



1. Project Data :		Date Posted : 08/03/2000	
PROJ ID: P004168 OEDID: L3693		Appraisal	Actual
Project Name : Science & Technical Education	Project Costs (US\$M)	324.0	322.39
Country : South Korea	Loan/Credit (US\$M)	190	169.37
Sector, Major Sect .: Higher Education, Education	Cofinancing (US\$M)	0	0
L/C Number : L3693			
	Board Approval (FY)		94
Partners involved :	Closing Date	12/31/2000	12/31/2000
Prepared by :	Reviewed by :	Group Manager :	Group:
Linda Ankrah Dove	Ridley Nelson	Ridley Nelson	OEDST

2. Project Objectives and Components

a. Objectives
Improve quality of science and technical (S&T) education and research through implementation of Policies and Actions Program (PAP) and provision of specialized equipment . Specifically, the project was to support quality improvement in undergraduate science and engineering departments in selected universities; strengthen teaching and research capacity of marine science institutions to address environmental problems; improve quality of practical science and engineering programs in open universities (OUs) and junior technical colleges (JTCs); improve opportunities for junior research activities in basic sciences through strengthening common research facilities at the Korea basic Science Institute (KBSI) and enhance the quality of training in vocational high schools (VHSs).

b. Components
Equipment for Ministry of Science and Technology (KBSI), and Ministry of Education (MOE) Departments of Engineering, Natural Science, Marine Science, the OUs, JTCs and VHSs .

c. Comments on Project Cost, Financing and Dates
Not all project costs were provided by KBSI and MOE but reasons why are not provided . ICR uses appraisal estimates to fill in gaps. Asian economic crisis and devaluation caused some private institutions to cancel equipment orders and funds were reallocated to public institutions . Nevertheless, the project accomplished its objectives at lower cost than estimated at appraisal .

3. Achievement of Relevant Objectives :
Project met its objectives in providing 16,800 pieces of equipment to 123 MOE institutions and the KBSI. MOE enhanced research capabilities and teaching, especially S&T . All equipment is in use indicating its substantial relevance. Engineering and Natural Science departments exceeded targeted hiring of additional professors and thus significantly reduced student/faculty ratios and teaching loads, increased library capacities, numbers of visiting professors and research subsidies . Marine Science Departments improved research capacity . Expensive marine shipping simulator for training centrally available and in use by public and private sectors . OU improved quality of technical programs. JTCs increased enrollments by 100%, increased number of JTC Cooperation Committees and reduced student/faculty ratios. Equipment to VHSs met 70% of target and targeted number of Joint Practice Centers exceeded. Equipment for central campus and 4 regional centers used for joint research with universities, research institutions and industry to a total of 44,600 projects by 4,200 participating organizations, leading to 600 local and international publications and many successful patents .

4. Significant Outcomes /Impacts :
The borrower's planned budget for operations and maintenance (O&M) and the high utilization rates for the equipment promises high value from this large investment in physical infrastructure .

5. Significant Shortcomings (including non-compliance with safeguard policies):
None, except some shortfalls in targeted amounts of equipment to OU and VHSs .

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6. Ratings:	ICR	OED Review	Reason for Disagreement /Comments
Outcome:	Highly Satisfactory	Highly Satisfactory	Given the narrow scope, the limited components and the length of the relationship of the borrower with the Bank in education, outcome for this final project before regraduation is rated highly satisfactory because it fully accomplished its objectives with no major shortcomings.
Institutional Dev .:	Substantial	Substantial	ICR shows "high" which is not an option on OED form. Insufficiently detailed evidence of uniformly high institutional effectiveness/impact.
Sustainability :	Likely	Likely	ICR shows "highly likely" which is not an option on OED form. Gaps in data on budgetary and private financing and cost data would be required to award a highly sustainable rating.
Bank Performance :	Highly Satisfactory	Satisfactory	Bank performance satisfactory except in supervision of accounts.
Borrower Perf .:	Satisfactory	Satisfactory	Borrower performance fully satisfactory except in lack of timeliness and transparency in cost accounting, a chronic issue in the Korea education portfolio.
Quality of ICR :		Satisfactory	

7. Lessons of Broad Applicability :

- When the project design is simple and the capacity of the implementing agencies is carefully assessed, project implementation is likely to be smooth and successful . In this case, the project had only two major components implemented by two experienced implementing agencies .
- When the borrower's procurement agency has sufficient knowledge of Bank procedures and the capacity to prepare technical specifications, implementation is greatly facilitated .
- Sharing of equipment to non-project institutions offers promise for high equipment utilization rates . In this case, it also led to high levels of research output and an income to support operation and maintenance . OED adds that if a rate of return had been estimated for the equipment this would have provided the means to measure the project's efficiency .

8. Audit Recommended? Yes No

Why? For a broader study of infrastructure and knowledge dissemination in context of global public goods. Validation of ratings.

9. Comments on Quality of ICR :

The implementing agencies' comments are detailed and thorough, except for the cost data gaps .