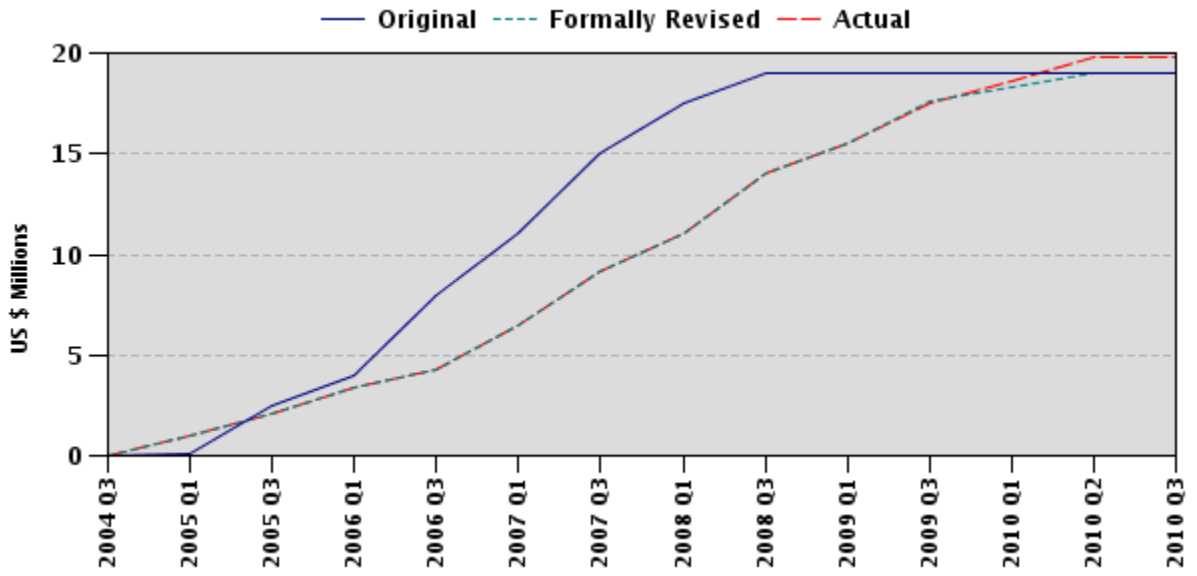
G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	DO	IP	Actual Disbursements (USD millions)
1	06/29/2004	Satisfactory	Satisfactory	0.00
2	12/21/2004	Satisfactory	Satisfactory	1.74
3	03/24/2005	Satisfactory	Satisfactory	2.05
4	07/02/2005	Satisfactory	Satisfactory	2.79
5	12/27/2005	Satisfactory	Moderately Satisfactory	3.82
6	08/23/2006	Moderately Satisfactory	Moderately Satisfactory	5.23
7	12/19/2006	Moderately Satisfactory	Moderately Satisfactory	6.40
8	06/08/2007	Satisfactory	Satisfactory	10.32
9	12/10/2007	Satisfactory	Satisfactory	12.13
10	06/06/2008	Satisfactory	Satisfactory	14.56
11	12/24/2008	Satisfactory	Satisfactory	16.41
12	06/26/2009	Satisfactory	Satisfactory	17.94

H. Restructuring (if any)

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		DO	IP		
11/28/2007		S	S	11.02	

I. Disbursement Profile



1. Project Context, Development Objectives and Design

(this section is descriptive, taken from other documents, e.g., PAD/ISR, not evaluative)

The Education Quality and Relevance Project (EQRP) supported the first phase of the three phases Adaptable Program Loan (APL), supporting the Government's Education Sector Reform Program. It was approved on January 20, 2004. The International Development Association (IDA) Credit was signed on March 24, 2004 and it became effective on July 23, 2004. The project was the second World Bank-financed operation supporting the education sector of Armenia¹.

1.1 Context at Appraisal

At appraisal Armenia ranked in the lower middle-income group of countries. Emigration had reduced its population, which was 3.8 million in the early 1990s, to about 3.1 million in 2003. Because Armenia is small, landlocked and mountainous, with few natural resources, it faced and continues to face economic disadvantages compared with many of its neighbors. Armenia achieved independence from the Soviet Union in 1991, and since then the economy has changed profoundly. The heavy industry collapsed as the Soviet Union broke up, and is gradually being replaced by services, light industry, and construction.

As this economic transformation was taking hold, *GDP growth increased from 3.3 percent in 1999 to 13.9 percent in 2003.* The Government's forceful steps to create a more favorable business environment and improve public institutions helped accelerate growth rates.

While economic growth had been strong, unemployment and poverty remained high because of the incomplete transition to a market economy. For example, investment was low and labor market rigidities remained high.

Armenia had high levels of basic education enrollment at 97 percent in 1999/2000 and it was rated as 'likely' to meet the Millennium Development Goal (MDG) of achieving universal primary education. Upper secondary enrollments (grades 9 and 10) had high enrollment rates (61 percent) compared with other low income countries, but children, especially boys, were dropping out of secondary school. This was and continues to be a particular problem in rural areas and for poorer children. In higher education, enrollment was also high at 38 percent.

The education system did not meet the country's new needs. Armenia's public expenditures on education were very low (among the lowest in the Former Soviet Union),

¹ The first World Bank-financed operation supporting the education sector of Armenia was the Education Financing and Management Reform Project (Credit number IDA-30070), approved in 1998, and closed in 2004.

and available resources were not used efficiently -- for example the school system had not adapted to the decline in Armenia's population since independence, resulting in an excessively high teacher/pupil ratio. Furthermore, the school curriculum was not properly equipping children for the labor market, since the curriculum had not yet been fully revised to meet the needs of a market economy. Facilities were inadequate and teachers were not properly skilled or motivated.

Inputs into the learning process were of generally poor quality. Teachers, the key input, were paid about US\$ 28 per month which was close to the official poverty line. Teachers were using out-dated methodologies and lacked opportunities for professional development. In addition: (i) curricula had only changed marginally since 1991; (ii) linkages to the labor market were weak; (iii) learning materials and equipment were of poor quality or non-existent; (iv) information and communication technology (ICT) was available in only very few schools; and (v) in some regions, the quality of physical infrastructure was poor, partly as a result of the lasting effects of earthquake damage. Poor quality inputs suggested that student learning outcomes were poor, although reliable measures of student achievement did not exist. Labor market outcomes were known to be weak. The poor mostly had low educational attainment, although a relatively high number of persons with higher education were also poor, perhaps reflecting skills mismatches in the changing economic environment.

Starting under the IDA-financed Education Financing and Management Reform (EFMR) project approved in 1998 (Credit number IDA-30070), ***the Government embarked on an extensive program of devolving autonomy to schools.*** Schools were given the ability to manage their own budgets, including retaining any savings. By 2005, all schools had their budgets based on per pupil funding. All school principals, board members and accountants were trained in their new roles by the completion of the 2005/2006 school year. However, because of low budgets and teacher salaries, schools continued to act 'rationally' by maximizing low-cost inputs and employing more teachers rather than buying other inputs. The functions of the Ministry of Education and Science (MoES) and the Regional (Marz) education departments (de-concentrated units of the central ministry) did not move significantly away from a top-down style. Strategic planning and policy analysis were weak. Private providers of education existed mainly at the tertiary level. There were 92 providers of higher education, of which 73 were private, and they accounted for about 50 percent of enrollments. However, the lack of an accreditation or quality assurance system meant that there were widespread concerns about the quality of some providers. State institutions also charged fees; roughly two-thirds of state universities' and half of state colleges' income was generated from this source.

Increasing the level and quality of education was identified in the 2003 Poverty Assessment as a central strategy for poverty reduction, in part through improving the relevance and efficiency of the system. Analytical studies undertaken by the Bank in 2003 identified the critical changes needed to be undertaken in the education system to prepare students for the global knowledge society. The Armenian education system faced a wide array of serious problems in this respect.

Government Strategy

In October 2003 the Government published its Poverty Reduction Strategy Paper (PRSP), which promoted the goals of: (i) reducing poverty; (ii) lowering inequality; and (iii) improving human development. The PRSP emphasized the Government's commitment to equitable growth and sustained poverty reduction across the whole country. Specifically, ***the PRSP identified quality and access to education as a central concern, with the intention to increase educational attainment, raise the completion rate of secondary education and boost teacher salaries.*** The PRSP identified a comprehensive and ambitious agenda for further reforms, which was built into the 2004 CAS (No. 28991-AM).

Through the PRSP process, the Government approved a ten-year Education Sector Reform Program, which the Bank fully supported. ***In support of that program, the Government proposed an ambitious set of reforms*** building on the first World Bank-supported Education Project, which was still under implementation.

Priorities in the general educational system were the increase of salaries and teacher training. Measures undertaken to this end were considered a precondition to increase the quality of educational services. With respect to ***improving quality at the general education level***, the Government paid special attention to improve assets and teaching and learning materials. ***In particular, issues related to the content of education: curriculum, teaching and learning modernization, school library resource upgrading, as well as ensuring the availability of modern information technologies in schools were of high importance.*** The state continued the policy of providing textbooks to children in elementary school. Since the inadequacy of heating systems and building conditions hampered the continuity of the education process, reconstruction and heating were on the list of priorities as well.

The Government was also addressing the low levels of public spending: it had proposed significant, real term increases in spending for each year of the MTEF. In 2004-2015, education expenditures in the consolidated budget were to increase by an average of 13.5 percent per annum in nominal terms, with the biggest increase in the first five years (2004- 2008).

The authorities continued and deepened rationalization measures in the general education sector. The following measures were planned for implementation: (i) increasing pupil/teacher ratio to reach 16 in 2008; (ii) increasing workload of teachers to reach 22 hours per week in 2005; (iii) increasing density of classes; (iv) defining an optimal number of pupils in schools; and (v) merging schools if necessary. These reforms taken together would enable teacher salaries to rise - to the equivalent of US\$ 80 per month in 2005, and ensure an average of 12 percent increase per annum in each of the subsequent program years. Several important reforms in finance and management had begun under the first Bank-supported project. Programs with other international agencies had developed a methodology for teacher training.

Rationale for Bank involvement

The Bank had a successful history of involvement in the sector. The Education Financing and Management Reform (EFMR) credit, which closed in 2004, supported the decentralization of education management and a funding formula for schools. These interventions were extended under this project.

At the time of the April 2001 CAS (No. 22111-AM) discussion, it was anticipated that the International Development Association (the Association) would support a stand-alone Specific Investment Loan (SIL) in the education sector, for a Credit in the amount of US\$10 million equivalent. However, ***in support of the proposed PRSP ambitious set of reforms and building on the ongoing EFMR, the new Project was therefore designed as the first stage of a three-stage Adaptable Program Loan (APL) with an initial Credit of US\$19 million equivalent.***

This Project was designed to support some key elements of the PRSP agenda, by focusing on the quality and relevance of education. The Project encouraged the MoES to focus on policy development in the areas of education quality, teacher education, and inclusive education to promote access to quality education for all children. By the end of the first phase of the program, the MoES was expected to prepare and approve the policies addressing the special education needs, teacher education, school management and inspection services, standards for school libraries, and the national plan for evaluating educational outcomes. Investments in subsequent phases of the APL should implement these reforms.

No other donor was working across the broad range of educational issues being addressed in this project.

1.2 Original Project Development Objectives (PDO) and Key Indicators (as approved)

This four year Project was the first phase of a three-phase Adaptable Program Loan (APL), to support the Government's Education Sector Reform Program.

The Program Objectives and Phases

The Program and Project Development Objectives were similar: to improve the quality and relevance of the Armenian school system to meet the challenges of the knowledge society.

Progress towards this objective was to be measured and monitored based on ***the Project's key indicator***: 70% of teachers are engaged in activities likely to develop the necessary knowledge and competencies in their students.

The triggers from the first to the second phase were as follows:

- Policy for addressing the needs of special education students agreed with the Association and approved by the Government.
- National plan for educational assessment and evaluation agreed with the Association and approved by the Government.
- Minimum standards for school libraries approved by the Government, assessment of current situation in schools with respect to these standards completed, and plan for libraries agreed with the Association and approved by the Government.
- Textbook Revolving Fund cash flow projections for years covered by next phase demonstrate its self-sustainability.
- Comprehensive teacher education and professional development strategy agreed with the Association and approved by the Government.
- Education chapter of PRSP revised to reflect developments during phase 1 of the APL.
- New policy and implementation plan for school management and inspection service agreed with the Association and approved by the Government.

1.3 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification

There were no changes in the Project Development Objective or key indicators during the implementation of the Project. However, in response to a Government request, the Project was restructured in November 2007 to include pre-school and upper secondary school into the overall program, and corresponding output indicators were added to the results monitoring framework.

1.4 Main Beneficiaries

The Project expected to directly or indirectly benefit:

- Pupils– the key beneficiaries and the main target group was the population of students.
- Teachers – the majority of the Project activities involved teachers, making them the second main beneficiary and target group.
- Professional educators – curriculum and syllabi developers, assessment specialists, textbook and education material developers, and teachers’ trainers significantly increased their professional capacity through project activities.

1.5 Original Components (as approved)

The Project had five components:

Component 1: National Curriculum and Assessment System. (Baseline cost US\$ 3.9 million equivalent).

The first component was designed to provide a more relevant and inclusive general education curriculum and a system for evaluating system performance. The component was to finance technical assistance and consultative workshops to develop the national curriculum, new subject syllabi, school based related assessments, and revised entrance procedures for higher education; equipment and training costs to establish the Assessment and Testing Center (ATC) and a Curriculum Development Unit within the Center for Education Reform (CER); training of respective local experts in the MoES, CER and universities; and printing and publishing curriculum and assessment documents.

Component 2: Educational Technologies in Schools. (Baseline cost US\$ 7.9 million equivalent).

The second component was designed to help ensure that schools had the facilities and capacity to integrate a variety of educational technologies as part of teaching and learning. The component was to support establishing and equipping School Learning Centers (computer labs) in about 600 schools in Armenia, in a sustainable way through a Computer Revolving Fund. In addition, the component was to fund an internet connected School Network for about 150 schools; technical assistance to develop educational software and related software operating manuals and teacher training modules; development and maintenance of the educational portal; and establishing of the National Center for Educational Technologies to oversee all education technology activities in Armenia, including the Computer Revolving Fund and contributions from other donors.

Component 3: Teacher Professional Development. (Baseline cost US\$ 4.9 million equivalent).

The third component was designed to enable teachers to understand and implement the new curriculum and assessment techniques in the classroom. The component was to support training teachers to align their teaching to the requirements of the new national curriculum and assessment system; promoting the use of active and skills-based teaching methods in schools; preparing teams of teacher trainers who would be able to serve as teacher development experts in the activities financed by the Project and beyond; and piloting the idea of school-based professional development of teachers, and increasing cooperation and experience sharing among teachers and schools. Training on the new curriculum and assessment tools was to be organized by the Center for Education Reform (CER) facilitated as necessary by international technical assistance. Teachers were also to be trained to use ICTs.

This component was to finance equipping regional training centers of the CER; technical assistance to develop training materials; training of teacher trainers, teachers and school directors; and publishing and printing of pedagogical resources.

The pilot of school-based professional development was to be implemented through grants to approximately 60 schools ('School Centers').

Component 4: System Management and Efficiency. (Baseline cost US\$ 3.6 million equivalent).

The fourth component was designed to help improve the management and efficiency of the education system by financing a package of benefits to approximately 15,000 teachers who would be made redundant as a result of rationalization.

Benefits could include counseling, training, business services, and additional redundancy payments. These activities sought to help the Government meet its efficiency targets specified in the Medium Term Economic Framework. Additionally, this component financed training of school principals, school board members, school accountants, and MoES and other central agency staff in decentralized management and formula funding; EMIS software; and technical assistance for EMIS software development and implementation.

Component 5: Project Management Support. (Baseline cost US\$ 1.4 million equivalent).

The fifth component financed the necessary assistance for project coordination, financial management, procurement, monitoring and reporting. It supported the investment and operating costs associated with the project management unit, Center for Education Projects (CEP).

1.6 Revised Components

The Project was restructured in November 2007. The development objective and related outcome indicator remained the same. The overall project design was maintained, but new activities were included under three of the five components. Financing of the new activities was attained with savings under the Project (see Section 1.7). The following corresponding output indicators were added as a result of the new activities:

- A pilot for the consolidation of upper secondary schools is carried out successfully and the Government obtains relevant evidence for future decision-making in this area.
- “The Strategy for Pre-School Education and early childhood development in Armenia for 2007-2012” is agreed with the Association and approved by the Government; and
- 22 pilot pre-school education projects are implemented successfully in two marzes.

The new project activities included:

- **Under Component 1:** Strengthening institutional capacities of project implementation agencies (National Institute of Education - NIE, Assessment and Testing Center, and National Center for Education Technology - NACET). The Project supported additional capacity development of NIE and NACET staff to carry out monitoring and evaluation of the ongoing reforms. The estimated cost of this additional activity was US\$160,000 equivalent.

- **Under Component 3:** Increasing the training and knowledge-sharing capacities of the 52 School Centers created under the Project. The number of teachers trained in the new curriculum, assessment and teaching methods increased by about 8,000 Foreign Language Teachers. The proposal to include the training of these teachers was a result of the introduction of foreign language as a new subject in the early grades of primary education. The envisaged training for all subject teachers in the new national curriculum was completed in the framework of the Project. The estimated cost for this activity was US\$1.1 million equivalent.
- **Under Component 4:** Two additional activities were added: (i) piloting alternative models for national pre-school education strategy with a view to increase overall enrollment and improve school readiness of 5-6 years old for primary school. The estimated cost of 22 pre-school Pilot Projects was SDR 125,000 (US\$ 190,000 equivalent), and (ii) piloting of consolidation plans for upper secondary schools as a result of the introduced 12-year education structure. The costs included: refurbishment of schools included in the pilot, teachers' training, as well as additional learning and teaching materials for the creation of modern libraries. The pilot was implemented in 10 consolidated upper secondary schools during 2008-2009. The estimated cost of this additional activity was US\$460,000 equivalent.

1.7 Other significant changes

(in design, scope and scale, implementation arrangements and schedule, and funding allocations)

- A new expenditure category entitled: "Grants to Other Educational Institutions" with an allocation of SDR 125,000 (approximately US\$ 190,000 equivalent) was added to the Credit Agreement during the restructuring. This category was used to finance the piloting of alternative models for the national pre-school education.
- Reallocation between expenditure categories to accommodate the proposed changes. The reallocation was also due to savings made under the Project as well as SDR/US\$ exchange rate variations. These saving allowed financing of new activities without any cancelation of the originally planned activities. The majority of reallocated funds were directed to the training of foreign language teachers, and to financing consultancy services.
- The Credit closing date was extended by one year to November 30, 2009 because the implementation of the new activities under the restructured Project required additional time. Specifically, the extension of the Closing Date allowed the Government to conduct the planned pilots for at least one full academic year.

2. Key Factors Affecting Implementation and Outcomes

The Project did not encounter factors that had a significant impact on its implementation and outcomes.

2.1 Project Preparation, Design and Quality at Entry

(including whether lessons of earlier operations were taken into account, risks and their mitigations identified, and adequacy of participatory processes, as applicable)

*The Implementation Completion and Results Report (ICR) team rates project preparation, design and quality at entry as **Satisfactory**.*

The Education Quality and Relevance Project (EQRP) built on a successful entry strategy into the sector, through a well-designed and solidly implemented first education project, the Education Financing and Management Project (EFMP). The Project directly supported some key elements of the PRSP agenda and the Government's ten year Education Sector Reform Program.

The preparation of the EQRP was highly participatory and benefited from the Intensive Learning Implementation Completion Report (ICR) exercise for the EFMP that was undertaken simultaneously with the preparation of this project. The ICR preparation, as well as the preparation of the EQRP included consultation with key beneficiaries (parents, teachers, school principals, school board members, and regional education administrators) and a stakeholder conference where the impact and lessons of the EFMP were explored.

The Project Team identified the main issues in the education sector in Armenia, namely sustainability, and the lack of relevance of education to the knowledge economy. The Project was designed considering evidence from two important analytical reports (*Restructuring to Sustain Universal General Education*, March 2001 and the *Draft Public Expenditure Review for Education*, April 2002). Project design also benefitted from the preparation of the PRSP, also developed in a highly participatory manner. In addition, specific studies, such as the *Poverty Update* and the *Poverty Assessment*, provided important background information for the design of the Project. With the help of these reports, the team was able to develop a comprehensive understanding of the main policy challenges affecting the education sector in Armenia.

The Project also benefited from a Quality Enhancement Review (QER). Comments made by the QER were fully taken into account in the design of the Project. The preparation team comprised a strong Bank team with a good skill mix and a large group of experienced consultants.

There were no co-financiers of the Project. However, the Project was designed taking into consideration other donor activities in Armenia such as: (i) Armenia School Connectivity project financed by US State Department; (ii) Life skills and Pre-school Education project financed by UNICEF; (iii) Civic Education Curriculum Development Project financed by the Open Society Institute (OSI); (iv) Educational Software Development funded by OSI; and (v) Teacher Training Project implemented by the International Research and Exchanges Board (IREX).

The risk assessment assumptions made at appraisal reflected a good understanding of the education sector in Armenia. The team identified well the main risks to the Project

implementation and proposed adequate mitigation measures. The mitigation measures that were identified during project appraisal were appropriate and have been implemented.

2.2 Implementation

(including any project changes/restructuring, mid-term review, Project at Risk status, and actions taken, as applicable)

*The ICR team rates implementation **Satisfactory**.*

The Project was implemented over five years and rated as *satisfactory* through its implementation, with the exception of a period between 2005 and 2006 where it was rated as *marginally satisfactory*. The Project successfully delivered all the planned outputs under the five components and achieved its expected outcome (see details in Annex 2 – Outputs by Component). Project implementation was smooth with disbursements on target (original as well as restructured). The Project was never at risk.

The Project was implemented by the Center for Education Projects (CEP), established in 1996 by the MoES as a unit to manage the previous Bank-financed education project and other small scale projects. The CEP was responsible for coordination, fiduciary management, and project reporting.

In the absence of a centralized management and operational framework in the MoES for administering, coordinating and monitoring donor-financed projects, the establishment of the CEP was essential to ensure the effective implementation of project activities.

The Mid-Term Review (MTR) of the Project was carried out in October 2006. A MTR conference organized by MoES, with the aim of discussing and reviewing Project implementation progress with the Government and other international donors, was successful in engaging all stakeholders, from school teachers to international donors, marz administrators, Ministry officials, and school leaders. The feedback received during the Conference was strategic in setting the directions for future progress of education reform in Armenia. In addition, the MTR conference was a good forum to raise public awareness in relation to the education reforms being implemented in the country without which the planned changes could not reach the anticipated results.

The MTR assessed that: (i) the Project was steadily advancing towards achieving its development objectives, as well as the triggers for the second phase of the APL; and (ii) project components touched on almost every aspect related to the quality of education in Armenia, and they entailed fundamental and sometimes radical change from the education system of the Former Soviet Union regime.

However, starting in 2007 pre-school and high school education reforms became the next big challenges in Armenian education. As such, the Government asked the Association to expand the scope of the Project to cover these areas with the Project savings (about 7 percent of the original estimated Project costs) resulting from: (i) the lower unit prices of computer equipment for the schools procured and delivered through the Revolving Fund; (ii) lower costs of the Teacher Redundancy Program as a result of smaller than expected

number of redundant teachers applying for social assistance; (iii) savings gained under the Project Preparation Facility; and (iv) SDR/US\$ exchange rate variations.

The ongoing reforms in general educations in Armenia needed to be sustained, and in some cases, *second-generation* refinements were called for. The ongoing reforms in curriculum, assessment, teacher professional development and the introduction of ICT, all require a long-term effort to yield the expected outcomes. These reforms were expanded to include Upper Secondary Education and Early Childhood Education. In the former, a proposal was planned to entail the introduction of the 12th grade and the consolidation of high schools, which was to be piloted under the restructured project. As for Early Childhood Education, a national strategy paper to increase access and improve quality of preschools in the country was approved and new approaches to preschool institutions needed to be piloted.

The proposed changes did not have a major effect on the original economic, technical, institutional and social aspects of the project. As for the financial aspects, the introduction of reforms in upper secondary and pre-school education did not have fiscal implications during the project implementation period. However, there was an important fiscal implication for the Government of Armenia beyond the completion of the Project. Increased enrollment of children in pre-school as a result of the scaling-up of the pre-school education reform entailed additional costs to the State Budget. Similarly, a consolidated high school network providing high quality upper secondary education required additional investments and budgetary expenditures.

The proposed changes did not imply changes in the project development objectives or in the expected outcomes of the Project. The proposed additional institutional capacity strengthening of the main implementing agencies fully supports the original project objectives under Component 4.

The proposed changes did not affect the environmental category of the Project or triggered new safeguard policies. The restructuring did not involve any exceptions to the Association policies.

Accordingly, the Project was restructured in November 2007 and the Credit closing date extended by one year to allow the implementation of the new activities.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

*Design, implementation, and utilization of M&E are rated as **Moderately Satisfactory**.*

A monitoring system for each Project component was put in place from the beginning of the Project and functioned effectively throughout project implementation; project indicators were regularly monitored during implementation and reported in the CEP reports, as well as reflected in the Aide Memoires and Implementation Status and Results Reports (ISRs).

However, the Project did not include any independent assessment of outcomes to evaluate what was achieved by the project, especially regarding the quality of teacher training, of teaching materials, the curricula, the effective use of technology, as well as the behavior of teachers regarding private tutoring.

The APL Phase 1 triggers were appropriate in measuring the PDO.

2.4 Safeguard and Fiduciary Compliance

(focusing on issues and their resolution, as applicable)

No safeguards were triggered. The Project was classified as environmental category C.

Financial Management (FM) is rated Satisfactory. As mentioned earlier, the Project was managed by the CEP. The CEP was responsible for FM, including flow of funds, budgeting, accounting, reporting, and disbursements. The CEP had appropriately experienced staff, capable to maintain up to date records and prepare financial management reports on a timely manner. Withdrawal applications were prepared regularly and supporting documentation was complete. Disbursements under the Credit generally happened as planned and the proceeds of the Credit were almost entirely disbursed. The FM arrangements of the CEP were reviewed periodically as a part of project supervision and found, in most cases, satisfactory. The 2006 review of financial management arrangements of the CEP demonstrated that although the financial management system including accounting, budgeting, and reporting was overall strong, there were weaknesses in the internal controls particularly over contracting and payments practices and therefore the FM was rated as *Moderately Satisfactory* at that time. However, the recommendations of the 2006 review were fulfilled and no further problems were observed, thus the FM rating was upgraded to *Satisfactory*. The Project's financial statements were audited on an annual basis by independent auditors and all audit reports were unqualified.

Procurement is rated Satisfactory. Procurement was implemented without major difficulties and its performance was consistently rated *Satisfactory*. Procurement activities performed under the Project were done in accordance with agreed procurement methods and were considered of satisfactory quality during implementation.

2.5 Post-completion Operation/Next Phase

(including transition arrangement to post-completion operation of investments financed by present operation, Operation & Maintenance arrangements, sustaining reforms and institutional capacity, and next phase/follow-up operation, if applicable)

Support to the education sector is continuing through Phase 2 of the APL approved in April 2009 (Credit number 4565 AM), and effective in October 2009.

Education has been a priority sector for public investment in Armenia since the late 1990s. In addition, the Government has made a concerted effort to allocate more funds to general secondary education, in particular to improve access to and quality of education at this level. The education sector is currently prioritized by the Armenian Government as one of the prerequisites of sustained development of the country as well as

preservation and reproduction of human capital. Reform projects at all levels of the education system are being implemented to ensure universally accessible quality education and to increase its efficiency. The national Strategy for Pre-school Education (2008), the High School Reform Program (2008), and the signing of the Bologna declaration (2005) are three policies that highlight Armenia's commitment to a profound modernization of the education system.

The original APL framework was for a 10-year program, divided into three phases. Because of the strong performance under the EQRP (APL 1) and clear reform direction for the next five years, it was decided to merge the two subsequent phases (APL 2 and APL 3) into a single five year second phase operation. By January 2009, all seven triggers leading to the second phase of the APL had been met. More significantly, four out of five triggers established for the transition from the second to the third phase had also been fully met.

The second phase of the APL will continue to focus on the reform of the general secondary education system. In doing so, it will also address key policy issues in both higher education and pre-school education that are intimately related to those reforms. The high-school reform approved in 2008 is expected to create a more diversified upper secondary education, which in turn would also demand a more diversified tertiary education system, both with regard to institutions and specific study programs.

Many activities supported by the Project have been institutionalized, as discussed in Section 3.5.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

(to current country and global priorities, and Bank assistance strategy)

The Project objectives of improving the quality and relevance of the Armenian school system to meet the challenges of the knowledge society were and remain highly relevant and consistent with the country's development priorities specified in 2003 Poverty Reduction Strategy Paper (PRSP) and the follow-up 2008 PRSP, the Bank's education strategy, the Country Assistance Strategy (CAS) approved in 2004, the Sustainable Development Program (SDP) approved in 2008, as well as national Strategy for Pre-school Education and the High School Reform Program (adopted by the Government in 2008).

As indicated elsewhere in this report, at the time of project design and given the scope and expected pace of implementation of education reforms, a three-phase APL approach was the most appropriate instrument to ensure achievement of the Program development objectives and its long-term sustainability. However, because of (i) the strong performance under APL I; (ii) a clear reform direction for the next five years including adoption of the National Strategy for Pre-school Education and the High School Reform Program in 2008, which are highly relevant to ensure a comprehensive sector reform; and

(iii) early than expected fulfillment of triggers to transition from the second to the third phase, it was agreed to merge APL II and APL III into a 5-year APL II.

3.2 Achievement of Project Development Objectives

(including brief discussion of causal linkages between outputs and outcomes, with details on outputs in Annex 2)

The achievement of the PDO is rated as *Satisfactory*. Based on actual number of teachers trained, the Project over achieved its single outcome indicator -- share of teachers engaged in activities likely to develop the necessary knowledge and competencies in their students. The end of project target for this indicator was 70 percent, but the Project significantly exceeded its target and by project closing **90 percent of teachers had been trained**. However, given that an independent assessment of the quality of training provided to teachers was not conducted, nor an evaluation to determine if overall classroom practices had changed, it is difficult to assess the extent to which this training strengthened the abilities of teachers to develop the necessary knowledge and competences in their students.

Given the fact that the Project only had one outcome indicator, the ICR team also reviewed the intermediate indicators to get a better sense of project performance. Based on Borrower's reports, ISRs and several visits to schools, the ICR team confirms that every single intermediate indicator was met or achieved, as listed in the Project's datasheet. At the same time, as stated above, there was no impact evaluation on these interventions to determine if and how they impacted classroom practices and if they led to the acquisition of new knowledge and competences among students.

For example, the original target for indicator # 1 was 80 percent of schools using the New National Curriculum and with aligned learning materials. By project closing, 100 percent of the schools had met that indicator. Indeed the curriculum has been changed and modernized and it is broadly used. However, the effectiveness of the new curriculum remains to be assessed.

Other example is indicator # 7 that has been nominally overachieved: "320 schools are using technology effectively" (the initial target was 140). In fact, this indicator was monitoring the number of school connected to the internet, not how the technology was being used. During the school visits, there was evidence that computer labs were not so intensively used by students -- at least not so intensively to conclude that these schools "use technology effectively."

The final example, indicator # 11 on teacher salaries, increased twice more than planned, as a result of teacher optimization. Again, the indicator has been overachieved, but as with the previous two examples, there is no evidence of change in teacher behavior and professional attitude as a result of salary increases. Furthermore, despite the lack of evidence, the perception on the ground is that the private tutoring is continuing and out-of-pocket payments by families continue to be a burden -- especially for the poor.

3.3 Efficiency

(Net Present Value/Economic Rate of Return, cost effectiveness, e.g., unit rate norms, least cost, and comparisons; and Financial Rate of Return)

An economic analysis of the Project was not carried out for this ICR. However, in trying to identify efficiency contributions of the Project, the team considered the Economic and Financial Analysis of the follow-up project, which examined (i) cost-effectiveness of investing in pre-school education; (ii) cost-effectiveness of investing in ICT and its integration in the teaching and learning process; and (iii) cost-efficiency and quality improvement of high school reform.

(i) Benefits of investing in preschool education

International evidence indicates that the lack of access to pre-school is detrimental to the school readiness of children, as measured by their capacity (i) to learn in Grade 1 and beyond, (ii) to transition successfully from one grade to another, (iii) to complete their education, and (iv) to eventually become fully contributing and productive members of society. In Armenia, while official statistics show a relatively low level of school repetitions and dropouts, the number of primary level dropouts has sharply increased in the recent past (at an average annual growth rate of 250 percent), and there is evidence of significant school wastage, particularly in relation to absenteeism and automatic promotion without any form of remedial education. Poor and falling access to preschool education is likely to be a cause of this deterioration.

In response to this critical situation, the Government's pre-school strategy aims to increase the enrollment rates of pre-school age children (ages 4 to 6) up to 90 percent by 2015. Under the APL I, the Government piloted a pre-school project that provided grants to 22 communities in Lori and Shirak Marzs to establish a pre-school section in existing schools or independent kindergartens.

(ii) Cost-effectiveness of investing in ICT network and its integration in the teaching and learning process

The provision of Internet connectivity is an important element of a long-term vision to accelerate and sustain the growth of the ICT industry in Armenia and, more broadly, "to position Armenia in the knowledge-based global economy."² Extending connectivity to remote schools in Armenia is expected to help the Government meet this goal, in addition to fulfilling pledges to provide equal access to information. The positive impact of ICT use in education on student achievement is more likely to be observed when ICTs are used appropriately to complement a teacher's adoption of active methodologies.

International evidence suggests that school principals' support for ICTs—who could be strong obstacles to the introduction of ICTs, especially in remote areas—is crucial to promote the effective use of ICTs in school. By providing a computer for the EMIS and

² One of the two main goals of the government's *ICT Master Strategy*.

administrative purposes and relevant training, the Project is contributing to generate their support and give them an opportunity to appreciate the effectiveness of ICTs.

Under the APL I, the Government begun: (i) extending the Internet connectivity to remote schools (currently 644 schools are included in the School Network), (ii) developing high-quality and relevant electronic materials, and (iii) providing computer equipment to be exclusively used for EMIS-related school administration.

(iii) Cost-efficiency and quality improvement of high school reform

The high-school reform, approved in 2008 is expected to create a more diversified upper secondary education which, in turn, would also demand a more diversified tertiary education system, both with regard to institutions and specific study programs. Upper secondary students will be provided with new opportunities for more advanced study of Mathematics, Languages and Sciences thanks to the introduction of new streams in the curriculum. There will be a new learning environment with new technologies and modern laboratories, in the hands of better trained and more motivated teachers.

The enhanced quality of education in upper secondary and in-depth study of subjects by choices would positively affect on early orientation of high school students for making the best possible decision on future specialization. Admission decisions on the part of universities could therefore be better informed.

Financing reforms started under the Education Financing and Management Reform project and implemented under the APL I in general secondary education have boosted efficiency at the school level and enhanced school autonomy. Largely due to the introduction of the per capita financing scheme accompanied by financial autonomy at the school level, the majority of general secondary schools have consolidated classes to the extent possible and there is little room for further efficiency gains at the school level.

The role and the capacity of School Boards as key accountability instruments was strengthened under the Project and allowed, among other things, to directly tackle corruption practices in general schools. Moreover, the high schools pilot, financed by the Project in 10 schools, have already made a difference in terms of reducing private tutoring at that level and all the dubious practices associated to that phenomenon.

3.4 Justification of Overall Outcome Rating

(combining relevance, achievement of PDOs, and efficiency)

Rating: *Satisfactory*

The overall outcome is rated satisfactory for the following reasons. First, at the time of design the Project was highly relevant in terms of country priorities, supporting the Government's overall strategy and consistent with the objectives and the CAS. The Project was also consistent and supportive of the PRSP's goals. Additionally, the Project has maintained high strategic and substantive relevance throughout implementation, particularly during the recent and current economic crisis context. Third, the Project has contributed to institutional capacity building. Finally, the Project achieved its single outcome indicator, as well as all of its intermediate indicators.

3.5 Overarching Themes, Other Outcomes and Impacts

(if any, where not previously covered or to amplify discussion above)

(a) Poverty Impacts, Gender Aspects, and Social Development

Data to monitor the Project's impact on poverty and gender were not collected; therefore it is difficult to make verifiable conclusions on poverty and gender impacts of the Project.

The Project was effective in reaching the intended Project beneficiaries such as pupils, teachers and educational professionals.

During the implementation of the Project, good progress was made through sizeable investments in badly needed physical infrastructure, putting educational technology in schools, and preparing the basis for key reforms focusing on the quality of education. As a result of these efforts, the student-teacher ratio increased from 10.8 in 2003 to 14.5 in 2009, the enrollment rate for compulsory education increased from 84.5 in 2001 to 89.5 in 2008 and the literacy rate is almost 100 percent, irrespective of gender and ethnicity.

(b) Institutional Change/Strengthening

(particularly with reference to impacts on longer-term capacity and institutional development)

The Project focused on strengthening the existing education institutions and creating new capacities to plan, implement and monitor the education reforms. The Project succeeded in assisting the Government of Armenia in the following manner: (i) the development of the National Curriculum Framework, standards and syllabi and implementation of the new curriculum up to 9th grade; (ii) the creation of the Assessment and Testing Center (ATC) and the introduction of a transparent examination system and enhanced capacity to assess student performance; (iii) the establishment of the National Center of Education Technology (NACET) and the creation of school learning centers through an effective Computer Revolving scheme; (iv) a massive and significant in-service teacher training effort was carried out through the improved National Institute of Education and the network of 52 school-centers selected and strengthened within the Project; and (v) consolidation of a successful per capita funding system resulting in substantial efficiency gains, increased student-teacher ratios, and enhanced school autonomy.

(c) Other Unintended Outcomes and Impacts (positive or negative)

At the general secondary education level, Armenia's national 8th and 10th grade examinations still have not produced reliable indicators to measure students' performance. However, the results of TIMSS 2007 (Trends in International Mathematics and Science Study -4th and 8th grade student achievement in Math and Science) clearly show that the quality of the education system has improved significantly over the past four years. In fact, *Armenia is the only ECA country that obtained significantly better scores in all four categories in comparison to the results of 2003.* APL I can legitimately take some credit for these results, as it directly supported the curriculum reform, and financed a substantial amount of training for master trainers of secondary teachers of Mathematics and Science teachers.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

(optional for Core ICR, required for ILI, details in annexes)

Not applicable.

4. Assessment of Risk to Development Outcome

Rating: *Moderate*

Armenia needs to strengthen the knowledge base and skills of its human capital. This is an especially important dimension of the country's long-term competitiveness strategy. Therefore, there is strong evidence that the Project's support to modernize the education system will continue to be Armenia's medium and long-term development goal.

The Government has boosted public expenditure on education in recent years, and is committed to further increase it in the next decade. In its first PRSP in 2003, the Government planned to boost public education spending to 4 percent of GDP by 2015, as an important pillar of its poverty reduction strategy. Indeed, between 2003 and 2008, the consolidated budget for education had a 20 percent annual increase from AMD 35 billion (US\$61 million) to AMD 111 billion (US\$362 million). In particular, the Government has made a concerted effort to allocate more resources to general secondary education to improve access to and quality of education at this level. The second PRSP, prepared in 2008, aimed to raise education spending further, up to 4.5 percent of GDP by 2021.

The downturn in the economy anticipated in 2010 triggered by the global financial crisis is expected to have implications for the budget of Armenia and how much will be allocated Education spending. The Government, however, has committed to continuing to make education a priority and making high school reform in particular a priority, as it is a key to future competitiveness.

5. Assessment of Bank and Borrower Performance

(relating to design, implementation and outcome issues)

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry

(i.e., performance through lending phase)

Rating: *Satisfactory*

The ICR author rates IDA's performance in ensuring quality at entry as *Satisfactory*, based on the following strengths: (i) consistency with the objectives of the CAS, poverty assessment, and Government's priorities for the education sector; (ii) incorporation of experience and lessons gained from the previous IDA-financed education project; (iii) factoring stakeholder views into the definition of priorities and the details of project design; (iv) assessing risks realistically and including strong mitigating measures in project design; and (v) ensuring implementation capacity of the institutions involved.

The Association's team was strong and had the appropriate skills mix. The thorough preparation process with extensive discussions and workshops contributed to fostering and strengthening the ownership of the Government.

(b) Quality of Supervision

(including of fiduciary and safeguards policies)

Rating: *Satisfactory*

The Association's performance during implementation is rated as *Satisfactory*. During Project supervision, the team provided good guidance to assure smooth implementation of activities, including maintaining a strong and open policy dialogue in the education sector. The team provided technical advice in an effective and timely fashion.

Supervision inputs and processes were adequate. Regular procurement and financial management reviews were carried out. There was adequate support from the Association's procurement and financial management specialists, which resulted in quick turnaround time and responses to no objection requests and other procurement matters. The implementation reviews provided detailed assessment of project progress and useful recommended actions.

The Mid-term Review (MTR) was instrumental in taking stock of progress, and most of the recommendations made during the MTR addressed the long-term sustainability issues and the overall education reform agenda.

(c) Justification of Rating for Overall Bank Performance

Rating: *Satisfactory*

The team provided technical advice in an effective and timely fashion. The quality of technical advice during project preparation and implementation was high, the turn-around times and responsiveness to client's request adequate, and the overall support appreciated by the client. Therefore, the ICR's assessment of the overall IDA performance is rated as *Satisfactory*.

5.2 Borrower Performance

(a) Government Performance

Rating: *Satisfactory*

The overall Government performance is considered *Satisfactory*. The Project was an integral part of the Government's vision and reform agenda. The Government demonstrated its full commitment to the Program's objectives by actively participating during Project preparation, continuously supporting ongoing activities and ensuring availability of counterpart financing.

Despite changes of Ministers, the Ministry did not change the course of the ongoing reform activities, and provided technical staff with the space and continuity to implement the Project.

(b) Implementing Agency or Agencies Performance

Rating: *Satisfactory*

The performance of the Center for Education Projects (CEP) is assessed as *Satisfactory*.

The CEP coordinated the implementation of the Project in a professional and timely manner. The director and staff responsible for each component as well as key personnel remained in the same position from project preparation through completion, contributing to continuity of the reform and strong ownership of the Project. The CEP provided focused support, facilitated coordination effectively and provided effective communication between IDA and Project Implementing Institutions (National Institute of Education, Assessment and Testing Center, and National Center for Education Technology, National Employment Service, Social Insurance State Fund, School-Centers) involved in the Project.

Procurement activities under the Project were done in accordance with agreed procurement methods and were of satisfactory quality throughout implementation.

The periodical reviews of financial management arrangements demonstrated that although the financial management system including accounting, budgeting, and reporting was overall strong, there were weaknesses in the internal controls particularly over contracting and payments practices in 2006.

(c) Justification of Rating for Overall Borrower Performance

Rating: *Satisfactory*

Overall, the performance of the borrower is rated as *satisfactory*. As mentioned, the strong ownership of the Government was exemplary. In addition, the MoES through CEP implemented the Project in a professional and timely manner.

6. Lessons Learned

(both project-specific and of wide general application)

Reflecting on the overall project implementation and achievements of the PDO, the key lessons that have been learned and/or reinforced during project implementation are as follows:

- Despite changes of Ministers, continuity and commitment of senior level Ministry officials during the Project's life are the key to the smooth project implementation, and therefore to the overall project success.
- Achieving public consensus on reform issues by sharing with the public the work accomplished and conducting open discussions on issues affecting beneficiaries are essential for building ownership and commitment to reforms and developing the culture of accountability. In particular, when big changes are expected.

- Good analytical work to inform project design, competent technical assistance as well as envisaging adequate time for the education system to accept changes and innovations (and for preparing it to the changes) at the initial stage are crucial when fundamental reforms are expected.
- Providing continuous guidance in the context of an ambitious reform agenda is essential. IDA supervision must be continuous and intensive. Proactive and timely monitoring and support by the Bank’s team are crucial for Project success.
- In order to get a “story behind the numbers,” projects should include an impact evaluation or at least an independent assessment of outcome indicators to evaluate the *quality* of training provided by the project, *behavioral changes* of teachers and *effective* use of technology.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies

The ICR was reviewed and commented by the Ministry of Education and Science (May 2010) and the Center for Education Projects (April 2010). Their full assessment of the Project’s impact as well as detailed comments to this document are included in Annex 7.

The Government made two comments on the ICR:

- **First, they believed the Project’s outcome rating should have been *Highly Satisfactory*, rather than *Satisfactory*, as assessed by the Association.** The higher rating is justified by the Project having over-achieved its single outcome indicator as well as achieved or exceeded its intermediate indicators. Additionally, the time period between the activities being implemented (2006-2007) and the Project’s closing date was too short for one to observe significant changes at the classroom level, particularly as these changes are slow to occur. While the ICR team agrees with these points, in the absence of an impact evaluation of teacher training or an equivalent rigorous study of the impact of the interventions in “improving the quality and relevance of the Armenian school system to meet the challenges of the knowledge society,” a *Satisfactory* rating was assigned.
- **Second, they believed that the Project’s Monitoring and Evaluation should have been rated higher than *Moderately Satisfactory*.** Indeed there were numerous studies carried out under the Project in an attempt to measure the impact of its interventions. While the ICR team recognizes the Government’s effort in monitoring project implementation, a review of those studies shows that they are more oriented to processes (i.e. measuring inputs) than to the outcomes and a more comprehensive evaluation of project outcomes was lacking.

Finally, another point raised by the Government was **the negative impact of the high turnover of task team leaders on the Association’s side** during the initial years of implementation. While there were three task team leaders (TTLs) assigned to this project,

including the one responsible for project preparation, the second TTL stayed for a very brief time while the third one stayed for most of the implementation period. Nonetheless, as continuity in team leadership is normally helpful for implementation, the ICR team notes this point.

(b) Cofinanciers

Not applicable.

(c) Other partners and stakeholders
(*e.g. NGOs/private sector/civil society*)

Not applicable.

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent)

Components	Appraisal Estimate (USD millions)	Actual Estimate (USD millions)	Percentage of Appraisal
NATIONAL CURRICULUM AND ASSESSMENT SYSTEM	3.90	3.00	77%
SCHOOL EDUCATIONAL TECHNOLOGIES	7.90	6.40	81%
TEACHER PROFESSIONAL DEVELOPMENT	4.90	6.00	122%
SYSTEM MANAGEMENT AND EFFICIENCY	3.60	3.10	86%
PROJECT MANAGEMENT	1.40	2.10	150%
Total Project Costs	21.70	20.60	95%

(b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (USD millions)	Actual Estimate (USD millions)	Percentage of Appraisal
Borrower		2.70	0.70	26
International Development Association (IDA)		19.00	19.90	105
Total Project Costs		21.70	20.60	95%

Annex 2. Outputs by Component

Component 1: National Curriculum and Assessment System (actual cost US\$ 3.00 million equivalent, 77 percent of appraisal estimate)

The objective of the Curriculum and Assessment component was to align the content of general education to deliver a high quality and relevant education to all students in Armenia. The objective of the component was fully achieved as evidenced by:

- Over achieved output indicator 1: New National Curriculum Framework as well as Subject Standards and Syllabi for all subjects and grades with supporting textbooks and teacher guides are produced and provided to every school in the country. Teaching in *all* schools is conducted with new curriculum and learning materials.
- Fully achieved output indicators 2: 95% of trained teachers understand and accept the rationale of the reform of the curriculum and assessment.
- Fully achieved output indicator 3: 70 % of teachers use enhanced classroom-based assessment practices to inform students and parents of learning and progress.
- Fully achieved output indicator 4: New school graduation and university entrance unified exams were piloted and gradually introduced in three years period. In 2009 *all exams were carried on according to new procedures.*
- Over achieved output indicator 8: 35% of teachers are ICT literate.
- Over achieved output indicator 9: 95% of project schools use innovative experimentation of active learning teaching methods.

a) National Curriculum

During 2003-04 new ***National Curriculum Framework*** (NCF) and ***State Standards for General Education*** (SSGE) were developed, widely discussed, agreed with specialists and key stakeholders and formally adopted by the Government. Two important aspects in regard to NCF and SSGE should be highlighted: the process and the outcome.

The process of creating these documents was a real collaborative and cooperative work. The working group consisting of 18 specialists, during almost one year, demonstrated an exceptional example of a group work. Professionals, with different backgrounds (school teachers, university lecturers, researchers and methodology specialists) and having almost opposite views on curriculum design at the beginning of the work, were able to produce a well-structured document. The *public discussion* of the NCF and SSGE was a “grass root” activity involving the whole country - schools, universities, principles, teachers, parents, interested government entities, nongovernmental organizations and general public. The important suggestions were incorporated in the documents. Finally, the NCF working group members participated in TV and radio programs, talk shows, as well as in local newsletters clarifying different aspects of the documents.

The *outcome* of the work was also significant. The developed NCF and SSGE documents have comprehensive, all inclusive content and original structure. NCF enabled the shift to 12-year general education. The general educational content was newly defined in NCF

and educational components were clarified. The educational content was defined not in separate subjects as it used to be in Soviet times but in educational areas. Therefore, NCF has ensured horizontal and vertical integration between individual subjects into broader learning areas.

Another new aspect of the NCF was the *use of ICT*. The requirement of wide use of ICT both as an individual learning area starting from grade 6 of the secondary school (instead of grade 9 of high school according to the old curriculum) and as a new teaching/learning tool in other areas was set up in the NCF. The NCF also promotes student-centered interactive teaching methods.

Since 2004, after approval of NCF, elaboration, piloting and introduction of individual *subject syllabi and subject standards* in schools have started. By November 2005 syllabuses of Armenian Language and Literature, Mathematics and ICT for 12-year school were developed, critically reviewed by relevant specialists, piloted in 52 school-centers, revised based on the results of pilot and expertise and approved by the MoES. Based on these standards and syllabi, the Textbook Revolving Fund (TRF) competitively selected *new textbooks and teachers' manuals* which *were published and distributed to schools*.

The introduction of new curriculum in high school has started in the school year 2009-2010 parallel to the creation of high schools. Until 2000, the general secondary education system in Armenia consisted of eight years of compulsory basic education (three years of primary and five years of lower secondary) and two years of upper secondary education. From 2001, the 11-year general secondary education system was introduced in order to provide a smooth transition to the 12-year system. Therefore there were two curriculums in use at the same time, the 10-year and the 11-year. In the 2006/2007 academic year the MoES started to *transfer to a 12-year school* system (grades 1-4 for primary and grade 5-9 for lower secondary) and three years of upper secondary education (grades 10-12), which was one key element of the Government reforms and National Curriculum Framework.

b) Assessment and Examination

The main objective of the Assessment and Examination sub-component was to (i) develop a national policy for evaluating educational outcomes; (ii) develop an examination at the end of secondary education (*Matura*); (iii) build the capacity of the Ministry to analyze assessment data for policy-making; (iv) help teachers to use classroom-based assessments, and (v) participate in the next round of TIMSS in 2007.

New assessment goals and principles were developed by the NCF working group and included in NCF document. This was the first time an attempt was made to reinforce close links between curriculum and assessment. New assessment goals were designed to develop and measure students' knowledge and competencies, as well as performance of the schools and the entire system for the new society and modern economy.

One of the Project's objectives and effectiveness conditions was the **creation of the Assessment and Testing Center (ATC)**. The ATC was created in April 14, 2004 as a separate institution under supervision of the MoES with the legal status of state non-profit organization. In 2004 the Director of ATC was appointed. During 2005 the ATC, through project funds, was provided with a set of optical and computer equipment required for conducting new exams and two vehicles. The reconstruction of the building was completed in December 2006. The furniture was supplied to the ATC in November 2006, and the computer equipment was delivered to the ATC in May 2007. The printing equipment was also procured through the Project. It was supplied and installed in ATC in September 2008. Currently, ATC is a well functioning institution, fully refurbished and equipped with modern equipment. It has nine administrative divisions and 70 staff members. Since 2009 ATC has been fully in charge of preparing and carrying out unified school graduation and university entrance examinations.

Since 2004, the **development of Secondary School graduation tests and Higher Education Institutions entrance exam specifications and test items for 10 core subjects** (Armenian language, Mathematics, Physics, Chemistry, Biology, Geography, History, Russian, English, and French) **has been started**. The test development was carried by 10 subject working groups composed of school teachers, university lecturers and other education specialists. In eight months, all 10 subject groups produced sample tests, which included multiple choice, binary (true/false, yes/no), open-ended, and short-answer type questions. These tests were pre-tested and analyzed for the level of difficulty and discrimination index of each item, distribution of scores and tables with descriptive statistics were produced. The development of tests for 10 different subjects was a full-size effort of 45 people. Given that national experts were lacking knowledge, skills and experience in item construction and test theory at the beginning of the process, but were able to produce tests at internationally acceptable standards in such a short time period, the results can be assessed as really significant. It was the first time in Armenia that the culture of test construction and the understanding of test theory were introduced.

In parallel with the works on establishing the ATC and developing new generation tests, the MoES was heavily engaged in finalizing the overall government policy and detailing procedures for: (i) formative, continuous assessment of learners; (ii) public examinations for graduation at each level of education and (iii) entrance to higher education institutions. During 2004 the **Education Assessment Policy Paper was developed**, discussed with education field specialists and key stakeholders, and eventually by the Government in 2005. The Assessment Policy Paper was published in the form of a small booklet and 2,000 copies were distributed to schools and other educational institutions. A new assessment policy paper suggested using unified exams model (school *Matura* and HEI competition entrance) as practiced in different countries to ensure equal conditions for the applicants taking exams in the selected localities all over the Republic.

The introduction of the new unified exams was carried out gradually during a three year period. The first examination for *Armenian Language and Literature* took place on June 1, 2007. In 2008 the number of examined subjects according to new procedures was extended. Exams took place during June 2-18, 2008 for the following subjects: Armenian Language and Literature, Russian Language, Mathematics, and Foreign Languages

(English, French, and German). The unified examination is now embedded in the system and scaled to twelve subjects in 2009: Armenian Language and Literature, Mathematics, English, French, German, Russian, Biology, Chemistry, Physics, Geography, Armenian History, and World History.

Since 2005 MoES initiated the *development of the continuous, formative, classroom-based assessment strategy* as well as assessment materials and test items for classroom use. To accomplish this task a working group was created in October 2005, which drafted the guidelines “*Concept on Students Continuous Assessment: General Statement, Basic Approaches.*” The draft paper was approved by the MoES in January 2007 and piloted in 4 schools. During the academic year 2007/2008 the pilot was extended to 10 more schools. Additionally, several schools piloted the paper on a voluntary basis. The last version of the “*Concept of Students Continuous Assessment: General Statement, Basic Approaches*” was approved by the MoES in August 2008, and has been in use in schools since September 2008. One component of the Concept, the 10-scale scoring system, was introduced compulsorily in all schools in Armenia.

Armenia participated in the International Mathematics and Science Study (TIMSS) for the first time in 2003. This was a major step enabling country to provide internationally comparable evidence of students’ achievement and use results as a basis for policy dialogue. The TIMSS 2003 National Report was prepared, published and distributed to all participated schools, Marz Education Departments, and the MoES. Armenia results included in the International Report were discussed at the MoES and MEDs seminars for schools. The TIMSS 2007 field test was conducted in 35 schools of Armenia in 2006. The administration of TIMSS 2007, data entry, analysis and preparation of report was contracted to National Institute of Education. The ***TIMSS 2007 Main Survey took place in May 2007 in 150 Secondary Schools of Armenia.*** The results in 4th and 8th Grade Mathematics were stunning, while those for Science were just acceptable. The overall score in 8th grade Math was 499, right in between the intermediate and high international benchmark and, to give a comparative reference, better than the results of Italy, Scotland, Australia or Sweden. Even more importantly, Armenia was the only ECA country that obtained significantly better scores in all four categories in comparison to the results of 2003. The Project can legitimately take some credit for these results, as the effort carried out under the project in curriculum reform and in training master trainers and primary and secondary teachers of Math was considerable. The MoE created a TIMSS Unit at the Assessment and Testing Center and allocated funds in the 2009 and 2010 national budget to cover Armenia’s participation fees in the next administration of the Test. This is good evidence of the commitment and ownership with one of the crucial interventions supported by the Project.

Although the actual cost of the Component 1 was only 77 percent of estimated cost, all originally planned activities, as well as activities added at restructuring were implemented. The cost under run was due to the savings gained under the Project Preparation Facility, as well as favorable exchange rate SDR/US\$ and US\$/AMD.

Component 2: ICT in Education (actual cost US\$ 6.4 million equivalent, 81 percent of appraisal estimate)

The main objective of this component was to incorporate ICT in the learning and teaching process, so as to improve student learning outcomes through the use of ICT and increase the quality, effectiveness and efficiency of teachers and schools. The objective of the component was fully achieved as evidenced by:

- Over achieved output indicator 5: *78.6 % of schools (1,153 schools) had received hardware (against the target 70%). About 6,000 computers were provided to all schools included in the CRS.*
- Over achieved output indicator 6: every school that received SLC hardware from CRS have made payments to CRS. *The overall repayment collection rate was 95.8 percent (against the target 90 percent).* The collected amount is about US\$1.6 million, which is a remarkable achievement in itself, especially considering the social level of the population.

The School Learning Centers (SLCs) were created as computerized classrooms, containing a wide range of media and relevant, stimulating, well-designed information materials. Provision of hardware to the SLCs was the first activity under the ICT component that was implemented through five stages during project implementation.

The *Computer Revolving Scheme (CRS)* was introduced in 2004. The main objectives of the CRS were (i) to provide equal opportunities to all schools in having access to computers and other accompanying hardware; (ii) to make available computers and other hardware at the lowest possible cost to schools/parents by making them available on interest-free credit terms; and (iii) to create sustainable funding in order to be able to replace computers at the end of their useful life. At the design stage, the CRS implied establishing School Learning Centers in the majority of Armenian schools during a five year period and providing the hardware/software to the schools on five year interest-free credit terms. It was planned that schools would fully repay the hardware/software cost to the CRS bank account in that period. The annual credit payments collected from schools would be used for provision of additional hardware to schools or replacement their outdated ones after the five year period. In order to repay the hardware credit, the school was free to collect per student credit repayment fee or obtain the funds from other sources, i.e. sponsors, school budgets, etc.

The experience of the first year of running CRS indicated that the set repayment targets were high and therefore unrealistic. 100% cost recovery of the computer equipment and self-sustainability scenario was too ambitious to realize in the real life. Right at the outset, it became clear that the vast majority of schools were not able to order their predetermined quantities necessary for ensuring full-range ICT-learning due to bad social conditions of their communities and low credit repayment power. Schools were facing difficulties in paying against even significantly decreased quantities of equipment. Thus, in order to make CRF attractive to schools the CRF was modified in a way that schools receive the hardware on more favorable terms, i.e. with a significant discount.

So, the low enrollment rates in the first year of Scheme's operation become a ground for modification of the Scheme. First of all, a slight proportionate decrease to previously estimated equipment quantities for schools of different sizes has been applied to ensure affordability of hardware/software to schools. The second and most important change was significant reduction of the equipment cost to schools. The new procedure implied provision of computer hardware/software to schools on two-year interest-free credit terms at just 30% of the equipment's purchase price plus 20% VAT, which comes to about 41.67% of VAT-included price. The modification to the Scheme was applied to the schools that have already been enrolled in the CRS as well.

The ***collection of repayment fees*** was quite difficult process but challenging task. ***The overall collection rate was 95.8% (against the target 90 %).*** The collected amount was about 1.060.425 USD, which was a remarkable achievement, especially if the social level of the population is considered

One of the main objectives of the ICT component was ***to create a professional institution --“National Center of Educational Technologies” (NACET) - in charge of all ICT activities in the field of education.*** This was also a project effectiveness condition.

The NACET was founded in 2004 by a Government decision as a state non-profit organization under the supervision of the MoES. The NACET is in charge of incorporating ICT in schools, particularly furnishing schools with modern computer equipment, schools networking, and training of teachers in ICT usage. NACET is also in charge of coordinating the work of local and international organizations and NGOs in the field of ICT.

One of the key activities planned under the ICT component of the Project was ***school networking and provision of Internet for 140 schools.*** However, this activity was delayed due agreed restrictions for payments against expenditures for IT networking as specified in the Development Credit Agreement (DCA). Section 3(b), Schedule 1 of Credit Agreement stated: ***“no withdrawals shall be made in respect of payments made for expenditures under IT Networks until the Borrower has made arrangements satisfactory to the Association which provides for affordable internet access to schools.”*** Specifically, the Minutes of Negotiations stated that ***“Satisfactory to the Association means that Armenia will be included in the top 50% of countries on the Affordability Index published by the International Telecommunications Union.”***

Since 2004, internet provision in Armenia was significantly liberalized and became competitive. The Association considered the above mentioned disbursement condition fulfilled in October 2007, after receiving a confirmation from the Government of Armenia that the relevant funds would be allocated for financing the sustainability of internet provision to schools. Therefore, the Center for Education Projects (CEP) started school networking activities at the end of the 2007. The CEP has conducted extensive field work and prepared the networking plan according which 320 schools (instead of planned 140) were included in the School Network. The network was built in 2008. The final acceptance of the system and its transfer to the NACET was completed in March 2009. Currently 644 schools of Armenia are included in the School Network.

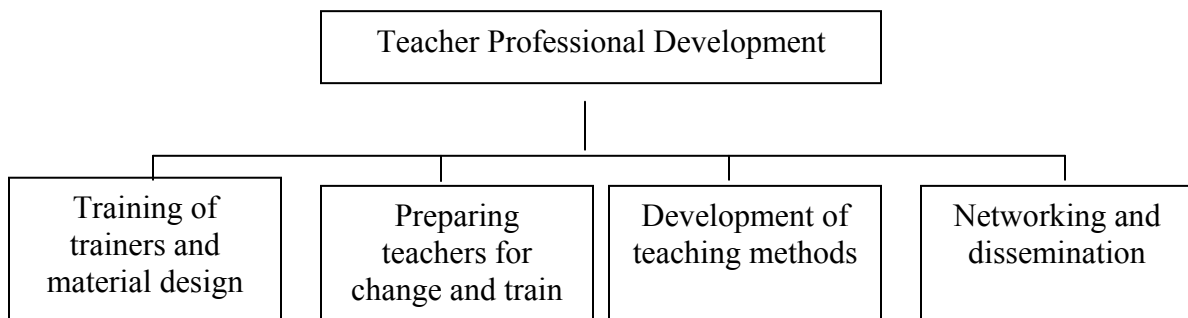
Although the actual cost of the Component 1 was 81 percent of estimated cost, all originally planned activities were implemented. The savings have resulted from the lower unit prices of computer equipment for the schools procured and delivered through the Revolving Fund.

Component 3: Teacher Professional Development (TPD) (actual cost US\$ 6.0 million equivalent, 122 percent of appraisal estimate)

The objective of the Teacher Professional Development component was to enhance the quality of teaching and learning processes in schools by improving the pedagogical knowledge and skills of teachers. The objective of the component was fully achieved as evidenced by:

- Over achieved outcome indicator: Based on actual number of teachers trained and surveys 90 % of teachers are engaged in activities likely to develop the necessary knowledge and competencies in their students.
- Fully achieved output indicators 2: 95% of trained teachers understand and accept the rationale of the reform of the curriculum and assessment.
- Fully achieved output indicator 3: 70 % of teachers use enhanced classroom-based assessment practices to inform students and parents of learning and progress.
- Over achieved output indicator 8: 35% of teachers are ICT literate.
- Over achieved output indicator 9: 95% of project schools use innovative experimentation of active learning teaching methods.

In order to achieve the component development objectives, the activities in this component were performed in 4 directions:



The First activity started under this component was *training in cooperative training methods*. For this purpose international consultant were competitively selected, who trained 30 trainers during the period November 2004 to September 2005. Training of trainers was conducted through three subsequent workshops - 5 days each. In between the workshops 30 trainers developed training materials with the on-line support of the consultant and piloted them in small groups of teachers mostly from remote areas. As a

result, two books were written: “Cooperative Learning: Manual” and “Cooperative Learning: Trainers’ Guide” for trainers and teachers. These books were published (3,000 and 1,000, correspondingly) and distributed to teachers. Between 2006 and 2008, these 30 trainers trained about 300 teachers from School Centers. Training of teachers was also conducted through three successive workshops. This approach contributed in enhancing the efficiency of training workshops and in converting the modern teaching approaches into teachers’ advanced knowledge and skills.

The introduction of the new 12-year Curriculum Framework, subject area syllabuses and standards, and cooperative learning methods in schools required a *massive teacher training program*. Every teacher participated in the five day training workshops before starting teaching the new curriculum. The total number of subject teachers trained was 42,000. Of those 35,000 teachers were trained with project financing and the remaining 7,000 teachers (physical education and art) were trained by NIE through the state budget by using the methodology and training approaches designed under the Project.

The introduction of a new formative assessment system was also implemented in combination with appropriate teacher training program. *Training on formative assessment* was conducted in two phases. In the first phase (2007) 12,678 teachers of Armenian Language, Mathematics and Informatics were trained. The second phase of training was conducted in 2009 only after the final *Learners’ Assessment Policy Paper* was approved. In the second phase 9,845 teachers of Natural and Social Sciences and Foreign Languages were trained. In total 22,523 teachers were trained on formative assessment.

The Project also implemented *training of teachers in ICT* in two phases. In total, about 9,560 teachers were trained in ICT. In the first phase 30 hours of basic computer literacy training was provided to teachers and in the second phase about 550 High School teachers were trained in using ICT as a teaching and learning tool through 60 hours program.

Given that new activities were added to this component at the restructuring, the actual cost of the component was 122 percent of estimated cost. The cost overrun was cover by the savings from components 1, 2 and 4.

Component 4: System Management and Efficiency (actual cost US\$ 3.1 million equivalent, 86 percent of appraisal estimate)

The fourth component helped to improve the management and efficiency of the education system.

A “*Staff Optimization and Social Assistance Program*” (*SOSAP*) was designed and launched under the Project. The redundant teachers were given a choice from a menu of social assistance services including: (i) counseling services in job-search; (ii) training and re-qualification programs; (iii) relocation grants; (iv) assistance in self-employment; and (v) additional cash payment equaling to six month wages of a teacher. The latter was

made available only to redundant teachers who were 50 years or older at the date of dismissal and had not reached their retirement age.

The executing agencies of the SOSAP were the National Employment Service (NES) with its Territorial Employment Centers, Social Insurance State Fund (SISF) and CEP. Through the credit funds CEP procured and provided to the NES computer and office equipment, furniture, stationary and other office supplies required for effective organization of the social assistance program. In addition, software and database for the NES containing comprehensive information on redundant teachers and type of social assistance provided to them was developed. The labor market survey was implemented by NES as well. As of June 2007 approximately 3,159 redundant teachers were registered in the NES and 2,323 of them had participated in several programs. In particular, 1,731 teachers received additional cash payments; 69 received location grants; 523 participated in professional trainings; and 28 received psychological assistance.

The main reason for low enrollment in the SOSAP was due to several problems. Most of redundant teachers preferred to receive additional cash payments, though only teachers older than 50 years were allowed to receive cash payments. As a result, fewer teachers preferred other types of social assistance: location grants, trainings, consultancy to start small business, and psychological counseling. About 30 percent of redundant teachers were of retirement age but no social assistance was envisaged for that group of redundant teachers. About 87 percent of redundant teachers were women, who looked for new jobs.

Training of schools principals and board members in school financial-economic issues, management and leadership started under the Education Management and Financing Project (Credit number IDA-30070) and continued under EQRP. From 2003 to 2005 approximately 820 school principals and 2,700 board members were trained. The new cycle of training for school principals with the aim to familiarizing school principals with on-going reforms started in 2005. For that purpose new modules were developed in accordance with the main directions of reforms including the following topics: NCF, new subject standards and syllabi; new assessment principles; and new student-centered teaching methods and introduction of ICT. As the result of the training program, about 900 school principals became fully aware of new curriculum, assessment system and ICT, thus leading them to support reforms and improve their leadership and management skills.

The “Strategic Program of Preschool Education Reforms for 2008-2015 and Pilot Project” was developed between June and December 2007. The Program placed a special emphasis on the issues of preparing preschool children for the primary school, ensuring equal opportunities for everybody, and increasing the number of children enrolled in preschool education, especially those from vulnerable families. The Program aimed to achieve overall preschool education for 5-6 years old children, and gradually increase the enrollment reaching 90 percent by 2015.

The pilot stage of the Strategic Program was carried out in 22 institutions of Shirak Marz - Akhuryan region and Lori Marz - Spitak region. The main criteria for choosing Akhuryan and Spitak regions were almost full absence of pre-school institutions there and very low enrollment rate. The cost of the pilot projects was covered by three sources:

grants from Credit funds (about 60 percent of the total cost) and communities and parental investments (about 40% of the project cost). Credit funds were mainly targeted to repairing the preschool classrooms, refurbishing works, acquisition of equipment, and teaching and learning materials. As a result, a favorable environment for small children was established in all institutions. Other recurrent expenses (teachers' salaries, recurrent goods, electricity, fuel, heating, water/sewage, communication services, nutrition, etc.) were covered through the community and parental contributions. The latter was made both in a form of monetary (from the community budget, parents, community members, etc.) and in-kind contributions. It should be mentioned that 538 children directly benefitted from the 22 micro-projects: 310 – from Akhuryan region, 228 – from Spitak region. About 53 percent of those children were from vulnerable families.

The core goal of reforms in the general education system is transition to the 12-year school system, which was launched in 2006 and is expected to finish in 2012. Since the 2009/2010 school year *the establishment of the high school network was launched*. Establishment of the separate high school network on the 3rd level of general education aimed to raise the education quality and effectiveness in high schools. The pilot project for high schools and neighboring schools, included 10 high schools, and sought to establish modern resources centers in these schools. These schools benefitted from minor rehabilitations, equipment and furniture for establishing modern libraries from the credit funds.

An Education Management Information System (EMIS) was established under the Education Financing and Management Project under the responsibility of MoES. EMIS provides operative collection, development and analysis of the general statistical data on the education system both on the level of marzes and country. The EMIS was transferred under the NACET operation in May 2008.

Although the actual cost of the Component 4 was 86 percent of estimated cost, all originally planned activities were implemented. The savings have resulted from the lower costs of the Teacher Redundancy Program as a result of smaller than expected number of redundant teachers applying for social assistance.

Component 5: Project Management Support (actual cost US\$ 2.10 million equivalent, 150 percent of appraisal estimate)

The fifth component financed the necessary assistance for project coordination, financial management, procurement, monitoring and reporting. It supported the investment and operating costs associated with the project management unit, Center for Education Projects (CEP). This component cost 50% more than appraisal estimate because the project was extended for one year and new activities were added at the restructuring.

Annex 3. Economic and Financial Analysis
(including assumptions in the analysis)

Not applicable.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Toby Linden	Task Team Leader	ECSHD	
Virginia Jackson	Senior Operations Officer	ECSHD	
Kari Hurt	Operations Officer	ECSHD	
Pasi Sahlberg	Senior Education Specialist	ECSHD	
Susanna Hayrapetyan	Operations Officer	ECSHD	
Arvo Kuddo	Senior Labor Economist	ECSHD	
Alexander Astvatsatryan	Procurement Officer	ECSPS	
Nightingale Rukuba-Ngaiza	Senior Counsel	LEGEC	
Andrina Ambrose	Senior Finance Officer	LOAG 1	
Ekaterina Arsenyeva	Financial Management Specialist	ECSPS	
Anna Goodman	Program Assistant	ECSHD	
Supervision/ICR			
Juan Manuel Moreno Olmedilla	Task Team Leader	ECSHD	
Alexander Astvatsatryan	Procurement Officer	ECSC2	
Yelena Fadyeyeva	Senior Operations Officer	ECACA	
Susanna Hayrapetyan	Sr. Health Spec.	ECSH1	
Aleksan Hovhannisyan	Consultant	ECSHD	
Sachiko Kataoka	Education Economist	ECSH2	
Arvo Kuddo	Senior Labor Economist	ECSH4	
Nicole L. La Borde	Office Manager	MNSHD	
Carmen F. Laurente	Senior Program Assistant	ECSHD	
Zorica Lesic	ICR Team Leader	ECSHD	
Nvard Manasian	Consultant	ECSHD	
Karina Mostipan	Senior Procurement Specialist	ECSC2	
Satik S. Nairian	Program Assistant	ECCAR	
Pasi J. E. Sahlberg	Sr Education Spec.	ECSHD	
Arman Vatyan	Sr Financial Management Specialist	ECSC3	
Anna L Wielogorska	Senior Procurement Specialist	ECSC2	

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
Lending		
FY02	8	77.29
FY03	40	170.23
FY04	51	157.46
FY05		0.05
Total:	99	405.03
Supervision/ICR		
FY05	64	116.53
FY06	87	157.06
FY07	78	165.91
FY08	57	116.36
FY09	22	124.38
FY10	13	50.23
Total:	321	730.47

Annex 5. Beneficiary Survey Results
(if any)

Not applicable

Annex 6. Stakeholder Workshop Report and Results
(if any)

Not applicable.

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

Progress in achieving Project Development Objectives and in outputs was significant. A short summary of these achievements is given below.

A National Curriculum Framework, subject standards and syllabuses with aligned new textbooks and teacher guides for 12-year school have been developed, produced and provided to every school in the country. The new NCF and syllabuses have been gradually (grade by grade) introduced in schools since September 2006. By Project end the shift to 12-year school was almost completed.

A national Assessment and Testing Center (ATC) has been established and is currently fully performing its functions - its major task to implement fully new school graduation/university entrance examinations for all subjects was completed in summer 2009.

A new system for continuous and formative assessment of the learner was developed discussed widely and is being implemented currently.

Armenia started to participate in international studies, namely *International Mathematics and Science Study (TIMSS)*. This was a major step enabling country to provide internationally comparable evidence of students' achievement and use results as a basis for policy dialogue and a better understanding of the causes of observed differences in performance of students in Armenia and other countries. In 2002 Armenia successfully completed the pilot stage (field test) of TIMSS-2003 and got the right to participate in the main phase. TIMSS 2007 Main Survey took place in May 2007 in 150 secondary schools of Armenia. Results of Armenia in TIMSS-2007 were notable since the progress made by the country compared to the results of TIMSS-2003 was significant.

The success of Armenia in TIMSS was connected not only with the gained experience but also with the on-going reforms: introduction of new National Curriculum Framework, Standards and Syllabi, introduction of new assessment system together with the test culture as well as teacher training.

A National Center of Educational Technologies (NaCET) was created and operating successfully. It has taken over coordination of activities on ICT in general education sector as well as management of the Armenia School Network involving 644 schools, the School Internet Portal (www.armedu.am) and EMIS.

A unique and innovative Computer Revolving Scheme (CRS) was created and is currently operating, which ensures provision of computer equipment to schools and provides a financial mechanism for their partial replacement at the end of useful life. Majority of schools (78.6%) have received new computers through CRS and started ICT based teaching and learning.

A remarkable amount of funds is collected by schools and paid to the CRS making sustainability of the computer provision to schools certain. During five years of its operation the CRS has achieved a significant return rate (95.84% of the target amount), which are even more valuable when bad social conditions of communities is taken into account.

Valuable electronic resources in Armenian language were created and provided to school children.

An extensive teacher training program has been designed and carried on touching all 'quality areas'. The following five types of training were provided to teachers:

- Provision of basic information and knowledge on New Curriculum Framework (NCF), subject syllabi, standards;
- Teacher training on Formative Assessment;
- Teacher training in cooperative learning methods;
- Provision of training to teachers on basic computer literacy and use of ICT in teaching/learning process; and
- Small Group Teaching and Learning in Mathematics.

Eventually each and every teacher in the country has received training. Many of them participated in several cycles of trainings. Key focus in all trainings provided to teachers was the use of new teaching and training methods. Progressively the rationale and technique of cooperative, interactive methods is introduced into the training plans of all teacher training programs. The teacher-centered approaches are gradually being enriched with learner-centered ones. Even more, the lecturing, transmission-reception teaching style is being receded, paving the way for learner friendly interaction, discussion and group work. One of the most effective esteem building tools called "reflection" is developing which is linked with the rationale of the new three level standards introduced in curriculum. It is working as an effective technique for building up not only the knowledge of the learners, but also their skills and capabilities, which is the new requirement of the curriculum.

A network of 52 school-centers was created. School-centers became the institutional structure for conducting teacher trainings, piloting innovation and disseminating them. NIE with its regional braches became part of the institutional structure for conducting teacher trainings.

School principals and board members were trained to improve their capacity in financing management and of the school.

High school and pre-school reforms were piloted in limited number of institutions. Modern resource centers/libraries were established in newly created high schools giving student access to a wide range of new printed and electronic resources.

By project completion a number of project inputs reached the stage where the Government was able to see a measurable impact on quality. However, those inputs have not yet reached the stage where the Government can observe the desirable change of quality. Curriculum and assessment reforms will, by their nature, be slow to work their way up the system. A massive and innovative teacher training program has been implemented, many teachers have been trained. But the process of an existent change in the teaching practices will require more time and efforts. Some of the reforms, such as pre-school and high school have been successfully piloted, but will also entail further efforts and much more time to see their impact.

The second Education Quality and Relevance Project will continue investing into quality changes and MoES will be monitoring its progress towards improved quality by which it is meant:

- Improved attitudes towards learning and educational achievement in the classrooms.
- Improved levels of learner achievement in traditional areas of education.
- Acquisition of new, relevant competencies (knowledge, skills and values) by learners comparable to those of OECD countries.

The Government is confident that huge efforts are leading to the planned outcomes, thus the system is traveling in the right direction.

The detailed description of the achievements and outputs by components is given in the Annex 2 of this ICR.

Comments to the DRAFT ICR provided by the Center for Education Projects (April 27, 2010)

The general comments to the draft ICR are the following:

1. Paragraph 2.3 of the ICR

Design, implementation and utilization of Monitoring and Evaluation system for the Project is not assessed fully, thus the respective rating is lowered. In particular, 10 independent studies were carried on during the whole period of the Project to assess the results and outcomes of the Project. A baseline study was conducted at the beginning of the Project to assess the situation before the start of the Project and a final Project Impact Assessment Study was carried on, which allowed making a comparative analysis of the Project outcomes (by all components) with the pre-project situation. In between baseline and final study 8 independent targeted studies were carried on Project different components, which have: (i) assessed the effect of ICT component, in particular the level of use of ICT in the schools and impact of ICT on the student interest and learning; (ii) assessed the impact of the new national curriculum, subject syllabi and standards; (iii) included independent monitoring and evaluation of the high school pilot project; (iv) included independent monitoring and evaluation of the pre-school pilot projects; (iv) studied results of the teacher training process and effect of the influence of the teacher training on the teacher behavior in the classroom; (v) studied links of the high school

reform with the higher education; (v) assessed of the current state of school libraries; (vi) studied the employment opportunities of redundant teachers in the labor market, etc.

Besides, Armenia participated in international studies, namely TIMSS 2003 and TIMSS 2007 which provided an opportunity to monitor the progress in student achievements in the result of curriculum reform and teacher training.

It should also be noted that every teacher training course has a built in monitoring and evaluation system which included:

- Initial testing of the participants
- Final testing of the participants
- Assessment of the participants satisfaction with the seminars through specifically developed questionnaires
- Site visits, observations of the seminars, information collection
- Analyzing collecting information and feedback
- Putting in place an accountability scheme through reports.

In general the Project monitoring and evaluation system, as well as studies revealed major changes in schools factored by the reforms implemented through the Project. Suggestion is to increase the rating for M&E.

2. Paragraph 3.2 of the ICR

The achievement of PDO is significant. The single outcome indicator was over achieved, 8 of 11 intermediate indicators were also over achieved and 3 fully achieved. This fact is highlighted in many places in the ICR. We believe that at least by this criterion (achievement of PDO) the project rating should be increased.

As to the statement that “no impact evaluation was carried on thus it is difficult to confirm how much overall classroom practices have changed and ...” the major comment here is that the changes in quality and content aspects of in schools have started only in 2006-2007 academic year and at the Project closing in 2009 it was too early to observe dramatic changes, although the evidence of the on-going changes was received from the studies (as mentioned above). The reforms were planned to move the school system through evolutionary changes and not revolutionary ones. Curriculum and assessment reforms, as well as change in the teaching practices, by their nature, are slow to work their way up the system and require more time and efforts.

Հայաստանի Հանրապետության

Կրթության, Գիտության և Գրգռման նախարարություն

ՀՀ Կրթության նախարար



РЕСПУБЛИКА АРМЕНИЯ
МИНИСТЕРСТВО
ОБРАЗОВАНИЯ
И НАУКИ
МИНИСТР

REPUBLIC OF ARMENIA
MINISTRY OF EDUCATION
AND SCIENCE
MINISTER

ՀՀ Կրթության նախարար

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N 01/19/3885-10 14 05 2010

Mr. Aristomene Varoudakis
Country Manager for Armenia
The WB Office, Yerevan

Dear Mr. Varoudakis

RE: Armenia-Education Quality and Relevance Project (Credit IDA-38490)
Draft Implementation Completion Reports

The Ministry of Education and Science (MoES) has received draft Implementation Completion Report (ICR) for Education Quality and Relevance Project (Credit IDA-38490) dated April 12, 2010. The draft ICR was completed by MoES in cooperation with the Center for Education Projects and together with comments sent to the World Bank Education Team on April 27, 2010.

The MoES has received the copy of revised version of draft Report (dated May 10, 2010) sent to the Ministry of Finance. We would like to thank the World Bank for incorporating into the Annex 7 of the Report the MoES comments. However, there were also comments made in the main text of the Report, which were not incorporated in the revised version of ICR.

We would appreciate very much if the World Bank considers once again the suggested changes, in particular the MoES suggestion to increase the Project rating for

the following 2 criteria - Achievement of Development Project Objectives (DPO) and Project Monitoring and Evaluation.

Thank you in advance for your kind consideration.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Armen Ashotyan', enclosed within a large, loopy, hand-drawn oval shape.

Armen Ashotyan
Minister of Education and Science
Republic of Armenia

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

Not applicable.

Annex 9. List of Supporting Documents

- Country Assistance Strategy – Report No. 22111-AM
- Country Assistance Strategy – Report No. 28991-AM
- Project Appraisal Document – Report No. 26266- AM
- Project Appraisal Document – Report No. 47225- AM
- Poverty Reduction Strategy Paper, Government of Armenia, 2003
- National Curriculum Framework, Government of Armenia, 2004.
- Peer Review Comments
- Implementation Status Reports
- Aide Memoires following World Bank missions
- Mid-Term report, PIU, Government of Armenia
- Education Quality and Relevance Project, Completion Report, Center for Education Projects
- The Government of Armenia, 2008, Program for Sustainable Development (revised version of PRSP-2).

