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The World Bank**

Report No.: 41807

PROJECT PERFORMANCE ASSESSMENT REPORT

ROMANIA

**SCHOOLS REHABILITATION PROJECT
(LOAN 4312-RO)**

DECEMBER 12, 2007

*Sector, Thematic, and Global Evaluation Division
Independent Evaluation Group*

Currency Equivalents (annual averages)

Currency Unit = Romanian Leu, Lei (plural)

As of June 30, 1 1997 (Year of Approval)
1 Leu = US\$0.000031
US\$1 = 32,297 Lei

As of January 31, 2004 (Year of ICR)
1Leu = US\$0.00014
US\$1 = 7,032 Lei

Abbreviations and Acronyms

CAS	Country Assistance Strategy
CEB	Council of Europe Development Bank
EFA	Education for All
EIB	European Investment Bank
FTI	Fast-Track Initiative to achieve Education for All
GDP	Gross domestic product
ICR	Implementation Completion Report
IDA	International Development Association
IEG	Independent Evaluation Group
MIS	Management information system
MoER	Ministry of Education and Research
NGO	Nongovernmental organization
OECD	Organization for Economic Cooperation and Development
PAD	Project Appraisal Document
PCU	Project Coordination Unit
PISA	Programme for International Student Assessment
PIRLS	Progress in International Reading Literacy Study
PIU	Project Implementation Unit
PHRD	Policy and Human Resources Development
PPAR	Project Performance Assessment Report
PRSP	Poverty Reduction Strategy Paper
QAG	Quality Assurance Group
SAR	Staff Appraisal Report
TIMSS	Trends in International Mathematics and Science Study
UNESCO	United Nations Educational, Scientific, and Cultural Organization

Fiscal Year

Government: January 1 — December 31

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About this Report

The Independent Evaluation Group assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, IEGWB annually assesses about 25 percent of the Bank's lending operations. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons. The operations, topics, and analytical approaches selected for assessment support larger evaluation studies.

A Project Performance Assessment Report (PPAR) is based on a review of the Implementation Completion Report (a self-evaluation by the responsible Bank department) and fieldwork conducted by IEGWB. To prepare PPARs, IEGWB staff examine project files and other documents, interview operational staff, and in most cases visit the borrowing country to discuss the operation with staff of the Bank and the government, other stakeholders, and beneficiaries. The PPAR thereby seeks to validate and augment the information provided in the ICR, as well as examine issues of special interest to broader IEGWB studies.

Each PPAR is subject to peer review and IEGWB management approval. Once cleared internally, the PPAR is reviewed by the responsible Bank department and amended as necessary. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

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The time-tested evaluation methods used by IEGWB are suited to the broad range of the World Bank's work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. IEGWB evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (additional information is available on the IEGWB website: <http://worldbank.org/ieg>).

Outcome: The extent to which the operation's major relevant objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance of objectives, efficacy, and efficiency. *Relevance of objectives* is the extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). *Efficacy* is the extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance. *Efficiency* is the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. The efficiency dimension generally is not applied to adjustment operations. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Risk to Development Outcome: The risk, at the time of evaluation, that development outcomes (or expected outcomes) will not be maintained (or realized). *Possible ratings:* High Significant, Moderate, Negligible to Low, Not Evaluable.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry of the operation and supported effective implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of supported activities after loan/credit closing, toward the achievement of development outcomes. The rating has two dimensions: quality at entry and quality of supervision. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, towards the achievement of development objectives and sustainability. The rating has two dimensions: government performance and implementing agency performance. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

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<p>This report was prepared by Helen Abadzi, who assessed the project in June 2007. Marie-Jeanne Ndiaye provided administrative support.</p>
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Principal Ratings

	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
<i>Schools Rehabilitation Project (Loan 4312)</i>			
Outcome	Satisfactory	Satisfactory	Satisfactory
Risk to Development Outcome** (Sustainability)	Likely	Likely	Moderate
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

* The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The ICR Review is an intermediate IEG product that seeks to independently verify the findings of the ICR.

** According to the 2006 harmonization guidelines, sustainability has been replaced with a "risk to development outcome" rating, and a new monitoring and evaluation rating was added.

Key Staff Responsible

	<i>Task Manager/ Leader</i>	<i>Division Chief/ Sector Director</i>	<i>Country Director</i>
<i>Schools Rehabilitation Project (Loan 4312)</i>			
Appraisal	Leonardo Concepción	J. Christopher Lovelace	Kenneth G. Lay
Supervision	Leonardo Concepción	Leonardo Concepción	Leonardo Concepción
Completion	Mariana Doina Moarcas	Anand Seth	Charles Griffin

Preface

This is the Project Performance Assessment Report (PPAR) on an education project in Romania.

The Schools Rehabilitation Project (Loan 4312) was approved for a US\$70 million loan in July 1997. The loan closed on January 31, 2004 after an extension totaling 12 months, and US\$0.16 million were cancelled. The Council of Europe Development Bank cofinanced this project with a loan of US\$13.8 million.

The PPAR was conducted jointly with the Ex Post Evaluation Department (DEP/CEB) of the Council of Europe Development Bank. This organization, represented by Bastiaan de Laat, started its mission on June 4, 2007 and was joined by the IEG mission on June 11, 2007 for a week of common visits and interviews to 14 schools. This report describes the findings of the IEG mission, while the CEB provided a separate report to the government. (The two reports share photographs and data.) The IEG author thanks the government officials who received the mission for their extensive cooperation.

In addition, the PPAR is based on the following sources: Implementation Completion Reports (ICRs), Staff Appraisal Reports (SARs), Loan Agreements for the projects, and project files, particularly the supervision reports.

Following standard IEG procedures, copies of the draft PPAR were sent to government officials and agencies for their review and comments. However, no formal response was received.

Summary

To increase the safety of its aging schools after decades of neglect and seismic activity, Romania implemented a school reconstruction project.

The Schools Rehabilitation Project (Loan 4312) was approved for a US\$70 million loan in July 1997. The loan closed on January 31, 2004 after an extension totaling 12 months, and US\$0.16 million were cancelled. The Council of Europe Development Bank cofinanced this project with a loan of US\$13.8 million.

Despite initial delays, all activities of this complex project were completed, and the numbers of schools rehabilitated exceeded initial targets by about 25 percent. Users reported to the IEG mission that overall school rehabilitation had satisfactory outcomes. However, most schools visited had problems suggesting poor supervision of workmanship during implementation. The resulting problems have created maintenance issues and an unexpected financial burden for local authorities.

Project outcome is rated *satisfactory* in light of substantial relevance, efficacy, and modest efficiency. Risk to development outcome is rated *moderate*; it is unclear whether local authorities have the budgets to maintain the school buildings, particularly given the unexpected need for repairs.

World Bank performance is rated *satisfactory* because of the technical preparation and assistance given during implementation. The Bank was flexible, the task manager had technical expertise, and the projects were supervised frequently. Government staff reported that they had learned a great deal from the Bank's team. Borrower performance is rated *satisfactory*. Despite some delays and maintenance issues, the project implementation unit completed a technically challenging project satisfactorily.

This assessment provides a number of lessons for the education sector:

- Educational infrastructure is an appropriate project objective when it is coupled with a lending program that is focused on quality issues. Large stand-alone operations focused on rehabilitating or constructing educational facilities may have a development effectiveness if the operations are strongly linked to a country's education quality improvement policy and development agenda (para 1.7);
- When projects involve large amounts of civil works, it may be efficient to separate the educational and the construction roles. A specialized entity with a mandate limited to construction may carry out this role more efficiently than an agency that also has responsibilities for quality, policy and capacity building issues. Conversely, an implementing agency of an education project without an infrastructure component would be able to focus its efforts and resources effectively on complex education content and quality intervention (para 2.3);
- Maintenance and the associated long-term expenditures are an important aspect to consider in educational infrastructure. Contractor quality must be carefully

monitored to ensure that works are built to last and do not require extensive repairs soon. Warranty periods should be carefully assessed (para. 3.7);

- Many middle-income countries find the Bank's advice and technical assistance highly valuable. The ability of Bank staff to help government counterparts to implement complex projects is an advantage over commercial banks and other organizations. This is one reason for involving competent technical specialists as task managers or members of project teams (para. 4.7); and
- To reduce the number of small schools it may be possible to transport students to larger schools in town. However, this policy would create tradeoffs in terms of expenditures and environmental effects. These could be assessed in future projects (para. 3.12).

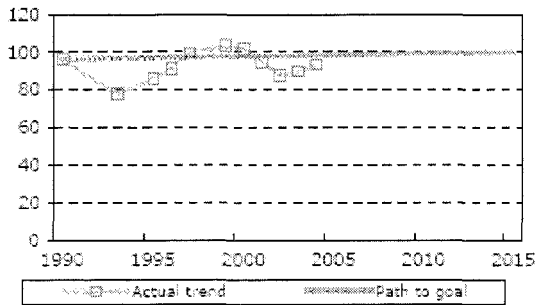
Vinod Thomas
Director-General
Evaluation

1. Background

1.1 Romania, a country of 21.6 million people with a per capita income of about US\$2960 joined the European Union in January 2007. Primary and secondary educations have been available since the 19th century, and the socialist regime ruling Romania until 1989 strengthened the provision of education at all levels. Thus, Romania has practically no gender gap, provides extensive education in minority languages, and focuses resources on the Roma student population.

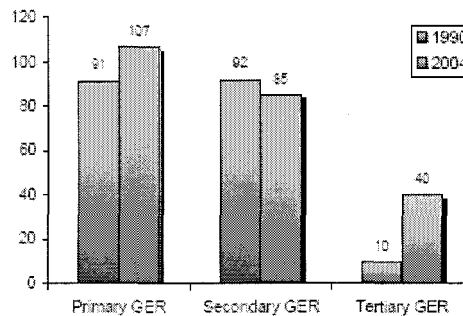
1.2 Romania has achieved nearly universal primary and secondary education (Figure 1.1 and Figure 1.2).¹ At the time of transition to a democratic regime, gross and net enrolment rates approximated 100 percent in primary, while graduation rates from 8th grade were about 96 percent. Romania's repetition rates for basic education are around 3.5 percent, while dropouts from 1990/91-2003/04 were at or below 1.5 percent.²

Figure 1.1: Completion Rate: Actual and Desired Trends



Source: Edstats, Country at a Glance 2007

Figure 1.2: Enrollment Trends, 1994-2004



Source: Edstats, Country at a Glance 2007

1.3 Learning outcomes reflect the maturity but also the challenges of the education system. The 8th grade (capacitate) and 12th grade (baccalaureate) exams have relatively stable pass rates of 90-96 percent. However, the international assessments (TIMSS and PISA) show a more negative picture. Romanian students consistently performed less well in mathematics and science than the average for all participating Eastern Europe countries, and Romanian TIMSS results were virtually flat between 1995 and 2003. In PISA, Romania also tested below the Eastern Europe average and well below the EU average; about 70 percent of Romania's 15-year olds performed below the level generally considered a prerequisite for functioning well in a modern workplace.³ However, since the 1989 revolution, the system suffered from the abrupt decline in investment and expenditures. In 1990, only about 3 percent of GDP (Gross Domestic Product) was allocated in education compared to the average of 6 percent for the Organization for

1. Edstats: Country at a glance, 2007.

² Berryman et al. 2007. The student population was 3.3 million in 1990 but had declined by about 37 percent in 2005 and is projected to be about 1.8 million in 2035.

³ Berryman et al. 2007. TIMSS refers to Trends in International Mathematics and Science Study and PISA refers to Programme for International Student Assessment.

Economic Cooperation and Development (OECD).⁴ To improve its quality of education the country needed suitable school buildings but had limited resources to do so.

1.4 The age of the Romanian schools reflects the country's educational system development. Urban schools account for about 40 percent of all classrooms, but 82 percent of all schools, are located in rural areas. About 12 percent of the buildings were built in the 19th century or the early 20th century. Many facilities were not designed to be used as schools and did not meet generally accepted norms for school facilities. Several were damaged in the earthquakes of 1977, 1986, and 1990, which particularly affected rural and very poor regions of the country. Earthquake damage, coupled with limited investment resulted in many unsafe schools. Population movements meant that in many areas schools were overcrowded, with some operating on three shifts and on reduced instructional time.⁵ Furthermore, constructions during the Ceausescu era had very low construction standards, and there was no effort to rationalize the school network.

1.5 In 1995, a survey of 12,000 schools by the Ministry of Education and Research (MoER) found 1,150 heavily damaged buildings, of which 170 had been evacuated. The government repaired 600 of these on an emergency basis and in 1996 developed a two-phased school rehabilitation strategy: (a) rehabilitating damaged schools in imminent danger of collapse up to the national safety and pedagogic standards; and (b) upgrading all remaining damaged schools or replacing some if necessary. Funds were unavailable for the task, so the government asked for donor assistance. After considerable deliberation of policies regarding the financing of educational infrastructure, the World Bank agreed to finance a project that would help rehabilitate 900 schools.

Bank Sector Strategy

1.6 Since 1990, the World Bank has assisted Romania in its transition to a market-oriented economy. Every CAS since 1993 has supported education; the 2001 CAS pursued several lending and non-lending initiatives.⁶ The education program started with an Education Reform Project in 1994 and a Higher Education Project in 1996, that were followed by a Rural Education Project in 2003 (Table 1.1).⁷ The Education Reform Program focused mainly on the critical issues of improving the quality, coverage, and

⁴ Berryman et al. 2007

⁵ In 1995/1996 basic education in Romania at all levels included 29,536 units: 12,772 kindergartens; 13,817 primary and lower secondary schools, 2,684 higher secondary and technical schools; 168 special schools for handicapped children; and 95 higher education institutions. Of the schools, 27 percent were built between 1901-1945; 43 percent between 1946-1970, and 16 percent between 1971-1989. Fewer than one percent were built from 1990 to the present. Romania: School Rehabilitation Project. Staff Appraisal Report, 1997.

⁶ 1997 Poverty and Social Policy 2003: Poverty Assessment; Berryman et al. 2007.

⁷ IEG. 2003. Project Performance Assessment Review. Romania: Education Reform Project (Loan 3724-RO); Reform of Higher Education and Research Project (Loan 4096-RO) Report No.: 26225. The Education Reform Project aimed to: (a) update and improve quality of basic and secondary education and (b) develop and introduce measures that will increase efficiency in the management of public resources for education. The Reform of Higher Education and Research Project was to improve: (a) the responsiveness of the system to the demands for new professional and managerial skills required by a market economy; (b) resource allocation to generate incentives for more efficient performance; and (c) access to higher education with increased equity for talented but needy students. The objective of the rural education project is to have rural school students benefit from improved access to quality education, as evidenced by higher achievement scores and completion and transition rates.

cost-effectiveness of the pre-university school system. Components mainly focused on curriculum, alternative textbooks and assessment, and improving the quality of management and staff. Given the Bank's emphasis on quality-related inputs, school rehabilitation was not included in the priorities of the first projects.

1.7 The Bank's education lending has been coherent and highly relevant to government priorities. Implementation has met problems and challenges, such as an underestimated need to inform the population better about development objectives. Also the Bank has not developed the cross-sectoral collaboration needed in order to rationalize reforms of Romania's education system, such as an integrated rural strategy to support rural education and the Roma that live in rural areas. Overall however, the Bank's education assistance performed well, and objectives were met. Project outcomes have been rated satisfactory by operations and IEG (Table 1.1). In particular, borrower staff have repeatedly expressed in interviews their satisfaction with the Bank's technical assistance in communicating the concepts behind projects, helping with project design, and organization of the implementation. They considered this a major difference between the Bank and other donors.⁸

Table 1.1: World Bank - Education Lending in Romania

<i>Projects</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Closing</i>	<i>Loan amount US\$m</i>	<i>Project Cost US\$m</i>	<i>Canceled US\$m</i>	<i>IEG Ratings Outcome</i> <i>Bank performance</i> <i>Borrower performance</i>
Education Reform Project (Loan 3724-RO)	P080008	1994	2/2002	50	62.9	0	Satisfactory Satisfactory Satisfactory
Reform of Higher Education and Research Project (Loan 4096-RO)	P080035	1997	9/2002	50	84	0.4	Satisfactory Highly satisfactory Satisfactory
Schools Rehabilitation Project (Ln. 4213-RO)	P044614	1998	1/2004	70	130	0.16	Satisfactory Satisfactory Satisfactory
Rural Education Project (Ln. 4691-RO)	P073967	2003	9/2009	60	91	n/a	Under implementation
Total				230	267.9	0.56	

1.8 *Other donors.* Several donors have invested in Romanian education. The Soros Foundation finances the Education 2000 nongovernmental organization (NGO), which supports reform efforts. European Union program, Phare, supported the reform of vocational-technical education for 25m euros. The Bank-financed School Rehabilitation Project received US\$13.8 million from the Council of Europe Development Bank in joint

⁸ Berryman et al. 2007

financing. Universities have also received research grants financed by the European Union. A second rehabilitation project for 1400 schools has been financed by the European Investment Bank and Council of Europe Development Bank.

2. Project Objectives and Implementation

2.1 The project supported Romania's efforts to rehabilitate about 900 schools up to the safety standards and pedagogic norms established by the Ministry of Education in accordance with the Education Reform Project. (See objectives and components in Table 2.1).

Table 2.1: Project Objectives

<i>Objectives</i>	<i>Components</i>
(a) To rehabilitate, upgrade and furnish pre-university schools, thereby restoring safety of school buildings in imminent danger of collapse, and mitigating the educational disadvantages to students occupying such schools	⇒ Rehabilitating, upgrading, and furnishing about 900 kindergarten, primary, and secondary schools in 41 counties (US\$128.1 million at appraisal, US\$127.7 million actual).
(b) To improve the institutional capacity of the Ministry of Education and Research at the national and county levels to plan, develop and maintain the public educational physical plant.	⇒ Strengthening the sectoral capacity of the education ministry, at both the national and county levels, to plan, implement, and manage the government's school investment and rehabilitation program; and to manage and maintain the public educational physical plant (US\$3.7 million at appraisal, US\$2.26 million actual).

Source: Technical and legal documentation of the project.

Note: The Romanian administrative units (judet) have been often translated as 'counties' but also as districts. This document refers to them as 'counties'.

2.2 The 900 seriously damaged schools were at the pre-university level (about 100 kindergartens, 700 primary and 100 secondary schools) in 41 of the 42 counties. Nearly 80 percent were in rural areas and altogether they accommodated about 200,000 students. The schools had been selected on the basis of facility surveys and had structural resistance below the threshold needed to resist an earthquake of a given magnitude, as specified in the 1996 edition of the National Building Code of Romania. Interviewed officials told the IEG mission that the prioritization of schools for rehabilitation was established in accordance with the school mapping models developed for the pilot counties of Tulcea and Vaslui. The extent or scope of the rehabilitation for each school had been determined in accordance with the school design and planning standards.

2.3 A school construction project implementation unit (PIU) was constituted in the MoER that was responsible exclusively for the bidding civil works contracts and overseeing their execution. It consisted of a central project management unit staffed by about 25 people, six regional coordinators, and 41 county project implementing units with central-level and county-level inspectors and technical directors. The PIU was closely linked to county and local governments; these assumed responsibility for quality control and subsequently for maintenance.

2.4 The project was complex due to the dispersion, remoteness, and variability in conditions of the schools that had to be rehabilitated. For each school that was to be rehabilitated, an architectural study was conducted. Rather than contract small local builders for the works, the PIU chose to contract large companies that had equipment and cover large numbers of schools. The staff developed means to make the construction process efficient (e.g. pouring concrete on multiple sites successively) and learned how to group multiple buildings for bidding in one package so that more and less desirable ones could be repaired. Most of the work had to be done during school vacations and spanned the months from April to October. In cases of reconstruction, the new building was built on a different location in the school yard, and sometimes students had to be moved to other schools if the old building had to be demolished first.

2.5 The focus was on functional and efficient rehabilitation methods and on materials that could withstand constant use. The staff experimented with new rehabilitation solutions, modern technologies and materials, and finishes resistant to constant maintenance actions. Especially challenging was the rehabilitation of schools that were considered historical monuments. Due to the large cost of these, the PIU strengthened the foundations, and the Ministry of Culture carried out the internal rehabilitation work. The buildings also got central heating and in many cases new energy-efficient windows and doors.

2.6 Interactions with the public were also complex. The PIU received pressure from politicians who were interested in awarding contracts to certain contractors, a problem that was often averted by stating that the World Bank objected to certain contracts. Overall, involving parents and communities was a challenge, because this had not been traditionally done, so few parents' committees got involved in project preparation or in implementation. Some parent associations in better-off communities agreed to pay from their own funds for upgraded materials. Friction ensued sometimes as some principals tried to convince contractors to use more expensive materials than the PIU was willing to provide. (Some school principals reported that the contractors told them to leave and not return until the work was completed.)

2.7 There were also startup complexities and delays related to accessing loan funds and staff remuneration issues; government salaries were too low for architects and engineers, so these had to be hired through a university non-profit association (the Romanian Association of Management Consulting and Technology in Construction). (This also enabled the government to hire staff just for the duration of the project rather than life-long employment.) As a result of these obstacles, the project suffered a one-year delay, but subsequently implementation was fast. Deadlines were met, and in fact most project funds were disbursed in three years (2001-2003).

2.8 During implementation, it became apparent that initial cost estimates (US\$400 for new construction and

Figure 2.1: Refurbished monument school



US\$200 for rehabilitation per square meter) were too high and that it was possible to build schools for US\$200 per square meter and rehabilitate others at US\$140 per square meter. As a result, the government decided to rehabilitate 25 percent more schools than planned, 1206 rather than just 900. The World Bank agreed, and the project received an extension of one year to complete the extra schools.

Figure 2.2: A large school rebuilt on the site of an earlier one



Figure 2.3: The interior of a newly constructed school



3. Results

3.1 This section presents results and evidence regarding efficacy that is the extent to which project activities and inputs may have contributed to outputs, outcomes, and impacts.

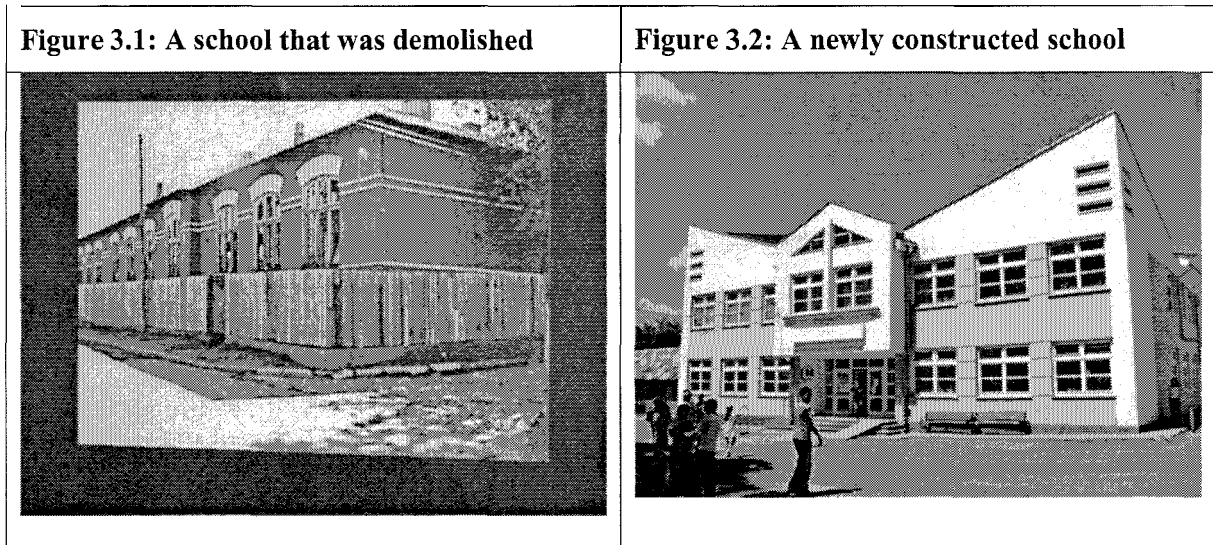
Objective: improved physical infrastructure (Substantial)

3.2 As discussed in the implementation section, the project succeeded in reconstructing or rehabilitating 1206 buildings within the budget and time available during the project. What were the effects of these activities?

3.3 The IEG mission visited 14 schools in two counties; it interviewed county officials, principals and teachers, and collected other pertinent information. Local authorities had been warned of the mission's arrival, and most schools were notified as well.⁹ Classroom instruction was observed to determine how project inputs were used, and segments were videotaped for subsequent study by the mission and counterpart staff.

⁹. The two organizations visited a total of 25 schools. CEB visited schools in Dolj and Prahova counties, while CoE and IEG jointly visited 14 schools in Botosani and Vaslui counties. The counties and schools were selected at random and replacement schools were suggested when it was impossible to reach the original sample. Schools visited included locations in the Botosani county: Botosani no. 1, Guranda, Cucuteni (multigrade), Durnesti (multigrade), Brateni general school, Scoala de arte si meseri in Bacesti, Negreste, Parpanita. In Vaslui schools visited were: School no. 1, School for the Deaf, School of arts grades 1-8 in Berezeni, and School of arts grades 1-8 in Falcui.

Overall, about nine government officials and 22 school staff were interviewed regarding project outcomes and impacts.

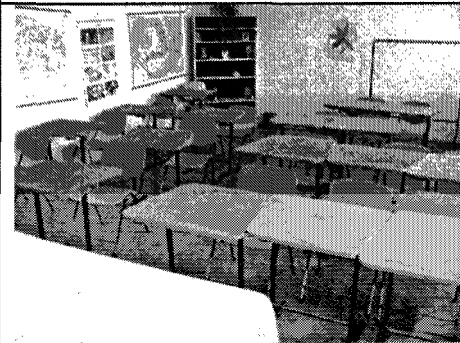


3.4 Beneficiaries consistently expressed satisfaction with the rehabilitation process and outcome. They mentioned the advantages of safety, comfort, better working conditions for students and teachers. In many cases the old buildings were in very poor condition, and the rehabilitation had been substantial. In addition to strengthening the foundations and painting, every classroom received an extra blackboard, increasing the space available for information presentation during instruction. New furniture was being well kept and was often covered in cloth (Figure 3.3). The rehabilitation in some schools resulted in very attractive environments that (as shown in other countries)¹⁰ might induce teachers and students to spend more time in school and therefore increase instructional time.

3.5 The staff interviewed also mentioned that infrastructure issues also focused attention on curricula and classroom configurations. For example, collaborative learning is facilitated through the new modular furniture that can be easily moved, whereas the traditional long desks do not serve this purpose well.

3.6 Some school principals reported that they were constantly present on site during rehabilitation and were of the opinion that their attention and close involvement resulted in rehabilitation of better quality. The users reported in almost all cases that the foundations

Figure 3.3: Desk covers to avoid wear



¹⁰ OED 2004.

had been reinforced. Nevertheless, a number of the 14 schools visited by IEG had construction issues that would not be expected after the passage of only four to five years (Pictures show different types of problems):

- *Cracking concrete and plaster:* Gutters that were too short and dropping water on concrete (12 schools); poured concrete broken in outside areas, possibly due to insufficient compacting, steps separating from the body of the building (extensive in two schools). Exterior and interior walls deteriorating due to water seepage (4 schools);

Figure 3.4: Walls damaged by gutter leaks

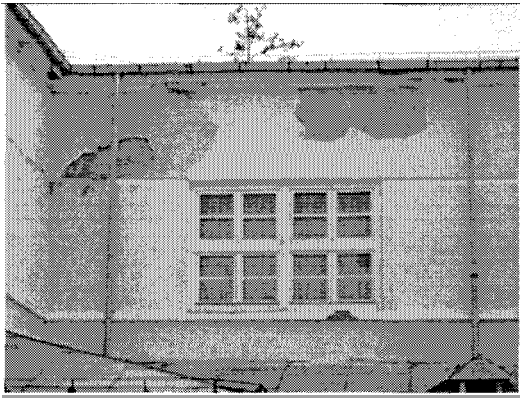


Figure 3.5: Poorly constructed concrete



- *Bathrooms in unsanitary conditions:* moisture in bathroom walls, plaster falling (3 schools); poor floor grading (2 schools); dry bathrooms without water (3 schools), insufficient bathrooms for students (3 schools); and
- *Deteriorating floors and windows:* Wood shrinkage and movement (3 schools), wooden windows that had been painted without primer and were peeling (4 schools). Some had already been replaced with plastic window cases that close more hermetically. The mission was told that primer was not used in Romania.

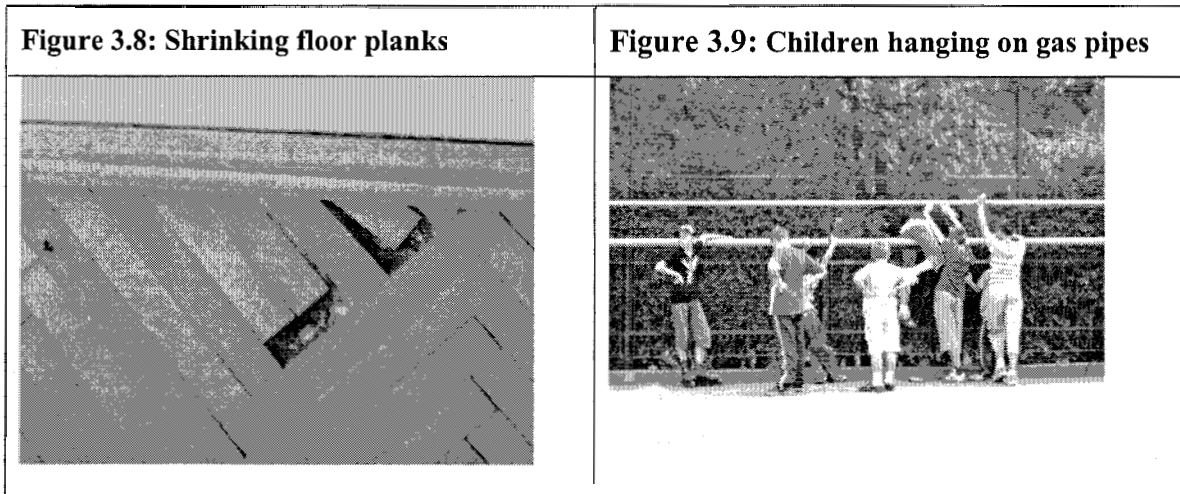
Figure 3.6: without primer, paint on windows peels fast



Figure 3.7: Books stored for the summer due to a lack of storage cabinets



- *Lack of cupboards* (4 schools), resulting in books being stored in bathrooms and on the classroom floor.
- *Exposed gas and heating pipes.* These were often installed through different funding sources after schools had been rehabilitated. Thus, were vulnerable to students' games.



3.7 The mission saw only one building that had been abandoned and classified as dangerous for users. (It was a rural building that was slowly sliding down the mountain and was still being used for athletic events.) Nevertheless, the IEG mission visits did not include construction expertise. Experts contracted by CEB tested a sample of the buildings in July 2007 and found that structurally, the reinforcements provided satisfactory resistance to earthquakes.¹¹ However, it is unclear whether building strength resulted from the rehabilitation or whether the buildings had been solidly built.

3.8 *One-year warranty.* Several of the problems identified during the mission appeared soon after construction, but by then the one-year warranty given by the contractors had expired. Several beneficiaries expressed regret at the short duration of the warranty period that could have potentially been two years. In particular, the principals of two large schools expressed alarm at the rate of deterioration and the costs implied for repairs, just 4-5 years after construction. Local authorities had committed to maintaining the buildings, but the cost of poor workmanship and significant repairs had not been taken into account. Some staff expressed concern about the ability of the counties to undertake the repairs.

3.9 The various defects raised concerns of potential corruption, and the mission asked several questions to field staff regarding the quality and performance of contractors. Staff mentioned that some contractors had been problematic, but that there were few willing to take on the rehabilitation of schools in remote areas. PIU staff mentioned the difficulty in sustaining contractors' interest when so much construction activity is taking place in Romania. The scarcity of workers following Romania's integration with the

¹¹ CEB project documents.

European Union compounds the problem. The mission did not find tangible proof of corruption, but in several schools it was evident that contractors had not been supervised or sufficiently pressured to do a good job. After the completion of the mission, newspaper articles were found discussing the poor state of the repaired schools and alleging that specific companies had performed poorly.¹² Another article described many of the same defects that the mission discovered, such as rotten wood and whitewash over defective areas.¹³

Objective: capacity improvement (substantial)

3.10 The project aimed to strengthen MoER capacity to plan, efficiently implement, and manage the Government's school investment and rehabilitation program. Several training activities took place with the aim of developing the skills of central and district inspectorate staff (see Annex Table A-1). For example, the PIU provided training to contractors, who had worked in communist era parastatal companies and had no experience in preparing bids.

3.11 At project inception the PIU trained about 92 staff members to conduct a school mapping exercise and interpret its data. The Ministry's Directorate of Investments currently uses school mapping principles and cost-effectiveness analyses to allocate investment funds. A collaboration between architects/engineers and educators, teachers, and local officials has resulted in the development of modern construction standards and school design standards that simultaneously respect good engineering practice and educational needs. These standards have been well integrated into the operations of the MER and local authorities.¹⁴

3.12 The development of staff skills has resulted in more extensive planning regarding school buildings. The government realized that many small buildings were not financially sustainable and that it was cheaper to use school buses and send students to larger schools in nearby towns when possible. Thus, transportation with local buses has been introduced. However, there has not been a study of their environmental effects, expenses, and tradeoffs.

3.13 A maintenance manual for schools was prepared and distributed. Its utility, however, is uncertain, because it was very technical and detailed. A shorter brochure was prepared, and the manual was also in the process of being simplified after project closing. The problems encountered after the warranty period expired suggest that training in supervising the civil works was not optimal.

¹² According to the Jurnalul National (September 12, 2006), the Cominco company executed works for World Bank projects involving rehabilitation in 59 schools of the Prahova county in 2002-2003 worth about 6 million Euros. However, by 2005, many were in poor shape, and authorities had to spend about 5 billion lei for repairs. <http://old.jurnalul.ro/articol.php?id=61614> (September 12, 2006).

¹³ <http://e-scoala.core-target.ro/viewtopic.php?t=52> (September 19, 2005)

¹⁴ Berryman et al. 2007, interviews with officials during the IEG Primary Education Impact Evaluation study.

4. Ratings

Project Outcomes

4.1 The human resource development strategy for Romania was relevant to the country's economic needs. Project objectives were *substantially relevant* in the 1990s and remained relevant in 2007; Romania's entry in the European Union has placed much pressure to improve the quality of educational outcomes and compete with the other European graduates. To provide the level of education to which the country aspires, appropriate infrastructure is necessary. This means not only earthquake resistance but also existence of appropriately designed spaces to conform with state-of-the-art curricular prescriptions.

4.2 In terms of *efficacy*, the project met or exceeded its objectives and numerical targets; the 1206 schools rehabilitated or reconstructed were far exceeded the initial target of 900 schools. Thus the project served 262,719 pupils, 31.5 percent more than the 200,000 expected at appraisal.¹⁵ In addition, it resulted in considerable institutional development, as educators learned to collaborate with architects using school mapping information and appropriate architectural designs to maximize learning outcomes.

4.3 It is possible that attractive schools entice students and teachers to spend more time in them and may result in improved learning outcomes.¹⁶ No data are available to demonstrate a relationship between improved physical conditions in school and learning outcomes in Romania, but informal reading tests in grades 1-3 showed that in almost all schools visited, students at the end of grade one knew how to read.

4.4 Nevertheless, the maintenance issues observed by the IEG mission and the corruption allegations of newspapers raise efficiency questions. The government made efforts to lower unit costs in order to cover more schools. However, it is possible that costs were lowered excessively at the expense of quality. If so, the repair costs to local governments may exceed available resources. MoER clearly had not anticipated these costs, and it is unclear whether local authorities have the necessary resources. This issue is complicated by labor scarcity. Many skilled construction workers have left for other European countries when Romania formally entered the European Union, so maintenance costs have risen. It is unknown to the mission whether the allegations have substance, but if asked, contractors might agree to make needed repairs in order to prove their good faith.

Risk to Development Outcome

4.5 The sustainability of the building stock (with respect to maintenance) is still to be determined. In line with an education decentralization law adopted in 2000, the responsibility for ongoing maintenance of pre-university schools was transferred from the MoER to the local authorities. However, the decentralization was not adequately

¹⁵ Implementation Completion Report, p. 16

¹⁶ IEG. 2005.

supported by financing. Failure to define an adequate fiscal framework for decentralization of functions in education leaves many local authorities without adequate funds for maintenance. Poor districts are particularly affected because they are less able to lobby for funds or raise own resources for maintenance.¹⁷ As a result, many local authorities are perennially confronted by inadequate annual budgets to cover several decentralized social responsibilities, and school maintenance may become a low priority. Overall, the risk that the development outcome will not be maintained is rated *moderate*; if the government continues its efforts to engage local communities, there may be extra contributions to school maintenance budgets.

World Bank Performance

4.6 Government staff who were involved in project preparation report that it was not easy to convince the World Bank to finance a project exclusively devoted to school infrastructure. To justify the project, the government strongly emphasized issues of safety and imminent collapse of many buildings. Still, there was scepticism among World Bank management, and a review by the Bank's Quality Assurance Group (QAG) rated quality at entry marginal because of the project's limited direct educational content.

4.7 To prepare the project, the Bank assembled a competent team and conducted through a Japan-financed Policy and Human Resources Development (PHRD) grant. The task manager who was a highly experienced architect and who gave much technical assistance to the government. Staff were later very appreciative and stated that preparing the project and participating in supervision missions with the Bank was a valuable experience that taught them how to do complex project implementation. Project supervision was prompt and frequent, because nearly all team members were based in the field and could give much attention to the project. In 2002, QAG rated the quality of supervision highly satisfactory. However, the documents show limited concern with infrastructure quality problems, like the limited warranty period and concerns about the performance of large contractors. For these reasons, Bank performance is rated *satisfactory*.

Borrower Performance

4.8 Overall, borrower performance is rated *satisfactory*. Despite initial delays, the staff learned how to implement this type of project and completed all activities as expected. Subsequently the School Rehabilitation PIU and its decentralized units continued to rehabilitate schools in follow-up projects, including a second major rehabilitation intervention for another 1,400 schools through a loan from the European Investment Bank (EIB) and CEB. The PIU also implemented a component focused on providing basic education conditions (water, sanitation, heating) in approximately 1,500 rural schools financed by the Bank assisted Rural Education Project.

4.9 As the PIU continues to operate, the efficiency of the employee work force becomes pertinent. The mission observed significant numbers of staff involved in

¹⁷ Berryman et al. 2007

supervision of works at the central and county levels. Although data are not available, questions arise regarding the extent staff numbers could be reduced and cost efficiency improved.

Monitoring and Evaluation Design, Implementation, and Utilization

4.10 Monitoring and evaluation design is rated *modest*. Given the unusual nature of this project, efforts could have been made to monitor and report on process-related issues that could have helped improve the efficiency of future projects. These could include information regarding interactions with contractors, between contractors and school committees, beneficiary assessments, before-and-after conditions of schools, and efforts to link learning outcomes to school rehabilitation outcomes.

5. Issues in Sectoral Strategy and Lessons

5.1 Donor interest in infrastructure has greatly increased in recent time. Not only is the senior management of the Bank more interested in infrastructure, but the European Commission has also decided to focus its development aid activities on infrastructure rather than health and education per se.¹⁸ This means that the education sector needs to have more information and a better understanding of the efficiency parameters involved in educational infrastructure projects. Without it, evaluation becomes difficult.

5.2 Examples of parameters and monitoring indicators to develop include the numbers and skills of staff involved at various levels of execution and the approximate amount of time per unit of construction. Given average salaries, the percentage of project cost spent on management and supervision is roughly calculated by CEB as about US\$2.7 million,¹⁹ about 3 percent of project cost. Norms for educational infrastructure supervision cost could be developed, as exist in other sectors. These would include the cost of activities such as tender preparation, bid evaluation committees, and selections. Unit costs might also clarify governance issues and increase transparency.

5.3 The World Bank used to employ many architects and engineers in the education sector, but nearly all have retired. To carry out effective educational infrastructure projects, qualified architects and engineers are needed as task managers.

LESSONS

5.4 This assessment provides a number of lessons for the education sector:

- Educational infrastructure is an appropriate project objective when it is coupled with a lending program that is focused on quality issues. Large stand-alone

¹⁸ Cronin 2007. <http://www.ipsnews.net/news.asp?idnews=38420>

¹⁹ CEB roughly estimated staff cost involved in the project is as follows: 72 staff * 400 Euros average salary (charged) per month * 12 months (per year) * 6 years (1998 – 2003) = 2,073,600 Euros.

operations focused on rehabilitating or constructing educational facilities may have a development effectiveness if the operations are strongly linked to a country's education quality improvement policy and development agenda (para 1.7);

- When projects involve large amounts of civil works, it may be efficient to separate the educational and the construction roles. A specialized entity with a mandate limited to construction may carry out this role more efficiently than an agency that also has responsibilities for quality, policy and capacity building issues. Conversely, an implementing agency of an education project without an infrastructure component would be able to focus its efforts and resources effectively on complex education content and quality intervention (para 2.3);
- Maintenance and the associated long-term expenditures are an important aspect to consider in educational infrastructure. Contractor quality must be carefully monitored to ensure that works are built to last and do not require extensive repairs soon. Warranty periods should be carefully assessed (para. 3.7); and
- Many middle-income countries find the Bank's advice and technical assistance highly valuable. The ability of Bank staff to help government counterparts to implement complex projects is an advantage over commercial banks and other organizations. This is one reason for involving competent technical specialists as task managers or members of project teams (para. 4.7).
- To reduce the number of small schools it may be possible to transport students to larger schools in town. However, this policy would create tradeoffs in terms of expenditures and environmental effects. These could be assessed in future projects (para. 3.12).

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Annex A. Implementation of project components

Table A 1: Schools Rehabilitation Project

<i>Components/ subcomponents</i>	<i>Activities</i>	<i>Targets to be achieved</i>	<i>Outputs</i>	<i>Outcomes Info obtained during mission</i>
School Rehabilitation	rehabilitation, upgrading, and furnishing kindergarten, primary and secondary schools	About 900 schools in 41 districts	1206 schools: 435 were replaced 771 were rehabilitated 274 multishift schools converted to 1-2 shifts 81 from 3 shifts to 1 193 from 2 shifts to 1	175 were in urban areas and the vast majority (1031) in rural areas Unknown if student- teacher ratios changed
		10,000 students enrolled in 3rd or later shifts to be taught earlier	39,176 students moved from 3 shifts to 1 16,440 moved from 2 shifts to 1	Instructional time should increase as a result of this measure, though evidence was not available
Institutional Capacity Improvement				
School Facilities Planning and Maintenance.	Developing staff skills for cost- effective standards of school building, maintenance, and rehabilitation	Training in school maintenance management 82 staff	82 staff	Training was reportedly of good quality, though its impact on ability to implement was unclear
	Ministry staff trained in school mapping preparation and analysis	200	295	Training has been useful and enabled staff to interpret school mapping data
	Production of school maintenance manual		Long version and brochure completed	Utility of manual limited due to its complexity. Was to be rewritten after project completion
Project Administration.	Resources for central and district Project Implementing Units			

Source: Project documents and information obtained during the PPAR mission

Annex B. Basic Data Sheet

SCHOOLS REHABILITATION PROJECT (LOAN 4312)

Key Project Data (amounts in US\$ million)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project cost	US\$130.0	US\$129.97	99.98
Loan amount	US\$70.0	US\$70	
Cancellation	0	0	

Project Dates

	<i>Original</i>	<i>Actual</i>
Board approval	07/29/1997	07/29/1997
Signing	10/02/1997	10/02/1997
Effectiveness	10/31/1997	01/23/1998
Closing date	01/31/2003	01/31/2004

Staff Inputs (staff weeks)

	<i>Actual/Latest Estimate</i>	
	<i>N° Staff weeks</i>	<i>US\$US\$('000)</i>
Lending ¹	NA	US\$184,186.42
Supervision	117.85	US\$434,451.04
ICR	11.05	US\$19,321.51
Total	128.90	US\$637,958.96

¹ Given the age of the project, it was very difficult to get data on Staff Cost (SW). Data prior to 2000 used to be retrieved from FACT, but this database is not used any longer at the Bank. Therefore, it is impossible to get the figures broken down for each project preparation phase. Total budget spent during project preparation was available in the Project AUS in SAP (US\$184,186.42).