

The Hashemite Kingdom of Jordan

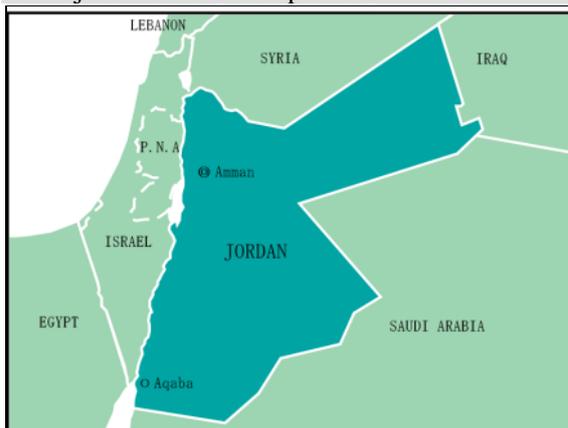
Second Human Resources Development Sector Investment

External Evaluator: International Development Center of Japan

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Field Survey: November 2007, April 2008

1. Project Profile and Japan's ODA Loan



Map of the project area (nationwide)



Part of the Abu-Nusair Vocational Training Center Schoolhouse

1.1 Background

Since the availability of a highly skilled labor force is what attracts direct investments to Jordan, which is otherwise poor in natural resources, provision of high-quality education is unalterably a challenge of national importance to Jordan. In the National Conference on Education Development, which the Government of Jordan hosted in 1987, it is clearly stated that, if the present state and future demand in education are considered, “improving the quality of education” will be the principal challenge facing Jordan in the coming years. Under these circumstances, the Government of Jordan has been striving to upgrade and expand academic and vocational education.

1.2 Objective

The objective of this project is to expand education opportunity, including basic, secondary and vocational education, and to assure its quality, all across Jordan through construction and expansion of school facilities and provision of equipment and furniture targeting (i) comprehensive schools (academic and vocational education), (ii) community colleges (two-year junior colleges), and (iii) vocational training centers (VTCs);¹ thereby contributing to Jordan's

¹ In JICA's appraisal data, only the support for vocational education/training is envisaged, and only the new opportunity for vocational training/education is cited as a main effect contributed by this project. By contrast, according to the internal information of the Government of Jordan, it is clear that the government was expecting support not only for vocational education/training but for academic education including basic education. Thus, there was a gap in understanding between JICA and the Government of Jordan. Additionally, comprehensive schools offer

industrial development.

1.3 Borrower / Executing Agency

Borrower: The Government of the Hashemite Kingdom of Jordan

Executing Agencies: National Center for Human Resources Development (NCHRD) (overall agency), Ministry of Education (MOE), Al-Balqa Applied University (BAU),² Vocational Training Corporation

1.4 Outline of Loan Agreement

Loan Amount / Loan Disbursed Amount	7,123 million yen / 6,027 million yen
Exchange of Notes / Loan Agreement	May 1997 / July 1997
Terms and Conditions - Interest Rate - Repayment Period (Grace Period) - Procurement	Main: 2.7% (Consultant: 2.3%) 30 years (10 years) General untied
Date of Disbursement Completion	November 2005
Main Contractors (1 billion yen or more)	-
Consulting Services (100 million yen or more)	-
Feasibility Study (F/S), etc.	“Ten-Year Education Sector Development Plan (1989–1998)” (prepared jointly by the Government of Jordan and the World Bank)

2. Evaluation Result (Rating: C)

2.1 Relevance (Rating: a)

2.1.1 Relevance on the policy level

At the time of appraisal, the importance of improving the quality of education is highlighted in the Government of Jordan’s “Ten-Year Education Reform Program” (adopted in 1989) and “High-Level Policy Guideline” (adopted in 1994). These include: “response to the natural increase of the school-age population through expansion in the construction of school facilities,” “adoption of an investment program for vocational education/training with emphasis

both vocational secondary education for grades 11–12 (for 16–17 year olds) and academic education. The academic education here refers not only to the academic secondary education from grades 11–12, but in many cases, to the basic education from grades 1 through 10 (for 6–15 year olds.) In many comprehensive schools, the enrollment capacity for academic secondary education is several times the enrollment capacity for vocational secondary education, so in practice, the former is emphasized more than the latter. Consequently, because evaluation based on the premise that only vocational education/training ought to be supported was considered unreasonable, following the requisition of the Government of Jordan, the project was evaluated within a range wide enough to allow evaluators to evaluate not only vocational education/training but also academic education.

² Al-Balqa Applied University, in addition to offering its own academic education, serves as a regulatory authority over community colleges that offer applied technical studies.

on linkage to the labor market and production centers,” “improvement of teacher quality and treatment,” and “promotion of decentralization of school administration.” At the time of appraisal, these priority policies constituted this project’s policy framework, so the “construction and expansion of school facilities” adopted as the objective of this project was consistent with the said framework.

At the time of ex-post evaluation, the aforementioned “Ten-Year Education Reform Program” was regarded as the basic policy framework in the education sector, and at the present point in time, it can be said that the objective of this project is consistent with Jordan’s national education policy.

2.1.2 Relevance at the enforcement level

At the time of appraisal, with the support of the World Bank, the Government of Jordan adopted the “Human Resources Development Sector Investment Loan” (implemented in two phases: HRDSIL I & HRDSIL II) as a concrete measure of the government policy. The objective of HRDSIL II was “to improve the quality of Jordan’s primary/secondary and vocational/technical education, as well as to enhance the institution and its implementation in the education sector”³ Thus, the objective of HRDSIL II was consistent with the objective of this project. HRDSIL II was comprised of three components: “evolution of the qualitative effectiveness of reform,” “institutional reform,” and “maintenance and improvement of facilities and equipment to support teaching and learning.” A total of US\$186.66 million was budgeted to implement HRDSIL II, of which the Government of Jordan was to provide US\$76.66 million dollars, the World Bank US\$50 million, and cooperating organizations US\$60 million. Japan’s ODA loans were budgeted to support the cooperating organization portion (US\$60 million), which, from the financial perspective, shows that, at the time of appraisal, the HRDSIL project was implemented under a clear division of roles among the three donors.

2.1.3 Relevance at the project level

At the time of appraisal, in order to press forward with vocational education/training to upgrade domestic industry, the goal of the Government of Jordan at different types of schools – including VTCs⁴ community colleges⁵ and comprehensive schools – was to meet the urgent

³ Based on the World Bank (1995): “Loan agreement of HRDSIL II”

⁴ It corresponds to a vocational school in Japan. In addition to the secondary school graduates (grade 12 graduates), the basic education curriculum graduates (grades 10 graduates) can also enroll in VTCs. The students have a choice of 1-year or 2-year courses. In addition, students can take subjects separately, and majors are offered in a wide range of fields including: automotive repair, household machine repair, industrial machine repair, information processing, office administration, furnishings, hairdressing, metalcraft, sewing machine technology, pâtissier, sewing machine operation, and molding. Four levels of training are offered in each of these majors: craftsman level, skilled level, limited skilled level, and upgrading programs. When one completes a course, one receives a certificate of completion.

⁵ Although the term for completing a course at a junior college (co-educational) was 2 years, in recent years, some junior colleges are trying to become four-year colleges. Majors offered at these colleges are as varied as those offered at VTCs and include: engineering (electric engineering, automotive engineering, food processing, environmental engineering, mineral processing, etc.), business management, hotel management, data processing, and accounting. Upon completion of a course, a student can receive a wide range of academic degrees.

need to construct new school buildings and expand existing ones as well as provide equipment and furniture. Therefore, the support provided by this project effectively responded to these needs. Additionally, since the number of school-age children continued to increase, the need for construction of new facilities and expansion of existing ones for academic education for grades 1 to 12 remained urgent. It can be concluded that this project appropriately met not only the needs of vocational education/training but those of academic education including basic education.

At the time of ex-post evaluation, the objective of this project and the contents of the support provided under this project were consistent. Thus, overall the project was highly relevant. That said, it is widely recognized that a huge gap has once again appeared between the education/training provided under this project and the needs of the labor market because of the technological advances that have been made since the project appraisal. In addition, the need to have the skills required to handle today's operating machines is greater than the need for traditional skills, and so a partial gap in needs has begun to appear.

Given the recognition, at the time of appraisal as well as at the time of ex-post evaluation, that the measures pursued under this project were necessary and consistent with Jordan's national development programs, the project was highly relevant.

2.2 Efficiency (Rating: b)

2.2.1 Outputs

Table 1 shows the number of schools that were initially planned to be supported and the number of schools that were actually under this project. Initially, 82 schools were to be supported, whereas 81 schools were actually supported. The number of community colleges targeted to be supported (expansion and procurement of equipment and furniture) was reduced by 1 college, which is that Tafila Community College. This college was promoted from a community college to a university, and as a result, the Government of Jordan removed it from its list of colleges to be supported under this project. Therefore, it can be judged that, for all practical purposes, the project was implemented as originally planned. The consulting services were also provided as planned (25 M/M). Regarding newly constructed schools under the project, 50% of comprehensive schools and all three new VTCs were for girls. This was due to the Government of Jordan's one of the priorities set on the enhancement of education/vocational training opportunities for girls.

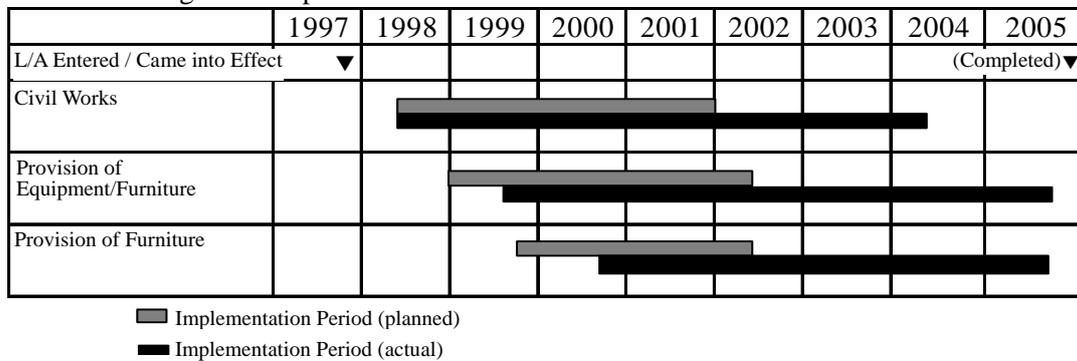
Table 1: Numbers and Types of Schools

Type of school	Type of support	Planned	Actual
(i) Comprehensive Schools	New construction	31	31
	Vocational additions to academic schools	21	21
	Modernization of equipment/furniture (Including the above new construction and additions)	66	66
(ii) Community Colleges	Upgrading (Civil works)	7	7
	Upgrading (Equipment/furniture) (Including the above additions)	11	10
(iii) VTCs	New Construction (Buildings)	3	3
	Equipment/furniture (Including the above new construction)	5	5
Total		82	81

2.2.2 Project period

The planned implementation period was from July 1997 to June 2002 (5 years, definition of project completion: completion of the construction), but the actual period was from July 1997 to November 2005 (8 years and 5 months, definition of project completion: date of disbursement completion). Thus, the actual implementation period largely exceeded the planned period (168% of the planned period) (see Fig. 1).

Figure 1: Implementation Schedule



Source: JBIC Appraisal Report, L/A, NCHRD Quarterly Report (June 30, 2004 & Nov., 13, 2005)

References: Described in Quarterly Project Report June 30, 2004 & Nov. 13.2005)
(First day of the contract signed – final day of the contract signed)

	Comprehensive School	Community College	VTC
Civil Works	1998/6/23-2004/4/29	1999/8/28-2000/12/17	1999/3/13-2001/9/30
Provision of Equipment/Furniture	1999/9/21-2004/3/5	2000/1/11-2003/3/8	2000/1/25-2004/4/8
Provision of Furniture	2001/5/7-2003/4/16	2001/5/1-2001/9/17	2000/11/6-2003/3/17

Source: JBIC Appraisal Report, NCHRD Quarterly Report (June 30, 2004 & Nov., 13, 2005)

Note: The final day of contract refers to the day when the final package agreement was reached. According to the executing agencies, provision of equipment and furniture and the procurement of furniture continued till the second half of 2005. Fig 1 was prepared based on that information. Thus, there is a discrepancy between Fig.1 (implementation period) and the below reference schedule.

Since many schools were targeted under this project and no unified completion ceremonies were

held, the project completion date came on the date of disbursement completion (November 13, 2005). The procurement procedure that adhered closely to the rules set by the Government of Jordan, delays in the payment for suppliers, and delays of construction work were the principal reasons for the delay in the project implementation

2.2.3 Project cost

The actual ODA loan portion was 15% less than the planned amount. The approved loan amount was 7,123 million yen, whereas the actual disbursement was 6,027 million yen. The reduction in the loan amount was owing to the competitive bidding; companies that bid the lowest in the domestic competitive bidding were selected. With regard to HRDSIL II as a whole, which includes this project, while the planned loan amount was US\$186.66 million, the actual amount was US\$183.27 million, or slightly less than the amount that was originally planned according to the final report prepared by the World Bank. However, since the Government of Jordan has not calculated the cost of HRDSIL II limited to this project, in this chapter, only the ODA loan amount was compared in terms of planned and actual costs.

Consequently, the project output was as planned and its cost was less than planned; however the implementation period far exceeded the original plan. Thus, overall, the project was judged to be moderately efficient.

2.3 Effectiveness (Rating: b)

2.3.1 Comprehensive schools

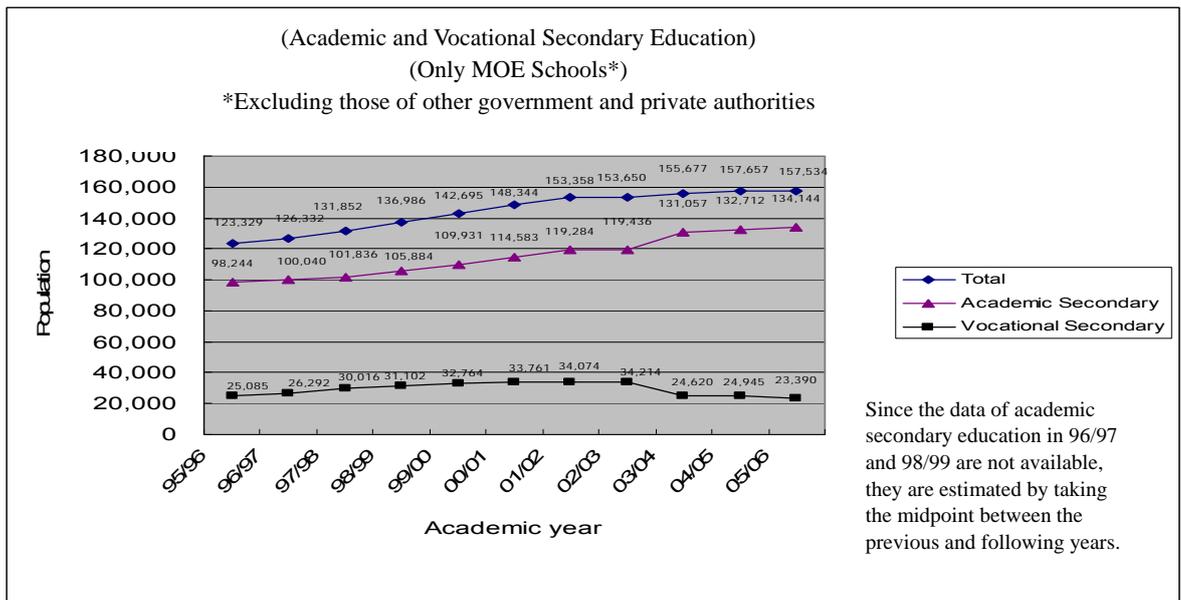
(1) Enrollment changes (grades 11, 12) in comprehensive schools nationwide

Figure 2 shows the enrollment changes (grades 11, 12) in comprehensive schools, (academic secondary and vocational secondary education), as well as the sum total of the changes. Since the implementation period was extended by more than 3 years, the enrollment envisioned at the time of appraisal (143,125 students) was virtually realized. However, while the enrollment in academic secondary education has been increasing every year by about 3.5%, that in vocational secondary education has leveled off after the increase up to 2003. This is partially due to the fact that a number of majors in vocational secondary education were moved to academic secondary education. However, even if students taking these majors are counted, the growth in the enrollment in vocational secondary education has leveled off. The Ministry of Education recognizes the decrease in the actual enrollment in vocational secondary education.

As shown in Figure 2, the ratio of enrollment in vocational secondary education to the total enrollment in secondary education is continuously declining. In FY2005/06, it was down to 14.8% (= 23,390 / 157,534). This continuous decline is explained as students' consistent preference towards academic secondary education, resulting in the weaker demand for

vocational secondary education than was originally envisioned. According to the appraisal documents, in which the purpose and method of establishing comprehensive schools is explained, as well as the internal information ⁶ of the Ministry of Education, a goal was set to “increase the percentage of students in vocational education against total enrollment in secondary education to 50% for males and to 35% for females by the year 2000.” This was nowhere close to reality. However, the question whether the objective itself was realistic or not is a question that should be debated separately.

Figure 2: Enrollment changes in comprehensive schools



Source: Statistical Yearbook 1996, 1998, 2000, 2001, 2002, 2003, 2004, 2005, 2006

(2) Filling rate

At the time of the ex-post evaluation, an interview survey was conducted for 7 comprehensive schools. According to the survey result, the ratio of students (both those in academic and vocational secondary education) to the school capacity to accommodate them (hereafter enrollment capacity) varied substantially from school to school. Principals of the seven comprehensive schools estimated the average filling rate around 70%; 90% or higher for academic secondary education and in the vicinity of 50% for vocational secondary education although estimated figures varied considerably from major to major. However, it can be concluded that in vocational secondary education, the actual enrollment was far from full enrollment originally envisaged.

(3) Graduation rate and career options after graduation

According to the interview survey for the 7 comprehensive schools, the graduation rate of

⁶ Ministry of Education (1997) *Development of Vocational Education in the MOE*. “Enrollment in vocational programs has been encouraged by the Government of Jordan’s policy of targeting 50% of male students and 35% of female students for vocational education by the year 2000”. (p.6)

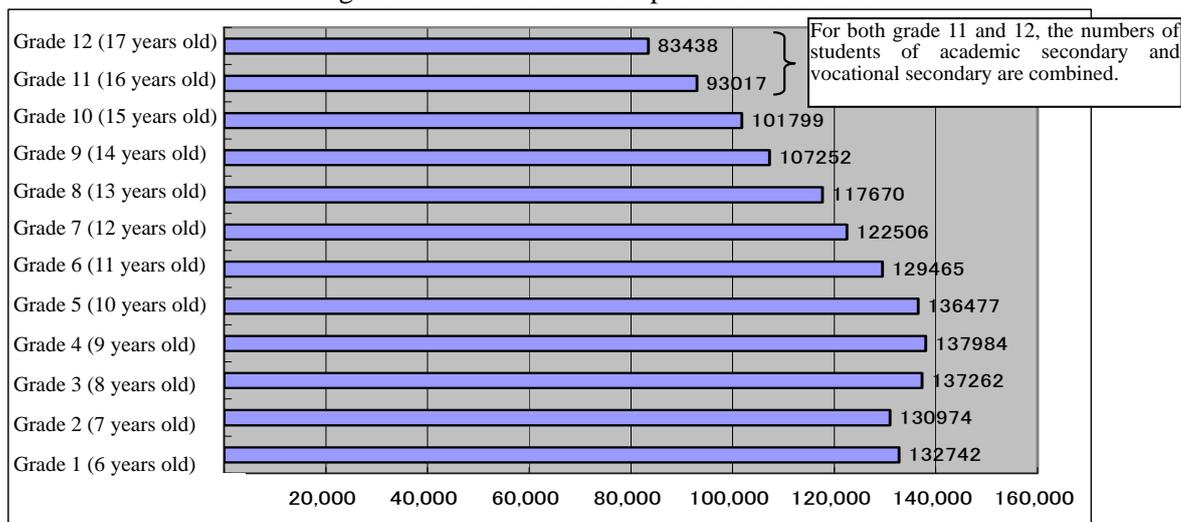
those in academic secondary education (percentage of those who passed graduation exams against total enrollment in grade 12) was almost 100%. Nearly all of the graduates went on to universities or community colleges. Meanwhile, the graduation rate of those in vocational secondary education differed from major to major. However, the rate is estimated around the national average, 55% or thereabouts. One reason for the low graduation rate is that many students who were refused admission to academic secondary education due to lack of academic ability opted to enroll in vocational secondary education.

The employment rates after graduation differed greatly depending on the student’s major and the region they come from. A glance at the difference based on major studied reveals that, while the employment rate hovered in the vicinity of 60% for majors in high-demand such as hotel management, it dropped to 10% or lower for unpopular majors such as woodwork. As for the difference in employment rates by region, those in schools located in urban areas where industries are concentrated were high, while the rates were low in schools located in rural areas where there are few industries.

(4) Effectiveness of the project in academic education at comprehensive schools

Project support was provided to “comprehensive schools,” where, in addition to vocational secondary education, academic secondary (grades 11, 12) and basic (up to grade 10) education are offered. According to the hearings from the survey at the time of ex-post evaluation, the enrollment capacities in academic secondary and basic education were nearly filled at most schools. There were even some cases where the actual enrollment was beyond school enrollment capacities. In addition, a comparison between the enrollment in grade 10 and grade 11 (though the two groups are not easily compared), the rate of students continuing on to grades 11 and 12, is estimated to be rather high (see Fig. 3).

Figure 3: Enrollment in comprehensive schools



Source: MOE (2005). Educational Statistical Yearbook 2005
 Note: The number of students attending school in dual shift is not included.

Although there were 1.07 million students enrolled in the basic education in 1995/96, five years later, in 2000/01, there were 1.17 million students, and today, in 2004/05, there are 1.27 million students in basic education, forming an annual growth rate of over 2%. The breakdown of enrollment in basic education is presented in Figure 3. Since the number of children reaching the age corresponding to grades 11 and 12 is expected to increase sharply in the coming years, further increases in enrollment capacities at comprehensive schools that offer courses not only in vocational secondary education but also in academic secondary education will be essential.

(5) Evaluation of effectiveness at comprehensive schools under the project

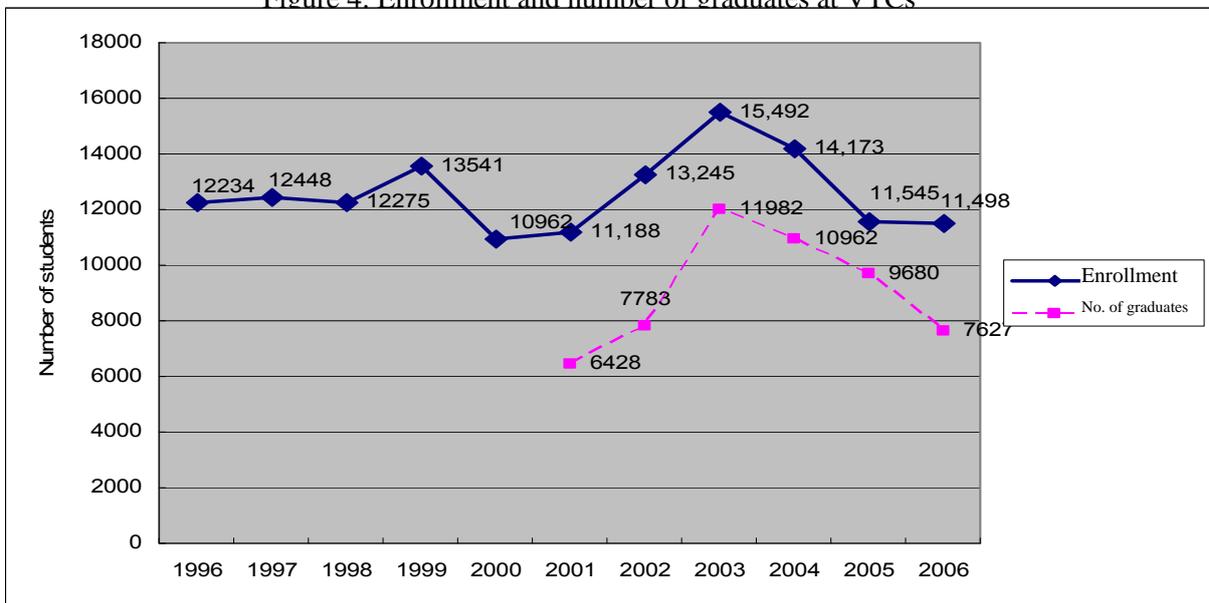
From the foregoing analysis, it can be judged that the support for the academic secondary education of comprehensive schools was highly effective. On the other hand, from the filling rate, graduation rate and employment rate, support for the vocational secondary component was less effective.

2.3.2 Vocational training centers (VTCs)

(1) Enrollment changes at VTCs nationwide

Enrollment changes at nationwide VTCs (total and by program) and the number of graduates are shown in Figure 4 below. However, only data on graduates since 2001 are available. Although enrollment has fluctuated repeatedly since 1996, generally speaking, it has remained unchanged.

Figure 4: Enrollment and number of graduates at VTCs



Sources: VTC Annual Report 1996–2006

(2) Rate of contribution to capacity

In 2006, the total enrollment capacity at VTCs (46 centers) was 6,038, while the enrollment capacity at five VTCs supported under this project was 970. Thus, the support provided under this project contributed 16.1% of the occupancy load for the national VTC

system. Three of the five VTCs were newly built; the remaining two were existing VTCs that were provided with equipment and furniture under this project. Enrollment of the three newly built VTCs was 531. Thus, the contribution of the construction of the three VTCs to the total enrollment capacity of the 46 VTCs was 8.8%. Similarly, the area of land (one of the indicators for school capacity) of the 46 VTC facilities is 115,296 square meters, while that of the three new VTCs supported under this project was 9,343 square meters. Thus, the contribution rate to the total area of land of the 46 VTCs was 8.1%. As mentioned earlier, all three newly constructed VTCs were for girls, which is indicative of the contribution to the enhancement of vocational education/training opportunities for girls.

(3) Filling rate

Table 2 shows the filling rates at the five VTCs supported under this project. For reference, Table 2 also sets the average filling rate for the entire country (2006) at 103.1%. According to Table 2, the filling rates are 169.4% at Yajouz VTC, 98.0% at Middle Ghor VTC, 82.2% at Madaba VTC, 73.9% at Abu-Nusair, and 43.7% at Zarqa VTC. While the enrollment capacity for the five VTCs was 970, enrollment of regular trainees was 1,012, resulting in a filling rate of 104.3%. Enrollment at Yajouz VTC greatly exceeded the enrollment capacity, while enrollment at the other four VTCs is less than their enrollment capacities, with Zarqa VTC having a filling rate of less than 50%. Regarding the disparity among the five VTCs, the following trends were observed: (i) As with the comprehensive schools, there are majors that have high filling rates and those with low filling rates; and (ii) VTCs located in areas where industries are concentrated tend to have high filling rates, while VTCs located in areas where there are few industries tend to have low filling rates.

Table 2: Current enrollment, enrollment capacity, and filling rate at VTCs

VTC Name	Regular Trainees			Capacity	Filling Rate
	M	F	Total		
Yajouz	553	18	571	337	169.4%
Middle Ghor	100	0	100	102	98.0%
Zarqa	11	82	93	213	43.7%
Madaba	1	128	129	157	82.2%
Abu-Nusair	13	106	119	161	73.9%
JBIC-supported VTCs (5)	678	334	1,012	970	104.3%
Total (37 VTCs, excluding 9 special centers)	5,158	962	6,120	5,934	103.1%

Source: VTC Annual Report, 2006

Note: Numerical values in Table 2 are only for regular trainees and do not include students in short-term programs (registration by subject)

It is important to keep in mind the difficulty of calculating the filling rate of VTCs. This is because, in addition to regular full-time trainees, there are many trainees who are on short-term programs. Although the latter are enrolled, many of them actually do not go to school, and their number has reached a scale that can no longer be ignored (these trainees enroll for the purpose

of receiving financial incentives through job training (internship) arranged by VTCs.)

(4) Employment rate and career options after graduation

According to interviews conducted at the ex-post evaluation survey, the average employment rate among the project-supported VTC graduates was estimated to be 55–65%, although the rate actually varied from VTC to VTC. At 65–75%, the employment rate at Abu Nsair VTC was high, while at Zarqa VTC, influenced by the fact that the VTC is for girls and located in a conservative area, the employment rate remained low at 10–15%, according to the estimation by their principals. However, if the VTCs had not been established, the female employment rate of the relevant age in the targeted area could have been nearly zero, so the fact that there was even a slight improvement deserves to be evaluated as a positive effect of the project.

A quick survey of the employment rate by major shows that it was 100% for “secretarial training” and “computer programming,” around 80% for “goldsmithing” and between 50–60% for other traditional majors (“furnishings,” etc.).

(5) Evaluation of effectiveness at VTCs under the project

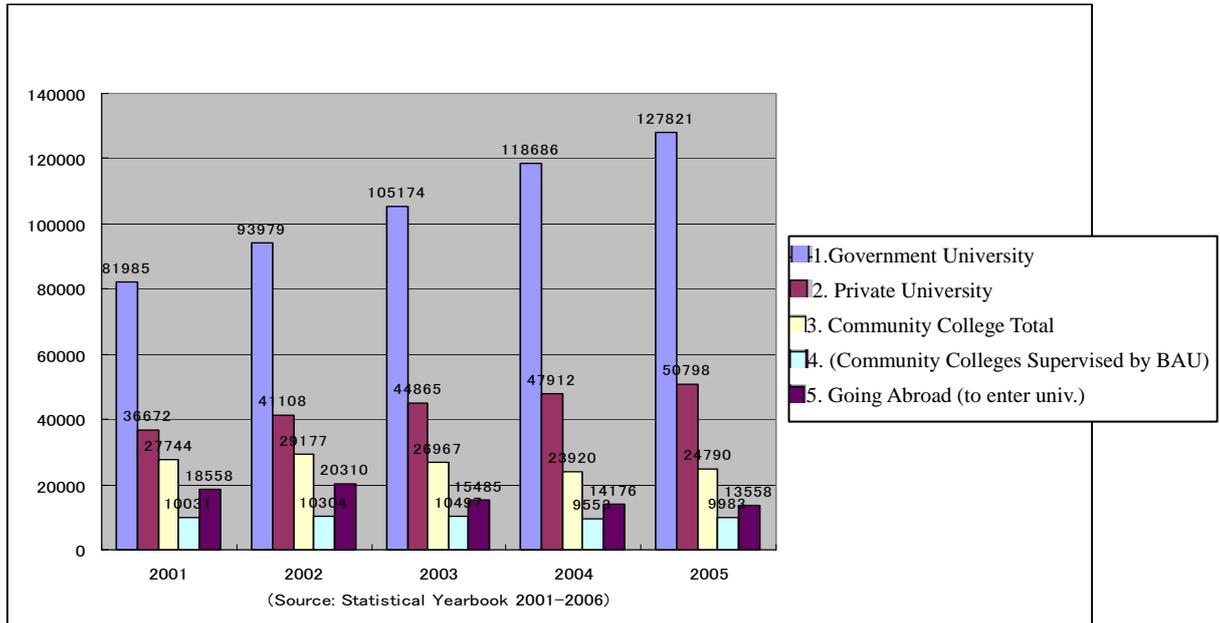
For the following reasons, it has to be concluded that the effectiveness of the project at VTCs was limited: (i) the enrollment at VTCs has leveled off; (ii) filling rates at some VTCs are lower than the national average; (iii) while there are differences depending on major or region, in most cases, the employment rate is estimated to be around 60%; and (iv) the number of graduates has tended to be on the decline in recent years. However, as will be noted later, the project brought about benefits that could not be measured from these numbers alone, including promotion of vocational education/training for girls, social stability, and contribution to the regional economy.

2.3.3 Community colleges

(1) Enrollment changes in community college nationwide

Enrollment changes in universities (undergraduate students) and community colleges are shown in Figure 5. Enrollment is increasing at four-year government universities and four-year private universities. On the other hand, the enrollment at community colleges is increasing only slightly. The enrollment at community colleges that are under the supervision of Al-Balqa Applied University, which account for nearly 40% of the total enrollment capacity at community colleges nationwide, has leveled off. This reflects Jordan’s emphasis on higher education, and students’ general preference towards four-year universities to community colleges (two-year junior colleges). In response to this trend, community colleges are endeavoring to reform by becoming four-year colleges.

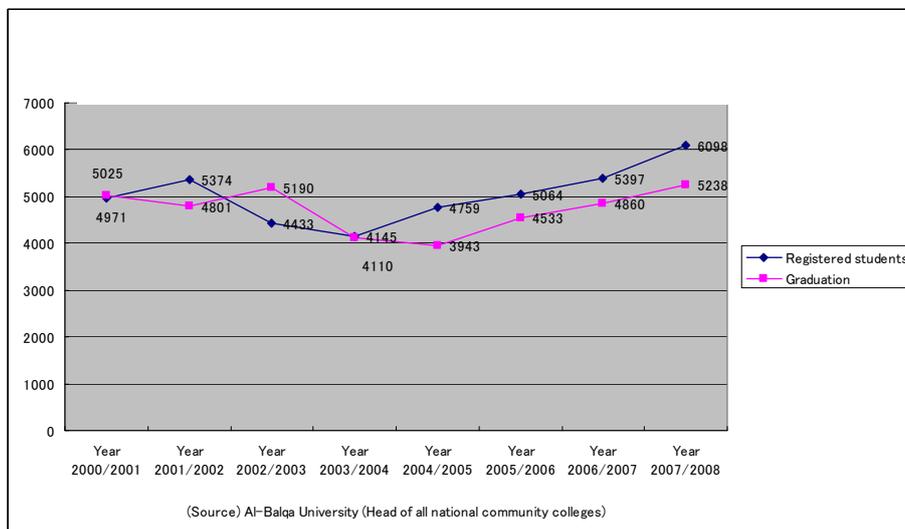
Figure 5: Enrollment changes at community colleges and universities



(2) Enrollment changes at community colleges supported under the project

According to data obtained from Al-Balqa Applied University, the university that supervises the community colleges, in 2007/08, there were a total of 6,098 students enrolled in the 10 community colleges supported under the project (see Fig. 6). It should be noted that, as can be seen in Figure 6, the enrollment decreased from 5,025 in 2000/01 to 4,145 in 2003/04, but continued to increase after that. The earlier drop in enrollment resulted from the enrollment capacity increase at four-year government universities and private universities. The subsequent increase in enrollment is the result of efforts made by the community colleges themselves to transform into four-year colleges and to adopt effective management strategies.

Figure 6: Enrollment changes at community colleges supported under the project



(3) Graduation rate and career options after graduation

The graduation rate for students enrolled in community colleges supported under this project is near 100%. Although data on the employment rate of community colleges nationwide have not been collected, according to hearings at Al-Husson College, one of 10 community colleges supported under this project, the actual employment rate of graduates over the past few years has been around 85% (but around 55% for female students). Moreover, after completing their first two years, a considerable number of graduates take the examination for admission as transfer students to a four-year course.

(4) Evaluation of effectiveness at community colleges under the project

The enrollment at community colleges nationwide and the enrollment at community colleges under Al-Balqa Applied University's supervision (15 colleges) have leveled off or have decreased slightly. Amid this trend, the enrollment at community colleges supported under this project has increased. Additionally, the support provided by this project was effective on college-level advanced technical education.

2.3.4 Internal rate of return (IRR) calculation

Benefits of investing in education, which are measured by the wage increase as a result of one's education, are calculated as IRR. In this ex-post evaluation, wage functions were estimated on the basis of data collected in a survey for company employees, and the IRR was calculated by type of school using a cost-benefit analysis. Specifically, cost and benefit were set as shown in Table 8 below.

Table 8: Cost and benefit by type of school in IRR calculation

	Cost	Benefit
Comprehensive Schools (Grades 11 and Higher) - Academic Secondary Education	Various types of cost incurred by the government (including ODA loans) and individuals (students) to enable students to complete academic secondary education (grades 11 and higher)	Income differential between those who complete academic secondary education (12 th graders) and those who complete only basic education
Comprehensive Schools (Grades 11 and Higher) - Vocational Secondary Education	Various types of cost incurred by the government (including ODA loans) and individuals (students) to enable students to complete vocational secondary education (grades 11 and higher)	Income differential between those who complete vocational secondary education (12 th graders) and those who complete basic education
VTCs	Various types of cost incurred by the government (including ODA loans) and individuals (students) to enable students to graduate from a VTC	Income differential between those who graduate from a VTC and those who complete basic education
Community Colleges	Various types of cost incurred by the government (including ODA loans) and individuals (students) to enable students to graduate from a community college	Income differential between those who graduate from a community college and those who complete academic secondary education (12 th graders) in a comprehensive school

If one were to hypothesize that the filling rate for male students were 100% and all of them graduated and found employment, among the different types of schools, community college graduates would have the highest IRR (19.7%), and those who completed vocational secondary education in comprehensive schools would have the lowest IRR (13.2%). However, in reality, not all graduates join the labor force, and not all those who join the labor force become gainfully employed; instead, many become jobless. If the employment rate were to drop to around 70%, IRRs for most types of schools would be nearly 0%. If the multiplication of the filling rate by the graduation rate were in the range of 50–80% (depending on types of schools) and the employment rate were 80%, then IRR would be highest at 11.1% for community college graduates and lowest at 3.6% for graduates of vocational secondary education. Based on available labor statistics, IRRs in this range would be average and probable values in reality.

With regard to female students, if the filling rate for female students were 100% and all of them graduated and found employment, the IRR for community college graduates would be 21.6%, while the IRR for graduates of vocational secondary education in comprehensive schools would be 12.9%. In reality, if the multiplication of the filling rate by the graduation rate were in the range of 50–80% and the employment rate were 60%, IRR for female would not be in the positive for anyone but community college graduates.

A comprehensive calculation (based on these IRRs) of just how much of the impact from this whole investment including the ODA loan is provided reveals that the IRR would be 15.9% if the filling rate and graduation rate were 100%. However, in reality, neither the filling rate nor the graduation rate is ever 100%. Furthermore, the number of graduates who have found employment is especially small among female students. As a result, unemployment among female graduates is high. Thus, if the multiplication of the filling rate by the graduation rate were in the range of 50–80% and the employment rate were 80% for men and 60% for women, the final estimated IRR calculated by taking into consideration the unemployment rate of graduates of subordinate schools would be 3.1%.

The amount invested in the project is considered to be accumulated within the graduates of Jordan's school system as human capital. However, women are all too often kept at home and are unable to utilize their skills to earn a commensurate salary. Nevertheless, each level of education should be provided at the appropriate time, as there is no guarantee of there being an opportunity to receive education in the future. Thus, there is nothing wrong with the policy of providing large numbers of people with the opportunity to receive education to develop their career options in the future. If the human capital which today appears to be kept at home possibly contributes to enhancing family environments and stimulating the future generation, then no one will be able to argue that the money invested in developing human resources was a social waste.

2.3.5 Qualitative effects

(1) Improvements in the quality of vocational education/training

Under this project, new majors were established in the comprehensive schools (vocational secondary education), community colleges and VTCs, resulting in the improvement of the overall quality of vocational education/training. The quality of vocational education/training was also improved in the existing majors (based on interviews held at six comprehensive schools, three community colleges, and three VTCs).

(2) Provision of vocational education/training that meets market needs

Many of the schools visited during the ex-post evaluation had conducted either a market needs survey or an employment survey for the graduates. Community colleges have incorporated the survey results into their own curriculums. In the case of VTCs, curriculum changes are made at the headquarters, and it is up to individual VTCs to design their teaching method and the like to reflect changes made at the headquarters. In the case of comprehensive schools, curriculums are revised under the unified guidance of the Ministry of Education.

(3) Improvements in the quality of academic education

The quality of academic education was improved. For instance, in addition to reducing rented school facilities and the number of schools with double shifts, improvements were made in such areas as reduction of the number of students per classroom.

2.4 Impact

Higher goals set under this project have been realized, and to some extent, the project has contributed to achieve the goals. Furthermore, the social impact of the project that was not clearly envisioned at the beginning has been realized.

2.4.1 Beneficiary survey

(1) Survey results for school principals (see Fig. 7)

A beneficiary survey was conducted for principals of three types of schools to discover the level of the impact created by the support under this project. The results are summarized below.

(i) Comprehensive schools

To all items included in the beneficiary survey, the principals of comprehensive schools gave marks higher than “3” (“Hard to Tell”), which, in other words, were positive marks. However, as a group the principals of comprehensive schools did not rate the impact of the project as highly as did principals in community colleges and VTCs. Principals of comprehensive schools gave high marks to items like “Enhancing flexibility, responsiveness and efficiency of programs.” However, high marks for these items may rather represent the

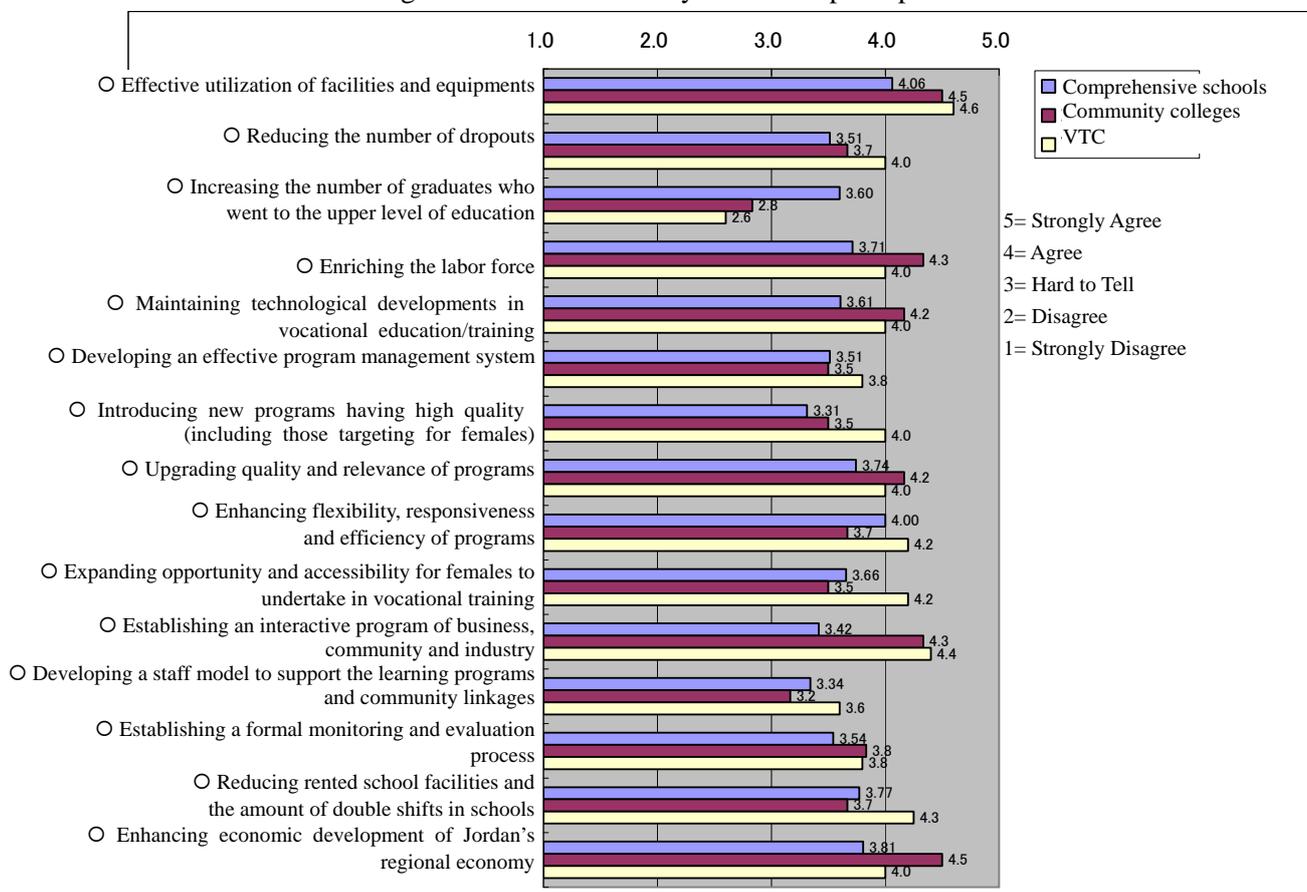
principals' satisfaction towards the availability of academic secondary and basic (below grade 10) education in comprehensive schools. In addition, for the item "Increasing the number of graduates who went to the upper level of education," comprehensive schools got higher marks than did community colleges and VTCs. This result will largely represent the principals' satisfaction towards the positive effects their schools had in academic (secondary and basic) education. Taken as a whole, the results of the beneficiary survey for comprehensive school principals rather represent their overall views towards comprehensive schools than vocational secondary education.

(ii) Community colleges

In the beneficiary survey for community college principals, the highest marks were earned by the item "Enhancing the development of Jordan's regional economy," followed by items like "Establishing the interactive programs of business, community and industry" and "Enriching the labor force." These responses naturally reflect the fact that community colleges represent the last learning opportunity most people have before they enter the labor force. For the same reason, the item "Increasing the number of graduates who went to the upper level of education" earned low marks from the principals of community colleges.

All in all, the contribution of the support provided by this project was positively evaluated.

Figure 7: Results of survey for school principals



Source: Survey conducted by the evaluation team

(iii) Vocational training centers (VTCs)

Most items earned grade “4” (“Agree”). All in all, the contribution of the support provided by this project was positively evaluated.

(2) Survey results for employers, graduates and current students

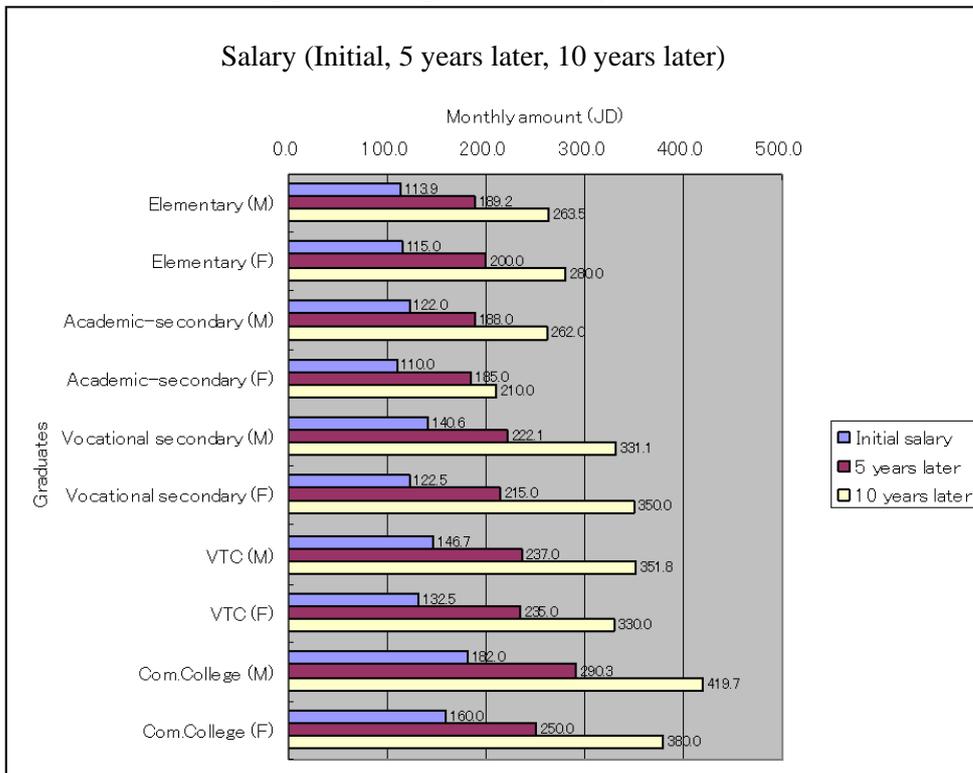
In this ex-post evaluation, in addition to a survey for principals, a beneficiary survey for employers, graduates (employees) and current students was conducted. As a result, a range of matters related to satisfaction with the vocational education/training under this project and its impact were identified as follows.

(i) Survey results for employers

An employer survey was conducted on personnel who had participated in vocational education/training (including graduates of schools not supported under this project). A total of 41 employers were sampled: 17 were in manufacturing with a few employees and 34 were in the repair, operation and maintenance business. The survey yielded the following results:

- Ninety percent of employers said that they would give positive consideration to their experience with vocational education/training in hiring employees and determining their salary (slightly under 20% said they would give very positive consideration, over 70% said somewhat positive consideration).

Figure 8: Changes in the salary base of graduates



Source: A survey conducted by the evaluation team

Note: “Elementary” in the figure refers to those who became employed as soon as they completed compulsory/basic education (grade 10, 15 years old).

- As for salary, the general rule is this: the longer people work, the higher their salary. That said, community college graduates are regarded highest by employers, followed by VTC graduates, and graduates of vocational secondary education (see Fig. 8). The difference between VTC graduates and graduates of vocational secondary education is minimal, but community college graduates are evaluated much more highly than either of them, and they earn 20–30% more. Additionally, graduates from academic secondary education and basic education earn less than the other groups, and there is not much difference among these two groups in how they are regarded by employers.

(ii) Survey results for graduates (employees)

A beneficiary survey was conducted for a sample of 329 graduates (slightly over 10% of which were female) from schools supported under this project. The average age of those sampled was around 30, with work experience for their current employers of 4 to 5 years. The survey yielded the following results on vocational education/training:

- As motivations for pursuing vocational education/training, a high percentage of graduates tended to select “get a better job,” “obtain a high salary” and “obtain technical skills for work,” and less graduates expressed “obtain a high position.”
- Regarding the quality of teaching they experienced while in school, the respondents gave slightly lower marks for the items “classroom lectures were useful for present job” and “classroom lectures were practical enough.” However, overall, the graduates expressed satisfaction with their classes.
- Most graduates expressed that their initial salary was higher than other employees who have not received vocational education/training. (The degree of “higher” varied greatly from a few percent to thirty percent.)
- The initial salary of community college graduates is the highest, followed by that of graduates of comprehensive schools (vocational secondary education) and then VTC graduates. At the time of ex-post evaluation, up to when most of the graduates had spent around six to seven years on their current jobs (not necessarily with their current employers for the whole period), the salary of community college graduates was slightly higher, but there was not much differences in terms of salary of the other two groups.

(iii) Survey results for current students

A beneficiary survey was conducted for 2,305 students, 50% of which enrolled in comprehensive schools (vocational secondary education), about 40% in community colleges, and slightly over 10% in VTCs. The male-female ratio was 2 to 1 in favor of males. Most of them were from the schools supported under this project, but some were not. The following

points were confirmed:

- More students chose vocational education/training, not because their parents told them to, but of their own will.
- Students expressed their motivation to undertake vocational education/training as being to “get a better job” and “obtain a high salary.” They expected their salary to be 25 to 30% higher than those without such education/training. (More than half expressed their expectation of receiving a salary 30% higher than those without such training/education.)
- On average, current students responded with “60 to 70%” in regard to the question of “How much of the contents of schooling/training have you mastered?”

2.4.3 Upgrading the industrial structure

The ratio of manufacturing to GDP grew from 13.2% in 1998 when this project was started to 16.2% in 2005 when it was completed (Statistical Yearbook 2006, p. 229). It can be surmised that to some extent this project contributed to the growth in GDP (inferred from interviews with VTC principals). That said, after undergoing vocational education/training, many graduates accumulate several years of work experience in their specified area and set up their own business with limited capital. Thus, many are micro manufacturers with low levels of technology and facilities.

2.4.4 Realizing women’s advance into society

This project contributed to the advancement of women by helping them develop the skills necessary for finding employment. Their job descriptions include craftwork, furnishings, computer operation and secretarial duties. On the other hand, there are regions in Jordan where parents do not favorably view having daughters find employment after graduation even though they send them to school. This issue cannot be solved by any technical support provided by this or other projects (based on interviews with school principals and interviews with corporate managers). In such regions, the employment rate for female graduates is low. In the meantime, while there are differences in women’s advancement in employment depending on the major or the region, there are no differences depending on the type of school the attended (i.e. vocational secondary education at comprehensive schools or VTCs).

2.4.5 Social stability

The number of young people employed increased through the development of their vocational skills, and as a result, social stability was enhanced (based on an interview with the president of Al-Balqa Applied University, the supervising agency of this project).

Jordan, though a small sized country located adjacent to Palestine and Iraq, which are involved in domestic disputes, has been proud of its domestic stability for a long time. This has been realized by its effective diplomacy and domestic administration, which has been encouraging direct investment from foreign countries over the recent few years. This has

eventually helped to realize its national economic development. Due to the lack of natural resources, the people of Jordan are aware that domestic stability determines national strength. Therefore, the Government of Jordan's strategy is to ensure national unity and fairness among its people including those in provincial areas through its policies in different areas. As a part of this strategy, the government aimed at increasing the participation of youths in society by providing them with education and employment opportunities.

Additionally, without vocational schools/centers supported under this project, a further shortage or lack of education facilities could have easily pushed many youths into the unstable situation of not having any work, or becoming a destabilizing factor in Jordan, a country which still faces some social and economic challenges. Given the real possibility of this sort of thing actually happening, this project contributed significantly to the stability of Jordanian society.

2.4.6 Regional development

In regions where new community colleges and VTCs were built, there was an economic ripple effect. Since the sites of these new colleges and training centers are scattered evenly from north to south throughout the country, their economic ripple effect was acknowledged throughout Jordan (again based on the interview with the president of Al-Balqa Applied University).

As a whole, the evaluation of the project effectiveness and impact are summarized as follows. In academic education, including basic and academic secondary education, this project effectively expanded educational opportunity, as evidenced by the increase in enrollment at schools supported under this project. Various forms of satisfaction including wage base increase and other qualitative effects identified in the survey results were also recognized. By contrast, in terms of vocational education/training, the filling rate and employment rate of vocational education/training have remained low. The IRR estimated on the basis of such development was low, and the investment did not seem to provide a direct linkage to individual income. Thus, it can be concluded that the effectiveness of this project is judged to be "moderate."

2.5 Sustainability (Rating: b)

2.5.1 Executing agencies

2.5.1.1 Operation and maintenance system

In this project, the National Center for Human Resources Development was the overall executing agency, and the Ministry of Education, Al-Balqa Applied University, and the Vocational Training Corporation were the executing agencies of comprehensive schools, community colleges, and VTCs, respectively. These three executing agencies were responsible for the operation and maintenance of the project after the project completion.

Comprehensive schools are under the unified guidance of the Ministry of Education, and

the operation and maintenance system of facilities is now in place. Additionally, the Ministry of Education decides the curriculum modification and notifies each school of those changes to be integrated nationwide. With regard to the employment situation, at most of the schools visited at the ex-post evaluation, the agency had the staff of each school enter in their respective ledgers the availability and non-availability of work and the places of employment of their graduates at the time of graduation. Unfortunately, in most cases, the schools have not conducted any follow-up surveys.

With regard to VTCs, the Vocational Training Corporation is responsible for the operation and maintenance of facilities at 46 VTCs nationwide including the five VTCs supported under the project. No problems were identified during the ex-post evaluation. Curricula are modified at the VTC headquarters when necessary, while each VTC is responsible for changes in teaching methods. At three of the four VTCs visited during the evaluation survey, either an employment survey or a market needs survey was conducted on graduates. The survey results were reflected in the teaching methods and the like.

With regard to community colleges, Al-Balqa Applied University serves as their supervising agency, but each college is authorized to modify its own curriculum by some degree within the central control. On the other hand, the Al-Balqa Applied University's group formulates its own strategy. At the three schools visited, the facilities were well managed. Two of them conducted an employment survey or a market needs survey, and the results were reflected in the formulation and modification of a curriculum. From these points, it can be concluded that no problem is identified in the operation and management of the community colleges and in their facility maintenance system.

2.5.1.2 Technical capacity

In comprehensive schools, community colleges and VTCs, operation and maintenance of equipment and furniture were managed by the schools themselves, and no technical issues were reported. At all schools, qualified technical personnel are responsible for operation and maintenance. When problems arose that could not be solved by the technical personnel of each school, they are reported to the headquarters and technical personnel were dispatched from the headquarters to the schools to have the equipment or furniture fixed (based on interviews with the principals of schools visited).

2.5.1.3 Financial status

(1) Financial status on a national level

At the time of appraisal of this project, the Government of Jordan announced that it would continuously allocate 10% of the national budget to the education sector. At the time of ex-post evaluation, that percentage was more or less maintained. Of the total national budget in FY2005, which is 3102.38 million JD (approx. 491.6 billion yen; exchange rate: 1JD = 158.45 yen, as of August 2007), an aggregated sum of 334.81 million JD (approx. 53.05 billion yen; same

exchange rate), was allocated to the Ministry of Education, which allocates its budget to comprehensive schools, and to the Ministry of Higher Education, which allocates its budget to community colleges. The aggregated sum of 334.81 million JD is equivalent to 10.9% of the total national budget (see Table 9). The ratio of the aggregate budget allocated to the two ministries concerned to the national budget was 10.2% in 2004, and 10.7% in 2003. Thus, the budget for the education sector continued to exceed 10% from the time of appraisal to the time of ex-post evaluation. However, unfortunately, the said ratio fell to 9.8% in FY2006.

Table 9: Changes in the ratio of the education related budget to the national budget

(Unit: 1,000JD)

	2003	2004	2005	2006
Total national budget (a)	2,809,814	3,102,097	3,102,377	3,768,940
Aggregate sum of MOE and MOHE budgets (b)	300,249	315,228	337,455	368,269
(ratio: b/a)	10.7%	10.2%	10.9%	9.8%
MOE budget	298,037	313,117	334,811	365,634
(Ordinary budget)	270,361	283,974	306,520	335,250
(Capital budgeting)	27,676	29,143	28,291	30,384
MOHE budget	2,212	2,111	2,644	2,635
(Ordinary budget)	1,896	1,957	2,084	2,405
(Capital budgeting)	316	154	560	230

Source: Annual statistics of each year

A glance at the revenue and expenditure of VTCs, which are outside the jurisdiction of the MOE and MOHE (see Table 10), shows that they were balanced at 6.45 million JD (1.02 billion yen; exchange rate: 1JD=158.45 yen) in 1998 (the start of the project), but the balance of revenue and expenditure increased to 9.08 million JD (1.44 billion; same exchange rate) in 2005 (at project completion).

Table 10: Changes in the annual revenue and expenditure of all VTCs

	1998	1999	2000	2001	2003	2005	2006
Revenue (JD)							
Self Revenue	698,684 (10.8%)	710,912 (7.9%)	554,863 (6.2%)	691,568 (8.9%)	1,342,400 (8.7%)	1,048,287 (11.5%)	1,148,400 (7.8%)
Gov. Contribution	5,345,373 (82.9%)	6,894,802 (76.5%)	6,334,205 (71.1%)	4,375,000 (56.6%)	5,500,000 (35.8%)	4,957,500 (54.6%)	4,000,000 (27.0%)
Others	406,872 (6.3%)	1,403,776 (15.6%)	2,018,605 (22.7%)	2,662,224 (34.4%)	8,507,670 (55.4%)	3,076,883 (33.9%)	9,657,085 (65.2%)
Total	6,450,929	9,009,490	8,907,673	7,728,792	15,350,070	9,082,670	14,805,485
Expenditure (JD)							
Current Exp.	4,606,982 (51.1%)	4,871,959 (54.1%)	4,962,211 (55.1%)	5,189,254 (57.6%)	5,630,680 (62.5%)	6,978,044 (77.5%)	5,278,739 (58.6%)
Capital Exp.	1,693,452 (18.8%)	3,308,525 (36.7%)	2,531,980 (28.1%)	513,757 (5.7%)	1,449,506 (16.1%)	631,407 (7.0%)	605,308 (6.7%)
Others; Bank Depo	150,495 (1.7%)	829,006 (9.2%)	1,413,482 (15.7%)	2,025,781 (22.5%)	8,269,884 (91.8%)	1,473,219 (16.4%)	3,382,007 (37.5%)
Total	6,450,929	9,009,490	8,907,673	7,728,792	15,350,070	9,082,670	9,266,054

Source: VTC annual reports for each year

Note: Data for 2002 and 2004 are not available.

(2) Financial status by type of school supported under the project

The headquarters of each of the three types of schools – comprehensive schools, community colleges, and VTCs – provide their respective schools with the funds for meeting the operation and maintenance expenses. However, according to the statistics on the revenue and expenditure ascertained in the ex-post evaluation survey, the expenditure for the “equipment and furniture” was used almost exclusively for operation and maintenance of existing equipment and furniture, leaving little room for purchasing new equipment and furniture. Reflecting this situation, during the ex-post evaluation survey, many principals expressed a lack of funds in the operation and maintenance, particularly to purchase equipment and furniture with new technology as a result of rapid technological progress.

Some comprehensive schools even lacked funds to purchase raw materials for practical vocational training (e.g., Wadi Musa Girls School), while many faced no such shortage of funds. Moreover, one comprehensive school discovered that its operation and maintenance budget was insufficient to pay for the repair of a piece of equipment that had broken down (Wasfi Al-Tal School [Aqaba Industrial School at the time of appraisal]).

2.5.2 Operation and maintenance status

It was confirmed that in each of the three types of schools – comprehensive schools, community colleges, and VTCs – school facilities, equipment and furniture were properly managed (based on direct observation and interviews with the principal of each school visited).

In the case of comprehensive schools, there were cases where not all of the equipment and furniture provided were being used. For example, there were nearly 100 unused chairs (with a small desk attached to each) piled up in the hallway of Wadi Musa Girls School.

In addition, as was confirmed in the section on effectiveness, the need for vocational education/training had not expanded as much as was envisioned at the time of appraisal, so that the school buildings and equipment and furniture were not fully utilized as expected. This issue is outside the scope of operation and maintenance, but it is of concern, nonetheless.

From the foregoing, operation and maintenance of this project, technical capacity, and financial status are in a good shape. However, for Jordan as a whole, the needs for vocational education/training are not expanding. This is a point of concern for project sustainability. Overall, the sustainability of this project is moderate.

3. Feedback

3.1 Conclusion

From the above discussions, it can be said that, overall, the evaluation of the project is

moderately satisfactory.

3.2 Lessons Learned

For JICA: When support for vocational education/training is requested, it is necessary for JICA, as an aid organization, to independently scrutinize the consistency between the government's policy and the enforcement of that policy, as well as the trends of needs among the people before carefully responding to the request.

3.3 Recommendations

For the Government of Jordan: From the perspective of promoting the upgrading of industry, the government consistently stresses the importance of vocational education/training. But this is contrary to what the people appear to pursue: academic education and higher education. Consequently, in the end, the government must listen to the people and implement measures that resonate with their needs. If the government declares a policy that stresses the importance of vocational training, then the government is expected to vigorously promote measures that will expand the demand for vocational education/training.

Comparison of Original and Actual Scope

Item	Planned	Actual
(1) Output		
(a) Comprehensive Schools	New construction: 31 schools Expansion: 21 schools Procurement of equipment and furniture: 66 schools	New construction: 31 schools Expansion: 21 schools Procurement of equipment and furniture: 66 schools
(b) Community Colleges	Expansion: 7 schools Procurement of equipment and furniture: 11 schools	Expansion: 7 schools Procurement of equipment and furniture: 10 schools
(c) VTCs	Expansion: 3 schools Procurement of equipment and furniture: 5 schools	Expansion: 3 schools Procurement of equipment and furniture: 5 schools
(2) Project Period	July 30, 1997–June 2002	July 30, 1997–Nov. 13, 2005
(3) Project Cost		
Total of ODA Loan Portion	7,123 million yen	6,027 million yen
Civil Works	3,914 million yen	3,826.85 million yen
Equipment & Furniture	2,761 million yen	2,235.62 million yen
Consulting Services	110 million yen	87.91 million yen
Slush Fund	638 million yen	
Exchange Rate	1JD = 154.62 yen (Jan. 1997 at time of appraisal)	1JD = 169.49 yen (Nov.2005 completion of disbursement)

Note 1: Number of schools for procurement of equipment and furniture entered above includes schools that were newly built or rehabilitated under this project as they were also provided with equipment and furniture

Note 2: The simple aggregate sum was actually 6,150.38 million yen, but as a result of the final exchange rate adjustment, the aggregate sum that was finally settled on was 6,027 million yen (this point has already been confirmed with NCHRD, the organization that received the ODA loan).

Note 3: Regarding the Second Human Resources Development Sector Investment Program (HRDSIP II) of which this ODA loan partly constitutes, the Government of Jordan has tentatively calculated the foreign currency component and the local currency component⁷, but has not calculated the local and foreign currency components (= ODA loan component) limited to this project. According to the appraisal documents, of HRDSIP II, the total cost of this evaluated project that the government decided to implement was 9,219 million yen, with the foreign currency component of 5,692 million yen, and the local currency component of 3,527 million yen (out of 9,219 million yen, the approved amount of the ODA loan was 7,123 million yen). However, the government had not calculated the actual project cost limited to this project. Thus, information on the total project cost, the foreign currency component, and the local currency component could not be obtained.

Table 10: List of comprehensive schools supported under this project

Support Category According to PCR	School Name (Arabic)	School Name (PCR)	Current School Name (by IDCJ Survey)	Items supported by the Japanese association (JBIC)	
				Construction	Furniture & Equipment
1-1-I	السخنة بنين	Sukhnah M		X	X
1-1-II	حريما بنين	Hareema M		X	X
1-1-III	قريط بنات	Qleit F		X	X
1-1-IV	كفر سوم بنات	Kufr Soom F		X	X
1-1-V	الجعفرية بنات	Ja'afarieh F		X	X
1-1-VI	كفر الما بنات	Kufr Elma F		X	X
1-1-VII	منشية حسين بنات	Manshiet hisban F		X	X
1-1-VIII	عرجان بنات	Irjan F		X	X
1-1-IX	البيانية الشمالية بنين	Badiet North M		X	X
1-1-X	المرج بنات	Al-Murooj F		X	X
1-1-XI	مخيم عزمي المعتي بنين	Azmi El-Mufti Camp M		X	X
1-1-XII	البرية/القصر بنين	Rabbah M	Prince Zaid Bin Al Hussein M	X	X
1-1-XIII	يرقا بنين	Yarqa M		X	X
1-1-XIV	الزويد وأم الأسود بنين	Ziud & Um El-Usod M		X	X
1-1-XV	الخشافية بنات	Khashafieh F		X	X
1-1-XVI	بيت يافا بنات	Beit Yafa F		X	X
1-1-XVII	حي الضباط بنات	Hai Ed-Dubbat F		X	X
1-1-XVIII	الضليل بنات	Dheil F		X	X
1-1-XIX	وادي الريان بنين	Wadi Er-Rayan M		X	X
1-1-XX	دير الليات بنين	Deir El-Laiat M		X	X
1-1-XXI	الدجينة بنات	Dajanieh F		X	X
1-1-XXII	مخيم سوف بنين	Souf Camp M		X	X
1-1-XXIII	الطفيلة بنات	Tafeelah F	Safyeh Bint Abdel Muttaleb F	X	X
1-1-XXIV	شفا بدران بنين	Shafa Badran M	Saif Al Dawla Al Hamadani M	X	X
1-1-XXV	أم الدناير بنين	Um-Ed-Dananeer M		X	X
1-1-XXVI	الصريح بنات	Sarieh F		X	X
1-1-XXVII	وادي موسى بنات	Wadi Mousa F		X	X
1-1-XXVIII	شكري شمساعة بنين	Shukri Sha'sha'a M		X	X
1-1-XXIX	جبل النصر بنين	Jabal En-Naser M		X	X
1-1-XXX	كفر يوبا بنات	Kufr Youba F	Khadija Um Al Momenin F	X	X
1-1-XXXI	القادسية بنين	Qadisieh M		X	X
		(SUB TOTAL:1-1)		31	31
1-2-I	مؤنة بنين	Mou'tah M			X
1-2-II	الشهابية بنات	Al-Shihabieh F			X
1-2-III	ماحسن بنات	Mahes F			X
1-2-IV	حيان الورداني بنات	Hayya Al-Rweibedh F			X
1-2-V	تنتة بنين	Tubneh M			X
1-2-VI	الرمثا بنين	Ramtha M	Prince Hamzah Bin Al-Hussein M		X
1-2-VII	دير أبي سعيد بنين	Dier Abi Saeed M			X
1-2-VIII	حرفا بنين	Hofa M			X
1-2-IX	الأميرة بسمه بنات	Princess Basma F			X
1-2-X	سحاب بنين	Sahab Ind. M			X
1-2-XI	السكان المالية والزراعة بنات	Malia Housing F			X
1-2-XII	أم كاتير بنات	Um Katheer F			X
1-2-XIII	وادي السير بنين	Wadi Es-seer M			X
1-2-XIV	المقابلين وأم قصير بنين	Mugabalein M			X
1-2-XV	قريبة بن مسلم بنين	Quteibeh Bin Musliom M			X
1-2-XVI	محمد طوقان بنين	Ahmed Toqan M			X
1-2-XVII	الجربنة بنين	Jrieneh M			X
1-2-XVIII	الجويدة بنات	Jweideh F			X
1-2-XIX	مرصع بنين	Marsa'a M			X
1-2-XX	عين جالوت بنات	Ein Jaloot F			X
1-2-XXI	مظهر أرسلان بنين	Madhar Arsalan M			X
		(SUB TOTAL:1-2)			21
1-3-I	عبد الحميد شرف بنين	Abdel-Hameed Sharaf M			X
1-3-II	عبد الحافظ العزب بنين	Abdel-Hafiz El-Azab			X
1-3-III	ابن النفيس بنين	Ibn-En-Nafees M			X
1-3-IV	وصفي التل بنين	Wasfi El-Tal M			X
1-3-V	العقبة الصناعية بنين	Aqaba M	Wasfi El-Tal Aqaba M		X
1-3-VI	سما الروسان	Sama El-Rousan			X
1-3-VII	علي سيدو الكردي بنات	Ali Seidu El-Kurdi F			X
1-3-VIII	أبو بكر الرازي بنين	Abu Baker El-Razi M			X
1-3-IX	الشونة الجنوبية	Shouneh South			X
1-3-X	المفرق بنين	Mafraq M			X
1-3-XI	حسن خالد أبو الهدى بنين	Hasan Khalid Abu El-Huda M			X
1-3-XII	الضليل بنين	Dheil M			X
1-3-XIII	الملك عبدالله بنين	Prince Abdullah M	King Abdullah M		X
1-3-XIV	مركز التنمية الريفية بنات	Development Center F			X
		(SUB TOTAL:1-3)			14
		(Grand Total)			66

Source: JICA (2005) "Project Completion Report"

MOE (1997) "Development of Vocational Education in MOE"

Table 10: (Continued) List of schools supported under this project
(Community colleges, VTCs)

Community Colleges

	Name of College	Directorate
2-1:Expansion & equipment		
1	Amman Univ. College	Amman
2	Al-Husn Polytechnic	Al-Husn
3	Salt	Salt
4	AL-Karak	AL-Karak
5	Ma'an	Ma'an
6	Irbid	Irbid
7	Zarqa	Zarqa
2-2:Provision of equipment		
1	Ajloun	Ajloun
2	Amman	Amman
3	Alia	Alia

Vocational Training Centers

	Project site	Location
3-1: Newly constructed & equipment		
1	Vocational Training Center (F)	Zarka
2	Vocational Training Center (F)	Abu Nsair
3	Vocational Training Center (F)	North Madaba
3-2:Provision of equipment		
1	Vocational Training Center	Yajous
2	Vocational Training Center	Middle Ghor

Source: JICA (2005) "Project Completion Report"