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Report No. 16226

IMPLEMENTATION COMPLETION REPORT

KOREA

VOCATIONAL EDUCATION PROJECT

Loan No. 3314-KO

December 31, 1996

Human Resources Operations Division
Country Department 1
East Asia and Pacific Regional Office

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CURRENCY EQUIVALENTS

Currency Unit	=	Korean Won (W)
At appraisal	=	US\$1 = W 710
At completion	=	US\$1 = W 829

WEIGHTS AND MEASURES

Metric System

ABBREVIATIONS AND ACRONYMS

BE	-	Board of Education
EFB	-	Education Facilities Bureau
ELPD	-	Education Loan Projects Division
ICB	-	International Competitive Bidding
ICR	-	Implementation Completion Report
LEFD	-	Local Education Facilities Division
LESB	-	Local Education Support Bureau
MOE	-	Ministry of Education
OE	-	Office of Education
O&M	-	Operations & Maintenance
OSROK	-	Office of Supply, Republic of Korea
PCR	-	Project Completion Report
PPAR	-	Project Performance Audit Report
SOE	-	Statement of Expenditure
VET	-	Vocational Education and Training
VHS	-	Vocational High School
VTI	-	Vocational Training Institute

FISCAL YEAR

January 1 - December 31

ACADEMIC YEAR

March - February

Vice President:	Javad Khalilzadeh-Shirazi, Acting, EAP
Director:	Javad Khalilzadeh-Shirazi, EA1
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IMPLEMENTATION COMPLETION REPORT
KOREA
VOCATIONAL EDUCATION PROJECT
LOAN 3314-KO

PREFACE

This is the Implementation Completion Report (ICR) for the Vocational Education Project in Korea, for which Loan 3314-KO in the amount of US\$30.0 million equivalent was approved on March 28, 1991 and made effective on September 3, 1991.

The loan was closed on schedule on June 30, 1996. Final disbursement took place on October 31, 1996, at which time a balance of US\$429,454.18 was canceled.

The ICR was prepared by Messrs. Robert L. McGough, EA1HR, V. Desa (consultant) and Sing Zak Sung (consultant), EA1HR, and was reviewed by Messrs. Sven Burmester, EA1HR Division Chief, and Walter Schwermer, Project Advisor. The borrower conducted a separate evaluation of the project and provided a copy of the evaluation report to the Bank. This report is included, in an unedited form in Annex 2.

Preparation of this ICR was begun during the Bank's final supervision mission, March 30-April 10, 1996. It is based on material in the project files. A final, short Completion Mission was conducted during the Korea Projects Supervision Mission (for five EA1HR supervised projects) from October 28 through November 16, 1996. The borrower contributed to the preparation of the ICR by: (a) providing specific data upon request; (b) contributing views reflected in their own evaluation of the project's preparation and execution; and (c) through their comments made on the draft ICR.

**IMPLEMENTATION COMPLETION REPORT
KOREA
VOCATIONAL EDUCATION PROJECT
(Loan 3314-KO)**

EVALUATION SUMMARY

Objectives

(i) All project objectives have been successfully achieved, especially (a) upgrading skill training in selected Vocational High Schools (VHSs) in line with the country's economic and industrial development and (b) enhancing the capability of the provincial and urban Offices of Education (OE) to manage and implement vocational school projects. The quality and capacity for skill training in these VHSs in the fields of industry, commerce, agriculture, fisheries/maritime have been significantly upgraded by increasing the overall provision rate of modern specialized training equipment and shops, coupled with the staff training required to incorporate and use the equipment in the revised curricula. These significant improvements in quality and capacity should enable the institutions to more adequately address the changing skill requirements in those sectors.

Implementation Experience .

(ii) Implementation progress was excellent at all times. The allocation of loan proceeds by priority fields of study and to participating OEs, and the selection of the VHSs in the project followed criteria agreed to between the Borrower and the Bank. The reorganization of the Ministry of Education (MOE) in 1994 did not significantly affect the implementation of the project. Despite initial delays, the project was completed by the original completion date. This was due to the competent management of the implementing agencies and GOK. The project was completed with a small cost underrun (about 1%). The loan closed on June 30, 1996 as planned. All covenants have been fully complied with.

(iii) Equipment procurement followed Bank procurement guidelines. Disbursements were slow in the early years of the project as: (a) the revised curricula for the VHS were finalized only in March 1992, delaying the completion of the attendant standard equipment lists and (b) with decentralization, the 15 local Offices of Education (OE) needed some time to better understand how to procure equipment directly through OSROK and to make arrangements for adequate counterpart funds in their local budgets. Once these understandings were reached, disbursements began to increase after 1994, with actual cumulative disbursement reaching US\$29.573 million by October 31, 1996, that is, about 99% of the loan amount of US\$30.0 million. Sample review of equipment management, utilization and maintenance showed positive results.

Borrower Performance

(iv) The performance of the Borrower was commendable. Despite early difficulties brought on by a major reorganization of MOE and a need to learn more about Bank and international procurement procedures, the implementing agencies were able to quickly adjust with effective policies and procedures to support the overall coordination and implementation of the project. Agreed upon implementation plans were fully implemented on schedule.

Bank Performance

(v) The performance of the Bank was also good. Client satisfaction with the Bank's performance is high. Overall project supervision was also effective. It was noted that, early in the project, a number of supervision problems were identified and resolved before they had a negative impact on the project. Project reports and documentation were well prepared and maintained throughout the duration of the project. It was also noted that all Bank missions were staffed with experienced Bank staff and consultants who understood the needs of the country, vocational/technical education and project implementation. There was little attrition in the staffing of this team over the duration of the project. This consistency in staffing was also considered a positive factor in the success of the project.

Sustainability

(vi) The Government fully understands that Korea's future competitiveness in the technology/information intensive global economy is, to a large extent, dependent on the nation's ability to establish and maintain a base of manpower with strong technical skills. For this reason, the Government has long been committed to the development of the VHS system as it has proven to be an important supplier of technically trained manpower to industry. To date, support for the VHS has been consistent and of reasonable quality. There is no reason to expect this commitment to waiver in the foreseeable future.

(vii) Equipment has been well maintained in the past in the VHSs and it is reasonable to believe it will be well maintained in the future. The decentralization of secondary school system to well-managed OEs makes for sustainability. There is already significant interaction between schools and employers at the local level, thereby improving the relevance of vocational training to labor market needs.

(viii) A concern, in the quest for sustainability, has been the need to develop an effective planning mechanism for resource allocation for consumables and O&M. To this end, under the Project, the Government has been committed to cover recurrent costs for consumables and O&M, estimated at about US\$8,000 per annum per school. Nevertheless, economies are being explored under this project. For example, the institutions have implemented procedures whereby costs for depreciation (wear and tear) of expensive CNC turning and milling machines are reduced through the use of acrylic plastic consumable machining materials instead of metals. Further, an in-depth study of

the resource allocation mechanism for consumables and O&M for future operations was included in the following Bank financed project (Ln. 3469-KO).

Findings and Lessons Learned

(ix) The following are a couple lessons learned in this project: (a) the approval of a Borrower's project proposal by its National Assembly/Cabinet not only assures that it is consistent with the sectoral policy of the Government, but that its implementation will be closely monitored at different levels of government. The progress of a Bank-funded project that has criteria for the allocation of loan proceeds to different institutions, is advanced significantly when the Borrower receives such approval prior to the time of pre-appraisal; and (b) bank missions most often interact primarily with national governments. With many governments currently seeking to decentralize education to the provinces, more Bank attention should be given to local implementers. Technical assistance should be provided to these implementers during the project identification and preparation stages. The focus of the technical assistance should be on project management and implementation, especially for those project components where lending is predominant. Field visits to the local OEs, by Bank supervision missions, were also considered an important factor in the success of the project.

**IMPLEMENTATION COMPLETION REPORT
KOREA
VOCATIONAL EDUCATION PROJECT
(Loan 3314-KO)**

A. PROJECT OBJECTIVES

Project Objectives and Scope

1. The overall objective of the project was to assist the Borrower in upgrading the skill training provided in selected vocational high schools (VHSs), grades 10-12, to ensure that their graduates meet the increasingly complex skill requirements of industry, commerce, agriculture and fisheries/maritime, thereby assuring their continued employability and increased productivity in the workplace.
2. To achieve the above goal, the project encouraged a decentralized management approach in the Boards of Education (BE), now called the Offices of Education(OE). In nine provinces and six major cities, the OEs were delegated major direct responsibilities for the selection of the participating VHSs and for the identification of equipment requirements. The OEs were required to work within the Ministry of Education's (MOE) prescribed standards, regulations and allocated budgetary resources.
3. The expected result of the loan investment was to raise the overall provision rate of experimental and practice equipment in the VHSs from 53% in the year 1991 to 63% by the year 1996.

Evaluation of Objectives

4. The Government's sectoral objective was to support its economic and industrialization policy through a complementary human resource development strategy matching the supply of manpower both in terms of numbers and continually changing skill requirements. The role of vocational education and training (VET) in this endeavor was stated clearly in the first Education Credit to Korea in 1969. Credit 151-KO(1969-1976) supported, inter alia, 27 vocational/technical schools at the senior secondary level together with technical assistance and fellowships to strengthen the planning and administration of vocational and technical education. The second education project, Cr.394/ Ln.906-KO (1973-1979), financed equipment for another 32 vocational high schools(VHSs), while the third education project Ln. 1096-KO (1975-1981), continued to support expansion and quality improvement in another 4 VHSs and an additional 7 vocational training institutes(VTIs) under the Ministry of Labor. The fourth education project Ln. 1474-KO(1977-1983) assisted a further expansion of 16 VTIs and improvement of instructor training. Project Completion Reports (PCRs) are available for all these projects that were completed successfully.

5. By 1989, there was a total of 588 VHSs in Korea, with an enrollment of 835,000 students in the technical, commercial, agricultural and fisheries/maritime fields. Since the completion of the last Bank-funded project in the sub-sector of vocational education in 1983, technology intensive activities were being adopted in these fields at the workplace for the commercial operations to remain competitive. The government chose to resume borrowing in 1991 for the vocational education sub-sector with the current project Ln .3314-KO. This was in consonance with its new policy to decentralize the administration of secondary education to the newly strengthened OEs, the former BEs, in the provinces and major cities.

B. ACHIEVEMENT OF PROJECT OBJECTIVES

6. The overall objectives of the project have been achieved, as verified by implementation review missions visits to all the 15 participating OEs (6 municipal and 9 provincial) and sample visits to VHSs in the cities and the provinces. The findings were:

- (a) Quality and capacity for skill training in the selected VHSs in the fields of industry, commerce, agriculture, fisheries/maritime, have been significantly upgraded through the provision of specialized equipment;
- (b) Unit costs for training students were reasonable between US\$1500 to US\$2300 per student year for the level/quality of training offered; and
- (c) Decentralization of responsibility from MOE to local OEs is providing more local-level authority for schools to determine their own equipment needs and to participate in the related procurement.

7. All project objectives have been successfully achieved, especially by increasing the overall provision rate of modern specialized equipment that is required to meet the training needs of selected VHSs and through enhancing the capability of the local OEs to better manage and implement projects at the local school level.

C. IMPLEMENTATION RECORD AND MAJOR FACTORS AFFECTING THE PROJECT

Implementation Record

8. The implementation progress was excellent at all times. An Advisory Committee to the Educational Facilities Bureau (EFB) of the MOE (para. 2.7 of SAR) advised the EFB first, on the allocation of the loan proceeds by fields of study and, second, on its allocation to the participating OEs based on these priority fields. The OEs, in turn, selected the participating VHSs following criteria laid out by MOE and agreed to between

the Borrower and the Bank (para. 2.6 of SAR). Each OE organized coordination sub-committees in each field (technical, agriculture, commercial and fisheries/maritime) to assist in the selection of the VHSs, and in reviewing selection of equipment items and specifications. Within the amounts allocated by the EFB, each OE could reallocate its amount to the VHSs giving weight to the most disadvantaged in the current overall equipment provision rate, obsolescence of equipment, number of schools and classrooms, operation of joint practice centers, and reform of departments. The selected schools were divided into two groups, with the first half (about 347 schools) benefiting from the IBRD loan. The three National Technical High schools were directly selected by the MOE. The original allocation of Loan proceeds prepared in October 1991 was modified in 1993 to accommodate a slightly increased requirement for equipment provision in the fisheries/maritime schools. Annex 1 to this report shows the final allocation of the Loan proceeds to the 15 participating OEs and 3 national technical high schools.

9. With the reorganization of MOE in 1994, the EFB and the Education Loan Projects Division (ELPD) was abolished. In the new organization, the Local Education Support Bureau (LESB), through its Local Education Facilities Division (LEFD), has taken over the responsibility for the coordination/ implementation of Bank-funded components for *secondary education*. This change did not affect the pace of project implementation.

10. The OEs sent their equipment procurement request (types of equipment and units of equipment) directly to the Office of Supply, Republic of Korea (OSROK), the Government's Central Procurement Agency. Equipment procurement was largely implemented by OSROK with technical support from the coordinating sub-committees at each OE and advisory support from ELPD of MOE. OSROK sought permits from the appropriate authorities for the importation of the various equipment items. Following this, the procurement process was launched. Procurement procedures were in full compliance with Bank procurement Guidelines. Almost all equipment procurement was procured through ICB.

11. Revised curricula for VHSs were finalized only in March 1992 and the attendant new standard equipment lists had to be prepared to match the revised VHS curricula. Consequently, the scheduled delivery of equipment procurement requests from the OEs to OSROK was postponed to June 1992, delaying the start of procurement by about one year.

12. There was no time overrun in this project and no extension to the project's closing date of June 30, 1996. The excellent project management ensured no cost overruns (project actually had about 1% cost underrun).

13. The disbursement lag was considerable from the start of the project until 1994. This lag was the result of: (a) optimistic estimates of cumulative disbursements at appraisal, based as these were on the past experience in dealing with MOE's ELPD and EFB in implementing education projects; and (b) initial delays in preparation of curricula,

which in turn, forced a delay in the preparation of equipment lists (para. 11). Also, (c) with decentralization, the OEs needed a learning period for handling equipment procurement directly through OSROK and arranging for adequate counterpart funds in their local budgets. Once the delays in curriculum preparation were corrected and the learning period passed, disbursements rose swiftly after 1994, with actual cumulative disbursement reaching US\$29.573 million (about 99% complete) by October 31, 1996.

14. Audit reports were submitted in time throughout the implementation period starting with FY 93, as the first expenditures occurred only in CY 92. A separate opinion from the auditors on the Statements of Expenditure (SOE) did not accompany the first audit report. After the Bank reminded the Borrower that there was a requirement for the audit of SOEs which had been highlighted in the minutes of Loan Negotiations of March 16, 1991, all subsequent audit reports contained a separate opinion on SOEs.

Major Factors Affecting the Project

15. The structural change in MOE (para. 9 above) was a major change. However, although the Education Facilities Bureau (EFB) and Education Loan Projects Division (ELPD, a division of ELB) has been eliminated, the Local Education Facilities Division (LEFD) within the Local Education Support Bureau (LESB) has been successful in advising and assisting the OEs to implement the project in a satisfactory manner. One procedural change was made in 1995 which will likely affect future projects: i.e., in that change, the requirement for MOE's prior review of the OEs' equipment selection was dropped.

16. Although there may have been several factors that affected the speed at which the OEs could implement their procurement activities, one of the most significant was the strict limitations put on their allocation of necessary counterpart funds for each project year. While one must be supportive of Government's strong emphasis on the use of advance planning and annual procurement plans, it should be noted that MOE's rigid allocation of counterpart funds on a yearly basis was a factor that limited the acceleration of procurement by some of the OEs. Fortunately, during the earlier stages of implementation, MOE agreed with the Bank's suggestion to allow more flexibility in the yearly allocation of counterpart funds thereby enabling all goods for the VHSs to be delivered at least 6 months prior to the closing date of the loan.

17. There were no consulting services provided in this project.

D. PROJECT SUSTAINABILITY

18. The Government is vitally concerned with the need for more and better skilled persons to support Korea's strategy to compete in the technology/information intensive global economy. Thus, the Government remains focused and attentive not only to the sustainability of this project but also to the overall development needs of the VHS system.

19. Equipment has been well maintained in the past in the VHSs and it is reasonable to believe it will be well maintained in the future. The availability of the National Equipment Maintenance and Repair Centers contributes to this assumption. The decentralization of secondary school administration to well-managed OEs also contributes to more sustainability. There is already significant interaction between schools and employers at the local level, thereby improving the relevance of vocational training to labor market needs.

20. There has been a recognized need to develop a more effective planning and allocation system for consumables and O&M in the VHS system. To this end, under the project, the Government has been committed to cover recurrent costs for consumables and O&M, estimated at about US\$8,000 per annum per school ^{1/}. Nevertheless, economies are being explored under this project. For instance, depreciation costs (wear and tear) of expensive CNC turning and milling machines are reduced through the use of acrylic plastic consumable machining materials instead of metals. An in-depth study of a resource allocation mechanism for consumables and O&M, for future operations, is included in the follow-up project, Loan 3469-KO.

E. BANK GROUP PERFORMANCE

21. The work on identification, preparation and pre-appraisal, appraisal, negotiations and Board presentation did not encounter major difficulties. The total staff-week input was low (see Table 10).

22. During implementation, the Bank staff input in terms of staff-weeks remained low, for nine supervision missions and headquarter's desk work. The high quality work on equipment procurement by the borrower and the waiver of prior Bank review of equipment contracts before making contract awards contributed towards efficient performance as equipment procurement constituted 100% of the use of loan proceeds.

23. Bank supervision missions visited all the 15 OEs, with sample visits to VHSs in the provinces and the cities. The importance of field visits cannot be underestimated. The inflexibility of annual budget allocations by MOE to OEs for equipment procurement was detected on such a visit, as the unavailability of adequate local counterpart funds put a brake on OEs accelerating their equipment procurement. Fortunately, this was successfully resolved with MOE support, thereby ensuring the delivery of all goods procured by OEs well before the closing date of the loan.

^{1/} The basis for estimate is on unit cost per student per year, which varies considerably by field of study. The school size by total enrollment is another important factor. A third factor is the regional and geographical cost differentials (local costs) between schools. Thus, the quoted figure should be understood as an average national estimate for a particular year.

F. BORROWER PERFORMANCE

24. The vocational education project was mainly prepared by the Borrower after identification, since the Borrower's concerned ministries/agencies had earlier experience in preparing similar projects. The project was approved by the country's National Assembly, making all the subsequent processing operations successful and less time consuming.

25. After loan signing, MOE was quick to establish the Advisory Committee to EFB and, by October 1991, it proceeded to propose allocations of the loan proceeds among the specialized skill fields and among the participating OEs. The OEs were then in a position to apply the agreed criteria for the selection of the 347 VHSs under this project. The establishment of appropriate coordination sub-committees in each of the skill areas at each OE promoted the preparation of the required equipment lists, while simultaneously building up local expertise at the OEs.

26. After an initial lag, because of the newness to Bank-funded projects, the OEs were able to master the equipment procurement process and equipment lists started flowing regularly to OSROK, which did an excellent job in undertaking the requisite bidding, mostly on ICB, and ensuring that contracts were awarded to the lowest evaluated bidders. There were some instances of bids for single items being rejected on technical grounds where specifications were not met. These were rebid with revised specifications. As many as 3000 types of equipment were procured under this project. Random sampling showed OSROK was complying with Bank Procurement Guidelines.

27. The Borrower was timely in its submission of the nine progress reports during the entire period of June 1991 and March 1996, providing the necessary data base for effective Bank supervision missions.

28. The loan proceeds was almost fully disbursed (97.3%) by the Closing Date of the Loan on June 30, 1996. At the request of the Borrower, the Bank recommended approval of a grace period of 4 months after the Closing Date, until October 31, 1996, for disbursements of miscellaneous eligible expenditures. The amount of equipment contracts awarded by October 31, 1996 reached \$29.57 million (99% of the Loan amount). About US\$429,454.18 was then canceled from the loan amount on October 31, 1996, thus closing out the loan account.

G. ASSESSMENT OF OUTCOME

29. With the exceptions noted below (para. 30), the project development objectives were successfully achieved. The ratings on Project Development Objectives and Implementation Progress were ranked *highly satisfactory* in the last five supervision reports. The factors that have contributed to this are: (a) the strong commitment of the Government to the project, approved as it was by the National Assembly as part of the annual Foreign Borrowing Program; (b) the high quality of management by MOE project

implementation staff; (c) the major component of the project, procurement of specialized equipment, was primarily implemented by OSROK, an agency with a long and successful history in equipment procurement under Bank-funded projects; and (d) the inputs gained from the Bank's semi-annual progress review missions.

30. Project selection criteria did provide for equal participation of private sector training organizations along with public training institutions (para. 2.6 of SAR), however, the project was not fully successful in gaining an active participation of these organizations. Also, to a small extent financial performance was less than fully met (1% cost underrun). Upon review, it was found that these two drawbacks did not materially detract from the success of the project. Indeed, a careful review of the project shows that the government has a significant and growing commitment to the participation of the private sector and is offering various incentives to encourage more participation. This commitment must be considered an important output of the project.

H. RELEVANCE OF PROJECT OBJECTIVES AND DESIGN

31. The Government's long-term commitment to the development of vocational training has been recognized as an important factor in the capacity of the country to meet the rapidly expanding demand for trained employees in industry and commerce. Over the years, the Government has had a lot of experience with various types of vocational training schemes. Backed by research on the success of these schemes, the Government has made a strong commitment to maintain and expand institutional and non-institutional vocational training as it is needed. In addition, the Government has successfully developed some of the best trained vocational educators in the world, many with Ph.D.s from Western countries. These key managers took an active part in the preparation of this project and their inputs were important in the preparation of the project objectives, design and its ultimate success. The project was also designed to fit into an overall program of investments to support the economic development of the country and to provide the basis on an ongoing interaction with private sector industrial and commercial organizations (paras. 4 and 5).

I. FUTURE OPERATION

32. The follow up to this project is Ln. 3469-KO, the Vocational Schools Development Project. This project continues to extend the objectives of Loan 3314-KO to upgrade skill training in additional selected VHSs and to strengthen the VHS system through five studies in five agreed areas. These areas are: (a) improve operation of Joint Practice Centers; (b) improve supply and quality of vocational course teachers; (c) improve links between employers and VHSs; (d) develop effective mechanism for planning future expansion and structural change in the VHS system; and, (e) develop effective planning resource allocation mechanisms for consumables and O&M. All of these studies have been completed and their recommendations are now being

implemented. The approaches required to establish a new national vocational education system are also being examined by the Presidential Commission for the Reform of the Education System.

J. LESSONS LEARNED

33. In implementing this project, the following lessons have been learned:
- (a) The progress of a Bank-funded project that has criteria for the allocation of proceeds to different institutions is advanced when the Borrower receives approval for its project proposal from the National Assembly prior to the time of project pre-appraisal.
 - (b) Much of Bank experience has been with national Governments. With more democratic governments now emphasizing the decentralization of education to the provinces, technical assistance should be provided during project identification and preparation to local implementing offices/agencies. These technical assistance activities should focus on project management and implementation. Field visits during implementation to the local offices are also considered important.

PART II : STATISTICAL INFORMATION

Table 1: Summary of Assessments

A. <u>Achievement of Objectives</u>	<u>Substantial</u>	<u>Partial</u>	<u>Negligible</u>	<u>Not applicable</u>
	(✓)	(✓)	(✓)	(✓)
Macro Policies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sector Policies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Financial Objectives	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Institutional Development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Objectives	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poverty Reduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Gender Issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other Social Objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Environmental Objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Public Sector Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Private Sector Development	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify) Vocational Education sub-sector	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. <u>Project Sustainability</u>	<u>Likely</u>		<u>Unlikely</u>	<u>Uncertain</u>
	(✓)		(✓)	(✓)
	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

(Continued)

<u>C. Bank Performance</u>	<u>Highly satisfactory</u> (✓)	<u>Satisfactory</u> (✓)	<u>Deficient</u> (✓)
Identification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Preparation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Appraisal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Supervision	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>D. Borrower Performance</u>	<u>Highly satisfactory</u> (✓)	<u>Satisfactory</u> (✓)	<u>Deficient</u> (✓)
Preparation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implementation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Covenant Compliance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operation (if applicable)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<u>E. Assessment of Outcome</u>	<u>Highly satisfactory</u> (✓)	<u>Satisfactory</u> (✓)	<u>Unsatisfactory</u> (✓)	<u>Highly unsatisfactory</u> (✓)
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TABLE 2: Related Bank Loans/Credits

Loan/credit title	Purpose	Year of approval	Status
<i>Preceding operations</i>			
1. First Education. (Cr.151- KO)	Expansion of vocational high schools, junior technical colleges and teacher training	1969	Completed 09/76
2. Second Education (Ln.906/Cr.394-KO)	Improvements of vocational high schools, junior technical colleges and science, engineering and education colleges	1973	Completed 12/79
3. Third Education (Ln.1096-KO)	Expansion and quality improvement in vocational high schools, junior colleges and vocational training institutes (VTIs)	1975	Completed 11/81
4. Vocational Training (Ln. 1474-KO)	Further expansion of VTIs and expansion and improvement of instructor training	1977	Completed 06/83
5. Sector Program on Higher Technical Education (Ln. 1800-KO)	Improving technical colleges and colleges of engineering and management through supply of equipment, staff development, manpower planning, equipment maintenance and academic accreditation	1980	Completed 02/86
<i>Following operations</i>			
1. Vocational Schools Development (Ln.3469-KO)	Continuing with the objectives in Ln.3314-KO to upgrade skill training in selected vocational high schools (VHS) and strengthening VHS system through five studies in five agreed areas	1992	To be completed 12/31/97
2. Science and Technical Education (Ln.3693-KO)	Improving science and technical education and research through implementation of agreed policies and action program and the provision of specialized equipment	1994	To be completed 09/30/98

Table 3: Project Timetable

Steps in Project Cycle	Date Planned	Date Actual/ Latest Estimate
Identification (Executive Project Summary)	5/90	5/09/90
Preparation	5-6/90	5-6/90
Appraisal	6/90	6/90
Negotiations	11/90	2/91
Letter of Development Policy (if applicable)	n/a	n/a
Board Presentation	2/91	3/28/91
Signing	5-6/91	6/03/91
Effectiveness	9/91	9/03/91
First Tranche Release (if applicable)	n/a	n/a
Midterm review (if applicable)	n/a	n/a
Second (and Third) Tranche Release (if applicable)	n/a	n/a
Project Completion	12/31/95	12/31/96
Loan Closing	6/30/96	6/30/96
Last Disbursement	10/31/96	11/07/96
Cancellation of Remaining Funds	10/31/96	10/31/96

Table 4: Loan/Credit Disbursements: Cumulative Estimated and Actual
(US\$ million)

Cumulative Disbursements	FY92	FY93	FY94	FY95	FY96	FY97
Appraisal Estimate	2.0	12.0	22.0	28.0	29.5	30.0
Actual	2.0	3.1	11.4	21.4	28.3	29.6
Actual as % of Estimate	100%	26%	52%	76%	96%	99%
Date of Final Disbursement - October 31, 1996						

Actual Disbursements									
Date	11/91	5/92	7/93	11/93	6/94	11/94	6/95	11/95	3/96
Original SAR/PR Forecast	1.3	2.0	12.7	15.3	22.0	25.3	28.0	28.8	29.3
Actual	0.0	2.0	4.2	6.1	11.4	17.5	21.5	26.4	27.5
Disbursement lag %	100%	0%	67%	60%	48%	31%	23%	8%	6%

Table 5: Key Indicators for Project Implementation

Key Implementation Indicators in the SAR/President's Report

	In 1991	By 1996	
		estimated	actual

(a) Raise overall average equipment provision

for VHSs	53%	63%	89%
(a) Commercial schools.....	57%	66%	75%
(b) Agriculture schools.....	57%	70%	113%
(c) Technical schools.....	51%	57%	90%
(d) Fisheries/Marine Schools.....	49%	78%	162%

(b) Increased employability of VHS graduates ***

waiting period for getting a job after graduation is shorter Most graduates are employed directly after graduation and <i>all are employed</i> within one year of graduation.	not estimated in SAR
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*** Government has collected data for the preparation of its Evaluation Report for the ICR with the participation the Provincial Offices of Education.

Table 6: Key Indicators for Project Operation

Not Applicable

Note: Project Operation was satisfactory in past education projects in Korea. *No operation indicators were considered to be required.*

Table 7: Studies Included in Project

Study	Purpose as Defined at Appraisal/Redefined	Status	Impact of Study
Five studies on VHS system included under Project Ln 3469-KO	a. Improve operation of Joint Practice Centers.	Completed	In all five studies, key recommendations from the studies are under implementation
	b. Improve supply and quality of vocational course teachers.	Completed	
	c. Improve links between employers and VHSs	Completed	
	d. Develop effective mechanism for planning future expansion and structural change in the VHS system.	Completed	
	e. Develop effective planning resource allocation mechanism for consumable and O&M.	Completed	

Table 8A: Project Costs

Item	Appraisal Estimate (US\$M)			Actual/Latest Estimate(US\$M)		
	Local Costs	Foreign Costs	Total	Local Costs	Foreign Costs	Total
1. Equipment	-	26.6	26.6	30.0	29.6	59.6
2. Equipment & transportation installation	1.5	0.1	1.6	0.4	0.4	0.8
3. Operations & maintenance	3.9	0.4	4.3	0.1	0.0	0.1
4. Consumable materials	3.9	0.4	4.3	0.1	0.0	0.1
5. Baseline Cost	9.3	27.5	36.8	30.6	30.0	60.6
6. Contingencies	2.4	4.1	6.5	1.1		1.1
7. TOTAL	11.7	31.6	43.3	31.7	30.0	61.7

Table 8B: Project Financing

Source	Appraisal Estimate (US\$M)			Actual/Latest Estimate(US\$M)		
	Local Costs	Foreign Costs	Total	Local Costs	Foreign Costs	Total
IBRD/IDA	-	30.0	30.0	0.0	29.6	29.6
Cofinancing Institution	-	-	-	-	-	-
Other External Sources	-	-	-	-	-	-
Domestic Contribution	11.7	1.6	13.3	31.7	-	31.7
TOTAL	11.7	31.6	43.3	31.7	29.6	61.3

Table 9: Economic Costs and Benefits

Not Applicable

Table 10: Status of Legal Covenants

Agreement	Section	Covenant type	Present status	Original fulfillment date	Revised fulfillment date	Description of covenant	Comments
Ln 3314-KO	3.03	10	C			Select each VHS in accordance with agreed criteria	Fulfilled
	4.01(b) (ii)	1	C			Furnish to the Bank audit report not later than June 30 of each year	Completed every year during implementation ,after commencement of the first expenditure
	4.01©(iv)	1	CD			Ensure the audit report contains a separate opinion on the SOEs submitted	After an initial delay. separate opinions on SOEs were submitted annually from year

Covenant types:

- | | |
|--|--|
| 1. = Accounts/audits | 8. = Indigenous people |
| 2. = Financial performance/revenue generation from beneficiaries | 9. = Monitoring, review, and reporting |
| 3. = Flow and utilization of project funds | 10. = Project implementation not covered by categories 1-9 |
| 4. = Counterpart funding | 11. = Sectoral or cross-sectoral budgetary or other resource allocation |
| 5. = Management aspects of the project or executing agency | 12. = Sectoral or cross-sectoral policy/ regulatory/institutional action |
| 6. = Environmental covenants | 13. = Other |
| 7. = Involuntary resettlement | |

8. Present Status:

- C = covenant complied with
 CD = complied with after delay
 CP = complied with partially
 NC = not complied with

Table 11: Compliance with Operational Manual Statements

No significant lack of compliance with applicable Bank manual statements observed.

Table 12: Bank Resources: Staff Inputs

Stage of Project Cycle	Planned		Revised		Actual	
	Weeks	US\$	Weeks	US\$	Weeks	US\$
Through Appraisal	11.4	23.4			11.0	31.0
Appraisal-Board	1.6	4.1			1.6	5.0
Supervision	14.7	39.9			12.2	39.4
Completion	5.5	16.5			1.6	7.5
TOTAL	33.2	83.9			26.4	82.9

Table 13: Bank Resources: Missions

Stage of Project Cycle	Month/Year	Number of Persons	Days in Field	Specialized Staff Skills Represented	Performance Rating		Types of Problems
					Implementation Status	Development Objectives	
Through Appraisal	3-4/90	3	30	Economist and VTE specialists			no significant problems were found in the project
Appraisal through	6/90	3	0				
Board Approval			0				
Board Approval	3/91		0				
through Effectiveness	9/91		0				
Supervision	11/92	2	4	All supervision missions were staffed by VTE specialists and procurement specialists. In some cases the missions were staffed by a single person with dual capability in in both areas.	Rating HS	Rating HS	
	6/92	1	4		Rating HS	Rating HS	
	7/93	2	4		Rating HS	Rating HS	
	12/93	1	4		Rating HS	Rating HS	
	7/94	2	4		Rating HS	Rating HS	
	12/94	2	4		Rating HS	Rating HS	
	7/95	2	4		Rating HS	Rating HS	
	12/95	2	4		Rating HS	Rating HS	
	4/96	1	4		Rating HS	Rating HS	
Completion	10/96	2	4	Rating HS	Rating HS		

Note: Supervision days in the field were calculated as a prorated portion of larger combined missions during which five education projects were supervised in a joint effort.

ANNEXES

REPUBLIC OF KOREA
Project Completion Mission under Loan 3314-KO
Aide Memoire ^{2/}

1. The IBRD Mission ^{3/} visited Korea from October 28, 1996 to November 16, 1996, to review the implementation progress of five World Bank financed projects. Associated with this visit, the mission also collected the necessary information to complete the Implementation Completion Report (ICR) for Loan 3314-KO. During this process, the MOE provided a significant amount of tabular data to support the preparation the ICR and on November 2, 1996, submitted its own evaluation report of the project to the mission. This evaluation report will be attached as an annex to the ICR.

2. During the mission, it was agreed that the Bank would complete the draft ICR and send it to the Government for review and comment, no later than December 1, 1996. The mission encourages the Government to quickly review the document as the ICR must be converted to a final draft ready for submission to the Bank's Board of Directors by December 31, 1996.

3. The mission would also note that the Bank has sent a fax, dated November 20, 1996, to the Ministry of Finance to inform them that as of October 31, 1996, all applications for withdrawal were complete, therefore, the balance of the loan (US\$429,454.18) was canceled as of that date (October 31, 1996).

4. We look forward to receiving your comments after you have had the opportunity to review the draft ICR. The mission would like to take this opportunity to express its appreciation to the MOE staff involved in the ICR process and the hospitality extended to the mission.

November 27, 1996

^{2/} This draft Aide Memoire is subject to review and modification by IBRD Management.

^{3/} The mission was comprised of Robert L. McGough (EA1HR), Sing-Zak Sung, Ian Irvine and Irene Travis (Consultants).

Annex B

**ALLOCATION OF LOAN PROCEEDS TO PARTICIPATING OFFICES OF
EDUCATION FOR SELECTED VOCATIONAL HIGH SCHOOLS (VHSS)**

Offices of Education	Type of Schools and Loan Allocation Amount				Totals	
	Tech	Com	Ag	Fisheries/Marine	Schools	Amount (US\$ 1,000)
Seoul (Municipal)	9 (2423)	24 (1054)	-	-	33	3477
Busan (-do)	6 (1904)	12 (502)	1 (19)	1 (14)	20	2439
Taegu (-do)	4 (1055)	5 (345)	1 (66)	-	10	1466
Inchon (-do)	3 (697)	7 (230)	-	1 (314)	11	1241
Kwangju (provincial)	3 (657)	4 (162)	1 (75)	-	8	894
Taejon (-do)	2 (538)	2 (98)	1 (79)	-	5	715
Kyonggi (-do)	12 (1679)	38 (1048)	6 (525)	-	56	3252
Kangwon (-do)	5 (808)	10 (293)	5 (430)	1 (117)	21	1648
Chungbuk (-do)	6 (903)	7 (363)	3 (417)	-	16	1683
Chungnam (-do)	4 (760)	7 (342)	4 (475)	1 (188)	16	1765
Chonbuk (-do)	3 (743)	13 (565)	3 (370)	-	19	1678
Chonnam (-do)	10 (1029)	16 (447)	7 (605)	4 (476)	37	2557
Kyungbuk (-do)	10 (1264)	2 (613)	5 (414)	3 (428)	40	2719
Kyungnam (-do)	12 (1570)	23 (744)	9 (557)	2 (315)	46	3186
Cheju (-do)	1 (144)	4 (147)	2 (65)	1 (174)	8	530
sub-total	16.174	6.953	4,097	2,026		29,250
National Technical High Schools						
Busan	1 (298)				1	298
Junbuk	1 (295)				1	295
Kumi	1 (157)				1	157
sub-total	3 (750)				3	750
Grand Total	16,924	6,953	4,097	2,026		30,000

REPUBLIC OF KOREA**GOVERNMENT'S EVALUATION REPORT OF LOAN NO. 3314-KO****Submitted as an Input to the
Implementation Completion Report (ICR) for the Project ^{4/}**

1. Summary of the Project

The general purpose of the project was to upgrade technical training of the selected vocational high school in the technical, commercial, agricultural, and fisheries/maritime fields so that their graduates, when employed, can meet skills required in work sites of the above industries, and to help better adapt themselves to their productive and changing technical jobs.

The Loan Agreement for the Vocational Education Project was signed on June 3rd, 1991 and the project was completed on June 30th, 1996. To review achieved purposes of the project, IBRD missions and the related staff of the Ministry of Education, Republic of Korea, visited the project schools and checked project papers, finding no particular problem in completing the project and the relevant Loan No. 3314-KO.

There were limitations in presenting objective figures on how much the technical education of the vocational high schools was upgraded during the project period, which would be an evidence of the development of technical education in vocational high schools from the project. We tried, however, to review achievement of the project by presenting numerical data to the possible extent.

2. Introduction of the Loan

In 1960s when the labor-incentive light industries such as spinning, shoemaking, etc. was the economic base for industrial development, demand for higher skilled workers was rather weak, and the main need at that time was the basic training of the labor force and development of skills. But, coming into the 1970s, the heavy-industries began to develop, and the general industries changed and oriented toward export-expanding ones. Along this trends, demand for skilled workers increased and much concern was paid toward vocational education.

^{4/} Annex C is presented as it was received from the Government, without any modification or editing, with the single exception that some spelling errors were corrected when the ICR was auto-spell checked using the computer.

In 1980s, as industries developed into increasingly technology-incentive production and large-quantity export ones, technical factors of them changed more and more complicated, their development faster, and upgrading the technical education more emphasized.

For leveling up the quality of training facilities in the selected vocational schools by providing specialized equipment and complementary investment for their graduates to cope with the increasingly-complicated functional demand in the manufacturing, commercial, agricultural, and fisheries/maritime fields in the industry, the Korean Government got appropriate agreement from the National Assembly in December 1989, and signed on the relevant agreement with the World Bank for the loan of USD 30 million on June 3, 1991 for the expansion cost of experimental and practice equipment in the selected vocational high schools.

3. Allocation of the Loan Proceeds

The Ministry of Education organized ad hoc deliberative groups of the related experts for the selection of participating schools and equipment items, and made overall allocation of the loan fund among the Offices of Education in the related municipal cities and provinces. The participating schools and equipment items for investment were finally decided by the Supervisor of each Office of Education. The allocations of the loan proceed are given by field in the following Table 3.1.

Table 3.1: ALLOCATION OF THE LOAN PROCEEDS
(USD 1,000)

Offices of Education	Tech field	Agric field	Comm'l field	Fish & Marit fie	Total
Seoul	2,423	-	1,054	-	3,477
Busan	1,904	19	502	14	2,439
Daegu	1,055	66	345	-	1,466
Inchon	697	-	230	314	1,241
Kwangju	657	75	162	-	894
Daejon	538	79	98	-	715
Kyunggi	1,679	525	1,048	-	3,252
Kangwon	808	430	293	117	1,648
Choongbuk	903	417	363	-	1,683
Choongnam	760	475	342	188	1,765
Junbuk	743	370	565	-	1,678
Junnam	1,029	605	447	476	2,557
Kyungbuk	1,264	414	613	428	2,719
Kyungnam	1,570	557	744	315	3,186
Jaiju	144	65	147	174	530
Subtotal	16,174	4,097	6,953	2,026	29,250
Busan Tech. Mech. H.S.	298	-	-	-	298
Junbak Tech. Mech. H.S.	295	-	-	-	295
Gumi Tech. Electr. H.S.	157	-	-	-	157
Subtotal	750	-	-	-	750

4. Provision Status of the Experimental and Practice Equipment

The participating organizations of the project under loan No. 3314-KO for the expansion of experimental and practice equipment in vocational high schools are 15 Offices of Education in municipal cities and provinces, and three national technical schools. Their objective for participation in the project was to upgrade quality of their graduates.

The provision rate of the equipment in the particular schools as of June 1, '91 was only 54.7% on the average, but their rates improved very much to 88.8% in cost through implementation of this project. The provision rate of the equipment supplied under the loan covered 9.0% of the total cost of equipment in the project schools (Table 4.1).

The project has contributed very much to upgrading the technical education by providing high-cost and advanced equipment under this loan, and it also performed a part in providing large quantity of computers, etc. for education.

Table 4.1: PROVISION RATES OF EQUIPMENT
(Won million)

As of June 1, '91			As of June 30, '96			Rate of equip't provided from this loan
Requ'd	Prov'd	Rate	Requ'd	Prov'd	Rate	
313,221	171,47	54.7%	313,221	278,112.3	88.8%	9.0%

5. Experimental and Practice Training

5-1. Operation of joint practice centers

Joint practice centers were visited to review in detail the joint using status of the equipment items procured from the loan in this project. The operative days and trainees of the 27 joint training centers for the 1st half of 1996 as of June 30, '96 are in the following Table 5.1.

Table 5.1: OPERATION OF JOINT PRACTICE CENTERS

Operative Days of Equip't			Number of Trainees			
For Students	For Teachers	Total	'93	'94	'95	Total
36,230	581	36,811	10,312	10,622	15,248	36,282

5-2. Hours for experiments and practice training

It would take quite a long time for observation to estimate quality of technical education upgraded after provision of the equipment in the participating vocational high schools, and it would also be very difficult.

But, the equipment imported from the loan was being utilized very well for experimental and practice training in the vocational high schools of the project.

Hours for experimental and practice training in the project schools from 1991 to 1995 is in the following Table 5.2.

Table 5.1: HOURS FOR EXPERIMENTS AND PRACTICES

Field	Training hours				
	'91	'92	'93	'94	'95
Technical	1,656,959	1,686,242	1,772,739	1,842,652	1,897,161
Agricultural	84,892	85,523	87,208	92,771	94,229
Commercial	183,867	198,910	221,527	238,122	267,008
Fish & Marit	28,517	28,570	28,443	30,533	31,663
Total	1,954,235	1,999,245	2,109,917	2,204,078	2,290,061

5.3. In-service Training of Teachers in the Project Schools

In-service training of teachers on the equipment imported from the loan in the project schools was conducted as in the following Table 5.3.

Table 5.3: IN-SERVICE TRAINING OF TEACHERS FOR '93-'95

Hours of Training	Programs for more than 180 hours	Programs for more than 60 hours but less than 180 hours	Programs for less than 60 hours	Total
Number of trainees	139	621	3,040	3,800

6. Placement of Graduates

The status of graduates from the participating schools of the project is in the Table 6.1. Their rate of employment for 1993 to 1995 was more than 87.6%. Such a high rate might have come from the effective technical training in the project schools. Such training is prerogative for students to adapt themselves to the productive and changing technical jobs, and the good results are judged to have come from the good use of the experimental and practice training items of equipment supplied and installed during the project.

Table 6.1: PLACEMENT OF GRADUATES FOR '93 -'95
(unit : person)

Graduates Total (A)	Licenses of Graduates	Employed (B)	Not employed	Recruited to military service	Rate of employment (C=B/A 100)
539,722	416,092	472,657	63,517	3,606	87.6

7. Benefits of the Project

In 1980s, industries required more and more technology-incentive production, increased exportation, and their technical factors demanded more complicated and fast changes.

To upgrade quality of technical education for students of vocational high schools, the Korean Government has introduced the IBRD loan of USD 30 million for financing expansion of experimental and practice training equipment in vocational high schools.

The Government financed domestic fund of USD 31.7 million equivalent in addition to the loan amount, and provided 365,480 items of equipment in total for five years from 1991 to 1995 to 18 institutions such as municipal and provincial Offices of Education and national technical high schools for their utilization. The provision of equipment by the project has raised provision rates of educational equipment and contributed very much to upgrading the quality of experimental and practice education in Korea.

The Vocational Education Project and the relevant loan have contributed very much to the technical education in vocational high schools in Korea. It could be summarized as follows:

- 1) The provision rate of experimental and practice equipment in the vocational high schools was raised from 54.7% to 88.8% as of June 30, '96 from January 1, '96.
- 2) Operation of joint practice centers has improved, and the number of trainees increased from 10,312 to 15,348 in 1995 from 1991, showing annual increase.
- 3) Hours of experimental and practice training also increased from 1,954,235 hours to 2,290,061 hours in 1995 from 1991, contributing to raising quality of technical education.
- 4) Operational trainings were provided to teacher trainees along importation of the high-cost and advanced equipment and computer-related equipment. The number of trainees, for 1993 to 1995, was 3,800 including 3,040 trainees for programs of 60 hours or less.

The Vocational Education Project and the relevant IBRD loan No. 3314-KO for vocational training are recognized to have contributed much to development of science and technology in Korea in addition to the benefits cited above.

IMAGING

Report No: 16226
Type: ICR