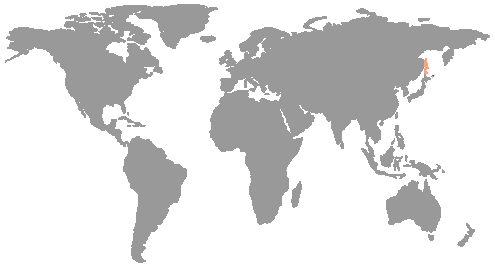
THE WORLD BANK OPERATIONS EVALUATION DEPARTMENT



Tertiary Education: Lessons from a Decade of Lending, FY1990-2000

David Berk

Director-General, Operations Evaluation: Gregory K. Ingram
Acting Director, Operations Evaluation Department: Nils Fosdvedt
Manager, Sector and Thematic Evaluation Group: Alain Barbu
Task Manager: Martha Ainsworth

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OPERATIONS EVALUATION DEPARTMENT

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Contact:
Operations Evaluation Department
Partnerships & Knowledge Programs (OEDPK)
e-mail: ecampbellpage@worldbank.org
e-mail: eline@worldbank.org
Telephone: 202-458-4497
Facsimile: 202-522-3125
http:/www.worldbank.org/oed

Acronyms

AFR	Africa Region
EAP	East Asia and Pacific Region
ECA	Eastern Europe and Central Asia Region
EFA	Education for All
FGMA	Fundación Gran Mariscal de Ayacucho
HD	Human Development
LCR	Latin America and the Caribbean Region
MDG	Millennium Development Goal
MIS	Management information system
MNA	Middle East and North Africa Region
NUC	National Universities Commission (Nigeria)
OED	Operations Evaluation Department
PPAR	Project Performance Assessment Report
PCR	Project Completion Report
PIU	Project implementation unit
QAE	Quality at entry
QAG	Quality Assurance Group
SAR	Staff Appraisal Report
TA	Technical assistance
UGC	University Grants Commission (Bangladesh)

Director-General, Operations Evaluation	:	Mr. Gregory K. Ingram
Director, Operations Evaluation (Acting)	:	Mr. Nils Fostvedt
Manager, Sector and Thematic Evaluations	:	Mr. Alain Barbu
Task Manager	:	Ms. Martha Ainsworth
Author	:	Mr. David Berk

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Executive Summary

Since the World Bank began lending for education in 1963, tertiary education has accounted for about one-fourth of the Bank's lending to the sector. The Bank has also produced many strategies, analytic reports, and studies on tertiary education, the most recent of which is *Constructing Knowledge Societies: New Challenges for Tertiary Education*. Historically, these documents have justified Bank lending for tertiary education on grounds that it can be a critical instrument of growth and, hence, of poverty reduction. More recently, investments in tertiary education have been justified in terms of their potential contribution to teacher training, a prerequisite for achieving the goals of the global Education for All (EFA) initiative and the Millennium Development Goals (MDGs).

While these impacts of tertiary education are plausible, there has been no study of the performance of the Bank's tertiary education lending or the extent to which it has contributed to fulfilling these goals in practice. To fill part of this gap, this study reviews the objectives, content, and performance of the 30 Bank-supported tertiary education projects completed between fiscal years 1990 and 2000, based on project appraisal and completion reports and Performance Assessment Reports (PPARs) of the Operations Evaluation Department (OED).

The 30 completed projects capture a substantial and visible share of the Bank's recent past support to tertiary education, including universities, polytechnics, specialized institutions, and science and technology. The key objectives of the projects were improved educational quality, expansion of enrollments, better planning and management, financial sustainability, and policy reform. Sixteen of the projects were in the East Asia and Pacific Region, seven in Africa, and seven in four other Regions. Eighteen of the 30 projects were in 10 middle-income countries and 12 were in 9 low-income countries. Altogether they provided $2.48 billion in IBRD/IDA lending. Overall, OED rated the outcomes of 70 percent of the projects moderately satisfactory or better.

Findings

- ***There were significant disparities in performance of tertiary education projects between middle-income and low-income countries.*** Tertiary education projects in Africa have performed particularly poorly, with only two of the seven projects rated moderately satisfactory or better.

- ***These completed projects rarely addressed the goal of equitable access by the poor and disadvantaged and provided little evidence that they have advanced it.*** Only one aimed to directly improve equity in tertiary education, by targeting student loans to lower-income or geographically remote students. Only three provided evidence of any impact on poor or disadvantaged students, including women.

- ***Most of the projects with improved educational quality as an objective achieved it***, based on providing improved or increased educational inputs. However, little evidence was offered that teaching methods, student learning, or labor market outcomes improved as a result.

- ***Most of the projects aiming to expand enrollment were at least partly successful, although often the pressure for expansion was driven by "social demand"*** rather than by labor market signals. ***Two-thirds of the projects that tried to control expansion of enrollments were unsuccessful.*** Rapid expansion in enrollment sometimes undermined quality improvements.

- ***Several projects improved sector-wide planning and management*** by creating national bodies for improved oversight and inter-institution networks and shared facilities to improve efficiency. There was little attention to or success in stimulating private tertiary education.

- ***The projects with financial sustainability as a main objective were unable to improve it significantly***. Some achieved minor advances, but more were unable to implement planned cost-sharing schemes that increased tuition fees, reduced subsidies, or tightened up student loans.

- ***The projects did not provide evidence of impact in stimulating economic development, contributing to poverty reduction, or enhancing the achievement of Education for All goals.*** Most projects had no indicators of education or labor market outcomes and impact; many had no baseline data; some had no targets; and several had no monitoring arrangements. Improved or increased inputs were usually assumed to result in better quality of education and, hence, better outcomes.

Lessons from Project Experience

- ***Key constituencies should be consulted early and their support maintained throughout the implementation of tertiary education reforms***. Stakeholders outside the educational institutions were mobilized in some cases to overcome faculty and student opposition to reforms to increase efficiency and cost sharing.

- ***Positive incentives for implementing tertiary education reforms have shown promising results***. Thirteen of the projects allocated funds on a competitive basis, especially for research, and others induced reforms through accreditation and management information systems.

- ***A comprehensive approach—grounding lending in a broad reform program—was not a good predictor of a satisfactory outcome rating***. Many of the projects with satisfactory outcomes did not grow out of a comprehensive vision of the subsector in strategic government documents or Bank sector work. However, 16 of the 30 projects were either follow-on or one of several projects in the same country.

Recommendations

- ***Make explicit in project design the link between project elements and economic growth, poverty reduction, Education for All, and achieving the MDGs.*** This is particularly important in the lowest income countries, where basic education is a priority and the performance of higher education projects has been weak.

- ***Dramatically strengthen the monitoring and evaluation of tertiary education projects*** to generate reliable and timely indicators of education and labor market outcomes, which are essential to demonstrating the impact of these projects on learning outcomes, poverty reduction, economic development, EFA, and the MDGs.

- ***Ensure that all tertiary education projects systematically enhance the access of poor and disadvantaged students***, including women.

1. Introduction

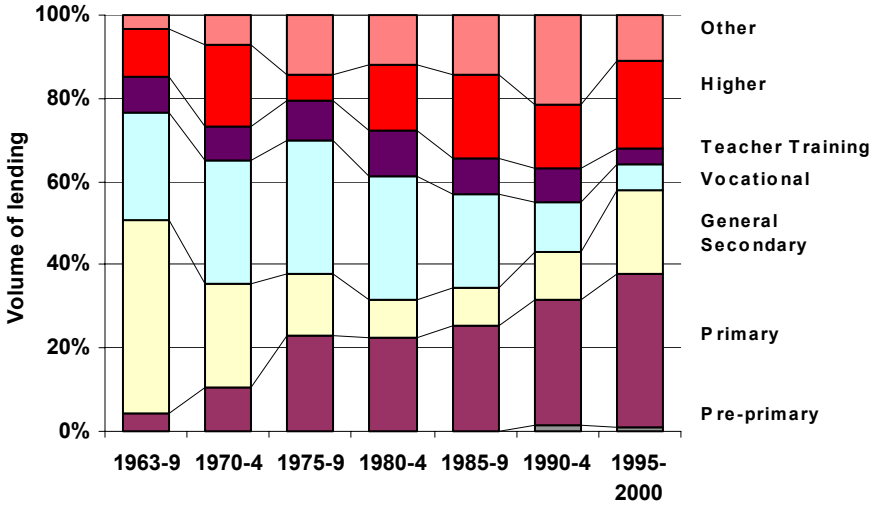
1.1 Since the World Bank began lending for education in 1963, tertiary education has accounted for about one-fourth of the Bank's lending to the sector (Figure 1). The Bank has also produced many strategies, analytic reports, and studies on tertiary education, the most recent of which is the Human Development (HD) Network's study *Constructing Knowledge Societies: New Challenges for Tertiary Education* (Washington, D.C., World Bank, 2002). According to that study, Bank assistance to tertiary education can be a critical instrument of growth and poverty reduction because it can:

- create the knowledge and skills needed to promote productive investment and poverty reduction in the new global economy;
- induce reforms in policies, governance, and management within the sector;
- improve equity through increased access to tertiary education by low-income and disadvantaged students;
- enhance education at all levels through training of teachers, contributing to Education For All (EFA) and meeting the Millennium Development Goals (MDGs);
- and create social capital and improve the quality of development program management.

1.2 While these impacts are plausible, there has been no systematic study of the performance of the Bank's tertiary education lending or the extent to which it has contributed to fulfilling these goals in practice. This study reviews the objectives, content, and performance (outcomes, institutional development, sustainability, Bank and borrower performance) of the 30 Bank-supported tertiary education projects completed between fiscal years (FY) 1990 and 2000 to fill part of that gap. It also reviews these completed projects with respect to evidence on three questions posed by *Constructing Knowledge Societies*:

- Do projects with comprehensive approaches to tertiary education have better outcomes?
- How important is building political consensus in determining project outcomes?
- What impact have positive incentives for stakeholders had in tertiary education reforms?

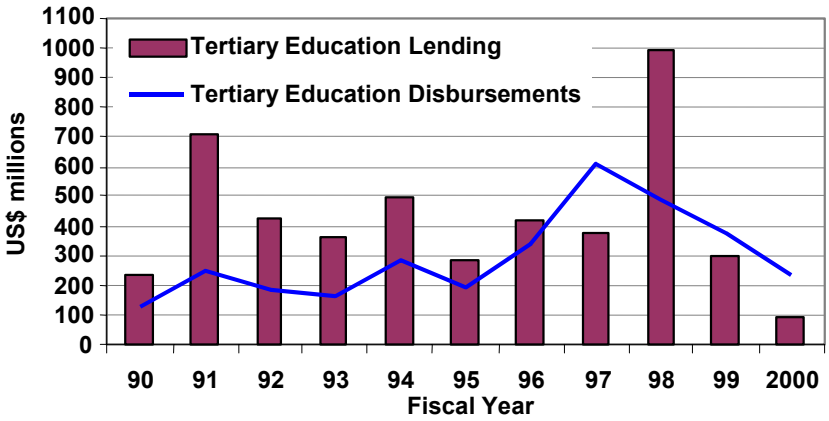
Figure 1. Distribution of Education Lending by Subsector



Source: World Bank 2002. Constructing Knowledge Societies: New Challenges for Tertiary Education. Appendix F, p. 153

1.3 The 30 Bank-supported "stand alone" tertiary education projects reviewed were completed between FY90 and FY00. The Bank has maintained a consistent level of support for tertiary education for the past decade (Figure 2). From FY92 to FY98, lending for tertiary education averaged $481 million a year, accounting for 17–18 percent of the total lending activity in education.

Figure 2. World Bank Tertiary Education Lending



Source: World Bank. 2002. Constructing Knowledge Societies: New Challenges for Tertiary Education. Appendix F, p. 152.

1.4 The 30 projects supported universities, polytechnics, specialized institutions, and science and technology. Sixteen were in East Asia and Pacific, 7 in Africa, and 7 in the four other Regions. There were 18 projects in 10 middle-income countries and 12 in 9 low-income countries. They provided $2,481.8 million in IBRD/IDA lending. The review is based on Staff Appraisal Reports (SARs) and Project Completion Reports (PCRs) for all projects, OED Project Performance Assessment Reports (PPARs) available for 5 projects, and OED ratings.[1] An unknown number of projects in other sectors include high-level training or science and technology components, and many projects focusing on basic and secondary education include teacher training. These and the active portfolio of tertiary education projects were not reviewed.

1.5 This report is divided into eight sections that review the evidence of the performance of tertiary education projects in terms of: OED project ratings (section 2); Bank tertiary education strategies (section 3); project outcomes according to their main objectives (section 4); institutional development impact (section 5); sustainability (section 6); Bank performance (section 7); borrower performance (section 8); and monitoring and evaluation (section 9). The last section summarizes the findings and makes recommendations for improving the performance of tertiary education projects. A list of the projects, their implementation periods, and lending amounts is in Appendix Table 1. The projects' main objectives, as well as some key aspects of Bank strategies, are summarized in Appendix Table 2. OED's ratings of each project are in Appendix Table 3. For Bank and borrower performance ratings, the report has compiled an average for some projects from the ratings for components, where only these were available. The text draws upon a detailed matrix on key features of implementation experience from the 30 projects, available on request from OED.

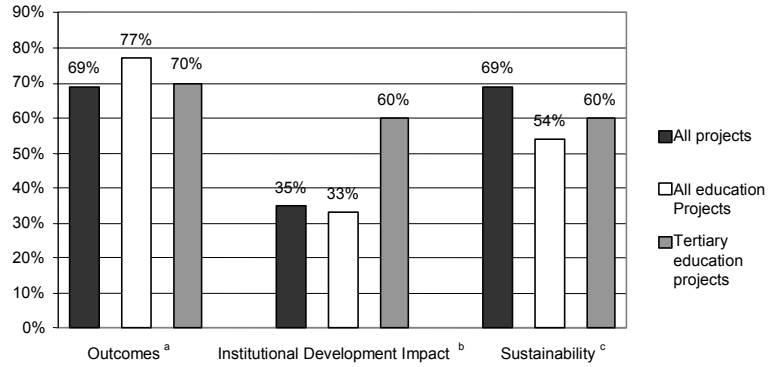
1. At completion, all projects are rated by their operational managing unit as well as the borrower on their outcome, institutional development impact and sustainability, and on Bank and borrower performance. These ratings are then reviewed by OED for consistency with established criteria and revised ratings are assigned, if warranted, based on the information provided in the PCR or Implementation Completion Report (ICR). For roughly a quarter of projects, OED conducts a field mission to evaluate results on the ground (a PPAR), and may revise the final ratings. "OED ratings" in this paper refer to the final ratings of OED, whether based on the desk review of completion reports or a PPAR.

2. Project Ratings

2.1 OED rated the **outcomes** of 70 percent of the 30 tertiary education projects completed in FY90–FY00 as moderately satisfactory or better.[2] Ratings for the components of outcome—relevance, efficacy, and efficiency—are available for 25 of the 30 projects. *Relevance* is defined as the extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals. *Efficacy* is defined as the extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance. *Efficiency* is defined as the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared with alternatives. Six of the 25 projects were rated "high" and 17 "substantial" for relevance.[3] However, ratings for efficacy and efficiency were far less positive. Only two projects received "high" on each of these dimensions and many more were rated modest. Either 1 or 2 projects were given "negligible" ratings on each of the 3 dimensions.

2.2 On the other major rating categories, 60 percent of the 30 projects received ratings of "substantial" **institutional development impact** and "likely" or "highly likely" **sustainability**. Two-thirds received ratings of satisfactory or better on **Bank performance** and **borrower performance.** [4]

Figure 3. Project Ratings, Tertiary Education Compared with Other Projects



a. Percent moderately satisfactory or better
b. Percent substantial or better
c. Percent likely or better

2.3 OED ratings for the 30 tertiary education projects were comparable to Bank-wide averages for all projects (2,443 projects) and all education projects (223 projects) for the slightly shorter period FY91–FY00 with respect to outcomes and sustainability, and received higher ratings than both other groups with respect to institutional development impact (Figure 3).

2.4 The relatively good performance in terms of ratings of this group of tertiary education projects compared to the overall Bank and education portfolios masks large differentials in outcome between those in middle-income and low-income countries, however. A relatively high share of tertiary education projects (18/30) were in middle-income countries, compared with the rest of the education portfolio, and those in middle-income countries performed much better: 78 percent

2. There are six possible OED outcome ratings: highly satisfactory, satisfactory, moderately satisfactory, moderately unsatisfactory, unsatisfactory, and highly unsatisfactory.

3. The relevance, efficacy, and efficiency rating scales are: high, substantial, modest, negligible.

4. The approval dates and implementation periods of the 30 projects largely explain why the Quality Assurance Group (QAG), established in 1996, did not review any of them for quality at entry and only reviewed two for quality of supervision (Malaysia Polytechnic Development Project and Venezuela Student Loan Reform Project). QAG found them satisfactory overall and either satisfactory or occasionally highly satisfactory on the key dimensions: focus on development impact; supervision of fiduciary aspects; adequacy of supervision inputs and processes; and realism of project performance ratings. QAG criticized the lack of poverty focus in the Venezuela Student Loan Reform Project design; the project was restructured during implementation, leading to much greater focus on making loans to middle- and lower-income groups and outside Caracas.

of those in middle-income countries were rated as moderately satisfactory or higher, compared to only 58 percent of the 12 projects in low-income countries (Table 1). The low-income countries in the sample included six in Africa, plus Bangladesh, China, and Lao PDR.

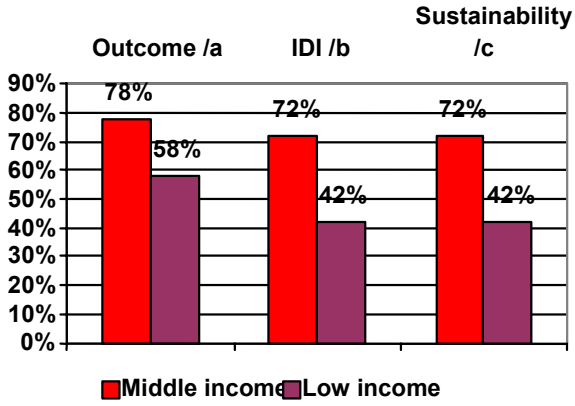
Table 1. Tertiary Education Projects with OED Outcome Ratings of Moderately Satisfactory or Better (percent; number of projects in parentheses)

	EAP	*AFR*	*Other*	*Total*
Middle-income countries	100 (12)	0 (1)	40 (5)	78 (18)
Low-income countries	100 (4)	33 (6)	50 (2)	58 (12)
Total	100 (16)	28 (7)	43 (7)	70 (30)

2.5 There were also significant differences in outcomes among regions that are not accounted for by income differences: projects had the best outcomes in East Asia and Pacific (100 percent moderately satisfactory or better) and the worst outcomes in Africa (28 percent), and this ranking held true for projects in both middle-income and low-income countries in those regions, although the number of projects in many cells of the table is small.

2.6 These differences in outcome ratings by country income group are mirrored in the OED ratings for these projects on institutional development impact (substantial in 72 percent of middle-income country projects, but only in 42 percent of low-income country projects) and sustainability (likely or better in 72 percent of middle-income country projects, compared to 42 percent of low-income country projects), as shows in Figure 4.

Figure 4. Project Performance: Middle-income



a/ Percent moderately satisfactory or better
b/ Percent substantial (IDI=Institutional Development Impact)
c/ Percent likely or higher

2.7 Similar differences in performance between middle-income and low-income countries appeared in the other areas covered in this review. Clearly, GNP per capita differences and everything that goes with them (trained manpower, administrative systems, etc.), as well as differences in country conditions between regions (conflicts, economic policies and performance, etc.), each accounted for part of the differences in project experience.

2.8 OED rated both Bank and borrower performance as better in middle-income than in low-income countries, and this must also have played some role in the different outcomes. There is no evidence of trends over time in outcomes and Bank and borrower performance within this admittedly small sample of projects in this one subsector, a finding that is at odds with those for whole sectors and regions and for the Bank overall in this period.

2.9 These results cast doubt on whether the Bank has yet learned how tertiary education projects in low-income countries, especially in Africa, can be designed, implemented, and supervised so that a high proportion achieves satisfactory outcomes despite the difficulties caused by country conditions.

3. Bank Strategies

3.1 World Bank policy toward tertiary education has evolved over the period during which the 30 reviewed projects were designed. The document underlying the earliest of these projects was the Education Sector Policy Paper of 1980, which was succeeded by Higher Education: Lessons of Experience in 1993 and Priorities and Strategies for Education in 1995. The most recent Education Sector Strategy, in 1999, was published after most of the reviewed projects were completed. The strategic documents of the 1990s advocated priority for basic education, but made the case that improvements in secondary and tertiary education must move forward along with progress in basic education. They suggested that countries should aim at achieving universal primary education and broaden access to higher levels while maintaining fiscal discipline. Public spending on tertiary education was largely benefiting higher-income families; making it pro-poor was viewed as an ongoing challenge and would involve scaling down large public subsidies to higher education. Tuition, board and lodging fees, and student loans were advanced as ways of freeing up public resources to target to the poor, including through scholarships. Also, private financing and provision of tertiary education was suggested to help meet the demand.

3.2 The main features of past World Bank lending have been to support the expansion and institutional differentiation of tertiary education systems. The projects have also supported reforms in governance, planning, and management of the subsector; improved quality; increased relevance; greater efficiency; increased financial sustainability; and science and technology development. In its interventions in the subsector, the Bank has taken an increasingly comprehensive approach. It has also supported the introduction of new techniques such as competitive funding.

3.3 Constructing Knowledge Societies: New Challenges for Tertiary Education (2002) gives additional reasons for greater attention by developing countries to tertiary education, namely its contributions to economic growth, creation of externalities important to technological advance and growth, poverty reduction, bridging the digital divide, and fulfillment of the Millennium Development Goals (support of lower educational levels and the health sector). Constructing Knowledge Societies proposes, in particular, that the Bank increase support for tertiary education in the poorest countries. It foresees a Bank role in facilitating policy dialogue among stakeholders, sharing knowledge, supporting reforms through program and project lending, and promoting an enabling framework. It advocates that the Bank use its comparative advantages in access to worldwide experience and in tying tertiary education reform to economy-wide reform. Tertiary education lending would support institutional diversification, strengthening science and technology capacity, improving relevance and quality, promoting greater equity, establishing sustainable financing systems, strengthening management capacities, and enhancing information technology and communications capacities.

THE PORTFOLIO REVIEW AND BANK STRATEGY

3.4 This review of tertiary education projects completed in FY90–FY00 has not been able to document that these projects actually contributed to economic growth, poverty reduction, or the Millennium Development Goals. This is not to say that there was no impact of the tertiary education projects on these key outcomes, but that the monitoring and evaluation of these projects was inadequate and thus the evidence was not available to confirm any impact, even on learning or labor market outcomes.

3.5 In addition, there was almost no evidence on the contribution of the projects to improved equity or poverty reduction, such as changes in the socioeconomic backgrounds or gender balance of students as enrollments increased, or the allocation of student loans or scholarships. One project

(Venezuela Student Loan Reform) extended student loans to lower-income or geographically remote students, although this only resulted because of a mid-term redesign. Two projects improved gender balance: one provided an entrée for female students to the Indonesian polytechnic system, while in another the competitive and transparent allocation of research funds increased the proportion of principal investigators who were female. Again, neither of these impacts was planned.

3.6 This study has documented the fact that performance of tertiary education projects in low-income countries, especially in Africa, has been significantly less successful than in middle-income countries, however. This finding calls into question the recommendation of Constructing Knowledge Societies to increase tertiary education lending to low-income countries. While there may be a role for Bank lending for tertiary education in low-income countries, links to basic education and improved equity have been weak and tertiary education projects have performed poorly.

LESSONS FROM IMPLEMENTATION EXPERIENCE

3.7 This review has been able to provide evidence concerning three main lessons of implementation experience in tertiary education projects highlighted in Constructing Knowledge Societies.

Were comprehensive approaches to tertiary education lending more successful?

3.8 The Bank has moved over time from projects that expanded and strengthened a specific institution or group of tertiary education institutions, to tackling whole parts of the tertiary education subsector, to comprehensive approaches. Constructing Knowledge Societies defines the latter as a global vision of tertiary education resulting in broad reform programs of policy measures supported by either one (multi-objective) or multiple operations.

3.9 The projects reviewed showed that a comprehensive approach (defined as operations grounded in a global vision of tertiary education) was neither necessary nor sufficient for an outcome rating of moderately satisfactory or better (Table 2). About half (6) of the 11 projects with a comprehensive approach had satisfactory outcomes, compared to about three-quarters (15) of the 19 that were not comprehensive. Most of the projects reviewed were designed more than a decade ago. Many did not reflect specific sector work on tertiary education nor did they necessarily grow out of a comprehensive vision of the subsector. Most dealt with part(s) of tertiary education, such as universities or polytechnics, rather than the whole subsector. They did not address all the important aspects of policy. Nevertheless, many of them were judged to have had satisfactory outcomes, though often their policy objectives were only partly achieved.

Table 2. Comprehensive Approaches and Project Outcomes (Number of projects)

	OED Outcomes		*Total*
Bank Approach	*Unsatisfactory*	*Moderately satisfactory or better*	
Comprehensive	5	6	11
Not comprehensive	4	15	19
Total	9	21	30

Source: Appendix Table 2.

3.10 However, in the large countries with multiple tertiary education projects (China, Indonesia, Korea), the vision was at the country level and the Bank's Human Development Network considers these to be examples of an evolving integrated approach. These projects did have satisfactory

outcomes. Sixteen of the 30 projects were either follow-on projects or in countries with more than one Bank-supported tertiary education project, so they may have benefited from a reasonably comprehensive view of the subsector. Even so, some projects in the large countries achieved little if anything significant on the policy front.

3.11 Many of the projects reviewed showed a tendency to load all aspects of subsector improvement into a single operation, instead of sequencing reforms over more operations. This reflected the problems of getting more slots in a small country's lending program, the unit costs of project processing, over-optimistic judgments about how much change was politically possible within a single project period, as well as about borrower implementation capacity, impatience, and well-meaning pressures inside the Bank for comprehensiveness—not just of diagnosis but of individual operations. Some countries were able to handle such complex projects successfully, but in others scaled-down expectations incorporated into more operations that were simpler would likely have shown better results.

How essential was building political consensus to the success of reforms?

3.12 Tertiary education policy reforms affect both staff and students of the institutions. These are concentrated, vocal groups with a stake in the present way of doing things, whether it be limited teaching loads or free tuition and student lodging, that gives them "vested interests." They also often have roots in or strong ties to political elites. They have thwarted, delayed, or watered down many reform efforts that they opposed. Sometimes, though, they can be brought into policy formulation and implementation and kept involved in ways that increase the chances of successful policy reform. Nevertheless, the key policy areas—control of the growth of enrollments, increased efficiency, and cost sharing—remain difficult. The manifestations of political economy problems typically include non-implementation of reforms and associated project components, and in some cases non-provision of counterpart funds.

3.13 The projects reviewed generally confirmed the importance of obtaining enough up-front support from the key stakeholders, and maintaining it throughout implementation. Another finding was that sometimes it was necessary to mobilize stakeholders outside the educational institutions to overcome continuing opposition from faculty and students to certain reforms.

3.14 Only a small number of projects acquired and maintained enough support (Malaysia Polytechnic, polytechnics in Mauritius). Sometimes support fell over time. In Ghana, with the advent of more democratic governance, the project failed to maintain the political support it needed for its more difficult reforms. In Morocco, only one Minister of Education supported enrollment controls, and he left office. In Mauritius, the university staff turned against reform because the targets were over-ambitious and required too quick a broadening of ties beyond the U.K. Some projects ostensibly had support, but during implementation the government's ideas were carried out, while components driven primarily by Bank interest were not (Malaysia University Development). Finally, in some cases larger considerations outweighed the forces of reform. In Algeria University Development, the political and security situation overwhelmed other things. In China Polytechnic/TV University, project proposals that students would pay fees and not be guaranteed jobs after graduation depended on broader economic reforms.

Were positive incentives more successful than mandated change?

3.15 Positive incentives for change are an alternative to top-down approaches. Institutions and actors may respond more readily to such positive incentives. The projects reviewed had examples

of two such instruments: competitive funds for large allocations and for research projects, and accreditation.

3.16 Competitive funding started and had a wide scope in the Nigeria Federal Universities Project. Bank funding was divided into three tranches. Once a tranche was released, each university could qualify to receive a part, by meeting certain conditions that embodied National Universities Commission (NUC) policies, especially on efficiency improvement. Although only one tranche was released, the universities eventually all qualified for it, and most of the (unpopular) efficiency improvements were achieved. The Korea Universities Science and Technology Research Project provided a comprehensive model, where both the institutions to be included and research projects to be funded were competed for, using carefully selected panels and clear and objective criteria. The Algeria University Development Project introduced a different competitive model, based on peer review and transparency, for the allocation of investment resources; a lack of government commitment, scarcity of resources to compete for, and the inability of foreign experts to visit limited its scope to the project, however.

3.17 The second area of competitive funding was for research (10 projects). Africa was just beginning to use this instrument, while other regions had major exercises. Korea had several projects funding thousands of university research projects. Brazil had 1,800 proposals competitively funded (half for research support). In Indonesia, a competitive research fund was established near the end of the second University Development Project, and in the Higher Education Development Project the number of grants doubled to 700 per year. These research efforts generally produced successfully completed research projects, most of them published, leading to a few patents and the uptake of some results by private firms.

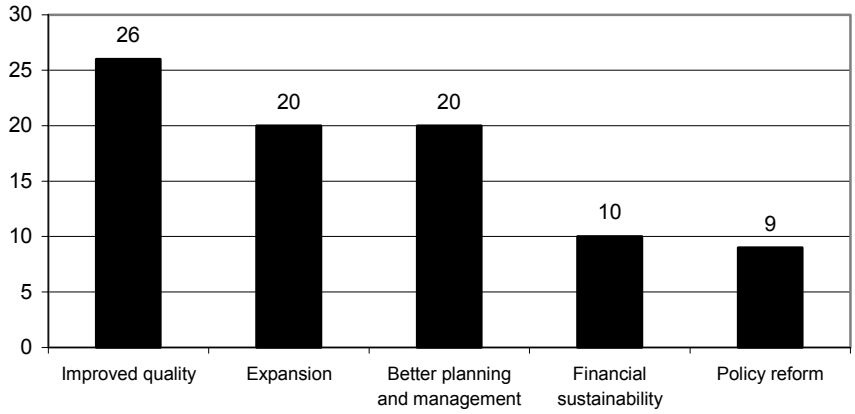
3.18 Six of the projects included accreditation efforts, and most were positive. Kenya was a pioneer in Africa, with its Commission for Higher Education having accredited 11 private universities some years ago already. The Philippines improved its system. Ghana established a National Accreditation Board and started accrediting private universities. Nigeria began a very serious exercise to accredit all the faculties in its Federal universities. Indonesia carried out a study. Mauritius, however, did not proceed with its planned phased introduction of accreditation.

3.19 Both of these positive incentives had good results, suggesting that the instrument was worth trying further when possible. However, there was not enough evidence to compare their effects on performance with the effects of mandated change.

4. Outcomes by Objective

4.1 The major stated objectives of the 30 projects were improved quality, expansion of enrollment, better planning and management, financial sustainability, and policy reform (Figure 5). The task managers at completion of the projects provided judgments in the completion reports on the extent of success in meeting these key objectives. For many countries, the issue in tertiary education was how to solve one big equation: how to expand enrollments while maintaining (or improving) quality on a financially sustainable basis.

Figure 5. Objectives of Tertiary Education Projects Completed FY90–FY00



QUALITY

4.2 Twenty-six projects aimed at a significant improvement in the quality of tertiary education. All but a few were judged to have achieved this. However, these judgments were based almost entirely on increased or upgraded inputs, especially advanced degrees for staff and more and better buildings, equipment, books, and journals. There was also considerable evidence that certain inputs were more intensively used. But this, while suggestive and probably necessary, is not sufficient to prove the point. There was virtually no mention of improvements in teaching methods. There was almost no evidence of improved student learning, some evidence of improvements in research, but little more on labor market outcomes. Besides, rapid enrollment expansion and possibly some efficiency increases undermined any quality gains.

4.3 **New programs and curriculum development.** Projects in half a dozen countries introduced entirely new programs. The Malaysian process was especially thorough, and included validation by local industry as well as study tours abroad to see every aspect of the new courses actually running. Many projects included curriculum modernization and most efforts were judged successful. In China, a new economics/finance curriculum developed under the Second University Development Project was introduced at 250 institutions countrywide, the biggest achievement of the project. As in other socialist and transition countries, new curricula in engineering and economics/finance involved broader undergraduate programs, with more general and basic courses, a drastic reduction in the number of specializations, and more practical work. Employer input was built into program design/curricula through faculty/industry advisory committees in several countries. There was little information on these new arrangements. However, project institutions had little success in attracting private students.

4.4 **Staff development and utilization.** In most countries faculty had low levels of qualifications initially: often fewer than 10 percent had master's degrees or above. Upgrading programs therefore formed the core of most projects. Sending large numbers abroad for advanced degrees was the most expeditious solution. The targets for faculty upgraded, and for the proportions with advanced degrees post-project, were generally met; occasionally there were difficulties in finding enough qualified candidates. China sent over 1,000 abroad in one project, Indonesia 500, etc. The results were extraordinary: in China University 2, the proportion of faculty with advanced degrees rose from 7 percent to 52 percent in one project lifetime. These programs were supplemented with non-degree and domestic programs, and visiting scholars. All these efforts required management technical assistance (TA) contracts with one of several organizations and university consortia in OECD countries. They posed issues of cost, management, and possibly brain drain. As a result, attempts started to do more upgrading at home. China and Malaysia set up dedicated teacher training centers. Experience with costly TA contractors was not always good, so countries began to do more from project implementation units (PIUs). While many visiting scholars made important contributions, some were not well chosen or directed and had difficulty making their expertise relevant in unfamiliar settings. Fortunately, there were no cases of massive brain drain in the projects reviewed.

4.5 Many countries had low student-staff ratios. An increase in this ratio improves efficiency, reducing per student recurrent costs, but should not be taken too far. The projects showed a tendency to converge on a ratio around 20 from both above and below. Ghana, Nigeria, and Philippines increased their ratios in universities quickly to around 20, largely by letting enrollments grow more rapidly than faculty numbers. Korea, with high ratios initially, reduced them from 26 to 19 in science and from 37 to 25 in engineering, with a potential increase in teaching quality and in research time. Many countries still have very low teaching loads; only one project included an increase (Morocco). However, Korea reduced teaching hours from 12 to 9 per week, leaving more time for research.

4.6 **Facilities.** *Civil works* has been the least problematic area in these projects. Only one project had significant design questions (Second Indonesia University Development Project). Slowness in starting construction because of procurement procedures contributed to postponements of closing dates, but rarely by more than a year.

4.7 New *equipment* for laboratories and workshops was often specialized, hard to use, and expensive. Accordingly, in China much effort went into carefully matching the complexity of equipment purchased to its prospective uses; international and national TA was very valuable. Furthermore, equipment with many potential users was placed in joint science centers and research facilities (China Provincial Universities and Korea projects). The equipment that became available permitted a high proportion of required demonstrations and experiments to be performed. The other key issue was maintenance. Much equipment on university campuses, especially in Africa, has broken down, often for years for lack of funds and expertise to fix it. However, Nigeria Federal Universities were able to fix 70 percent of their broken equipment. Larger countries developed campus centers for equipment maintenance (Indonesia and Nigeria). Budgets were sometimes a problem; and revenue generated by project institutions was not necessarily ploughed back into operations and maintenance.

4.8 A majority of projects provided *library* assistance on a considerable scale, usually books and journals, sometimes also equipment. Some problems did arise. Staff isolated from international developments (Algeria), or lacking catalogs and book reviews (China Provincial Universities), did not always make the best choices, while delays reduced actual purchases. A number of countries leveraged their library budgets by creating inter-institutional networks (Indonesia, Korea, and Philippines). But having books and journals is one thing; having them used is another. There was a wide and unexplained range from not used much to doubled use.

4.9 *Increasing the utilization* of classrooms, libraries, laboratories, and workshops increased the return on investments made, postponed the need for further investments as enrollments expanded, and reduced per student recurrent costs. A number of projects achieved such increases. China reported the best results: classrooms 92 percent, laboratories 66 hours per week and libraries 75 hours per week.

4.10 **Teaching and learning.** There were a few reports—anecdotal evidence of impact—that upgraded faculty were teaching better than before (China, Indonesia, and Korea). It was not clear whether they had improved pedagogy, not just greater subject knowledge. The greater provision of equipment resulted in more required experiments being taught, but it was not clear whether students themselves performed more experiments. As for instructional materials, centralized production of lecture manuscripts contributed to the success of the new Lao National Polytechnic Institute. Similarly, "prototype" instructional materials produced by Indonesia's inter-university centers could permit rapid quality upgrading countrywide. Some Indonesian language textbooks and workshop job sheets for polytechnics were prepared. The Ghana Tertiary Education Project supplied multiple copies of core textbooks to the library. Bangladesh projects produced a large number of new public administration and business case studies.

4.11 **Research.** About a dozen projects expanded research and were judged to have improved its quality. Before the Second Indonesia University Development Project, only one-quarter of faculty was active, as incentives for research were too low. In the Malaysia University Development Project, the bulk of research was directly relevant to government or firms. In a growing number of projects, competitive research funds began to change incentives. Projects in Brazil, Indonesia, and Korea funded hundreds or even thousands of research projects, nearly all resulting in publications, with some taken up by the private sector or yielding patents.

EXPANSION OR CONTROL OF ENROLLMENTS

4.12 **Demand for trained manpower.** Most projects referred reasonably either to an existing unsatisfied demand or to the expected needs arising from projected economic growth. However, these were consistent with a wide range of possible expansion. No projects used labor market signals, the preferred way, to guide the relative expansion of different levels, types, or subjects. Only Kenya studied the graduate labor market. Social demand was stronger than market signals.

4.13 **Admissions/selectivity.** In many countries, parents and high school students expect the latter to enter tertiary education. This reflects largely the wish to enjoy the attractive private returns to tertiary education available in many countries. In some cases, the demand goes beyond this to reflect sociological factors. Also, universities are favored over other tertiary institutions, for both economic and non-economic reasons. The total demand in such circumstances is often referred to as "social demand." Excess demand for tertiary education, combined with the often-limited range of existing institutions, should promote selectivity in admissions. However, often the result is simply overcrowding as too many students are admitted, combined with a decline in educational quality. Francophone countries, where traditionally the baccalaureate confers an automatic university place, have found selectivity hard to introduce. In the projects in such countries, the easiest admissions to control were those of non-university tertiary institutions (Madagascar) and of non-traditional students (civil servants in Morocco).

4.14 Kenya studied the effect of selectivity on access for different genders and socioeconomic groups. In the Second Indonesia Polytechnic Project, new commerce courses provided access for female students. As for selectivity by field, Korea tried to boost the proportion of students in science-based fields with little success.

4.15 **Enrollment growth and control.** Countries achieved their planned expansion of project institutions, and usually a little more. When expansion targets were not met, both demand-side factors (over-estimation of the candidate pool and competition from other institutions, as in the Malaysia University Development Project, or unattractive institutions in the Bangladesh Public Administration Project and two-year polytechnics in Indonesia) and supply-side constraints (delays or staff constraints in polytechnics in the Ghana Project, and in Indonesia and Malaysia) played a role.

4.16 However, countries that tried to control the growth of enrollments were generally unsuccessful in doing so. Stakeholders with an interest in restraining the rate of expansion, for example, the Ministry of Finance and those concerned about quality, found it hard or impossible to resist the strong political pressure for tertiary education, especially university education, fueled by growing cohorts of secondary school leavers. On the side of success, one government with unusually strong social control froze university enrollments countrywide in response to a proliferation of institutions (China). Another restrained public enrollments, letting private universities expand to accommodate social demand (Indonesia). Kenya succeeded in restraint in reaction to a previous jump in admissions with quality decline. The governments that failed were either weak (Congo DR) or faced unusual pressures (Ghana had two entry streams while switching between secondary systems, while Morocco had an unusually large cohort of baccalaureate holders). The projects reviewed thus did not offer countries useful policy options for controlling enrollments.

4.17 **Reducing dropout and repetition.** High dropout rates are wasteful. The Philippines succeeded in reducing them from 16–40 percent to only 6 percent. One way to encourage students to persist and graduate was career counselors (Malaysia Polytechnic Development Project). Some countries (especially Francophone) have many long-staying ("chronic") students. Algeria was able to reduce the number and percentage of university students repeating. Indonesia reduced students' time to graduate through an accelerated engineering program.

FINANCING

4.18 Ten projects had as a main objective improving the financial sustainability of the subsector. This was hard to achieve. Even Ministries of Finance needed the pressure of difficult macroeconomic circumstances to restrain tertiary education budgets. In so doing, though, some actually threatened quality. Even though most projects reviewed were judged to have improved quality because capital inputs were increased or upgraded, recurrent budgets were also needed to operate and maintain equipment and support library purchases. Only two countries significantly reduced recurrent cost per student, although a number increased student-staff ratios and facility utilization. A few countries made limited progress in reducing subsidies, increasing fees, and limiting generous scholarships, despite vocal opposition. Hardly any improved their financially unviable student loan schemes. A few increased revenue generation by institutions somewhat. Competitive funding was a promising and increasingly used tool for financing research and even large-scale investments. However, all the gains taken together did not substantially offset the risks to the subsector posed in some countries by the combination of rising enrollments, constrained budgets, and minimal cost sharing.

4.19 **Budgets.** Many countries, especially in Africa, showed signs of runaway tertiary education funding. Some projects therefore had agreed ceilings. Presumably for macroeconomic reasons, governments squeezed tertiary education's *budget share* in Ghana, Kenya, and Malaysia. In Ghana, real recurrent expenditures per student fell by two-thirds; the subsector's viability may have been threatened. In China, a shift in responsibilities from central level had the potential to limit financing. On the positive side, Hungary installed "normative funding" for universities.

4.20 Many countries with funding difficulties made inadequate *recurrent allocations for non-personnel academic purposes*. However, the Nigeria Federal Universities Development Project increased library and research allocations through specific guidelines, and established equipment maintenance capacities.

4.21 *Project counterpart funds* reflect both borrowers' commitment and their financial circumstances. Korea maintained counterpart funds for the Science and Technical Education Project, even in the Asian financial crisis. However, many governments, Algeria, Bangladesh, Congo, and Senegal among them, reduced their contributions.

4.22 **Cost sharing.** In the projects reviewed, cost recovery from students was 90 to 100 percent of recurrent expenditures in private institutions where they existed. In public institutions, however, it ranged from zero or nearly so to only about 20 percent pre-project. Tuition was often free, while subsidies for room, board, transport, etc. ranged from zero to 100 percent. Government scholarships were often given to most or all students regardless of financial need, and—where such schemes existed—student loans were highly subsidized and anyway rarely repaid as intended.

4.23 Many of the projects included measures to increase cost recovery, but only rarely to over about 20 percent. There were some attempts to limit the generosity of scholarships, and to tighten up on student loans. Only one project (Venezuela Student Loan Reform Project) extended loans to lower-income or geographically remote students. However, these measures were often not implemented as intended. Some of the positive experiences are detailed below.

- Some countries managed to reduce *room and board subsidies*. Kenya imposed full-cost charges and Ghana 25 percent hostel charges after extensive public debate. However, Congo, Morocco, and Nigeria did not implement new or increased charges. Countries found it difficult to increase student commuting, mainly because of distances and transport difficulties and inadequate study space on campus. New non-residential institutions overcame some problems (Second Indonesia Polytechnic Project).

- Many countries have traditions of free undergraduate education and strong interest groups opposing *increased tuition fees*, alongside charges for post-graduates and part-time students, and private tertiary education. In Mauritius a plan involving increased cost sharing was not prepared; in Nigeria the Presidency rejected meaningful fees. On the other hand, Kenya universities increased fees twice and admitted large numbers of students not sponsored by government at much higher fees. Indonesia doubled fees for incoming students to 40 percent of costs. A non-traditional institution charged 80 percent of costs (Madagascar). Malaysia polytechnics established substantial fees and increased employer-sponsored training. Philippines universities introduced laboratory tuition and user fees, dedicated to equipment operation and maintenance and new purchases.

- While tens of developing countries have run *student loan schemes*, none has proved financially viable. Indonesia closed down its public university scheme because of high defaults. Ghana increased amounts with rapid inflation, running up a large deficit. Two countries had better experiences. Venezuela brought about acceptance of loans, and increased equity via loans to low-income and rural students. The subsidy was reduced drastically. Recovery of project loans reached 100 percent. However, they covered only 1 percent of tertiary education students. Also, the scheme later took on too many students. In Kenya, loans were subjected to means testing, amounts capped initially, and interest rates raised somewhat. A new efficient agency with enhanced powers got 38 percent of loans repaid (especially by formal sector workers).

- Many countries, particularly Francophone ones, spend much of their tertiary education budgets on student *scholarships*, mainly for living expenses. Attempts to control this have often given rise to violence. However, Morocco achieved a number of important changes: eligibility criteria, partial scholarships, freeze on nominal amounts; halving scholarships abroad and limiting them to essential fields not offered in country; and bringing student teachers' allowances in line with student scholarships. There was no information in the projects reviewed on the equity impact of scholarships.

4.24 **Revenue generation.** Universities have considerable potential to generate revenue. An important incentive was retaining 100 percent of earnings (Ghana and Indonesia). Promising units and activities reviewed were inter-university centers with research and services and accountancy development centers (Indonesia), maintenance organizations (Lao PDR), and specialized national centers (Korea). Firms hired Malaysia polytechnic facilities for their own training. Consultancy earned 10 percent of recurrent costs (Senegal).

5. Institutional Development Impact

5.1 Institutional development impact (IDI) as defined by OED is the extent to which a project improves a country's ability to make more efficient, equitable, and sustainable use of its human, financial, and natural resources, through (a) better institutional arrangements—"rules of the game" (laws and regulations), checks/balances and incentives, what governs organizations and their interactions, and culture—and (b) better alignment of organizations' mission and capacity with their mandates.

5.2 Institutional development, although not necessarily an explicit objective, was in fact an objective in almost all of the projects, relating as it did to both the quality and the planning and management objectives. The outcome was relatively good, with institutional development impact substantial in 18 projects (60 percent), modest in 8 projects (27 percent), and negligible in only 4 projects (13 percent). The achievement of substantial IDI was much better than for all education projects (33 percent) and for all projects (35 percent).

INSTITUTIONAL ARRANGEMENTS

5.3 **"Rules of the game."** The most significant aspect was the legal position of private tertiary education. Private tertiary education institutions are common, even in the majority, in much of Asia and Latin America, but until recently were almost absent from the Africa and ECA Regions. The projects did not attempt to change this directly. A few contained studies of the potential for development of private tertiary education. However, under the Morocco Education Sector Reform Program Project and Indonesia Tertiary Education Development Project, plans or strategies for the development of private tertiary education were not prepared, for reasons including lack of know-how and resources.

5.4 **Checks, balances, and incentives provided by oversight, competition, and voice.** The most significant aspects were national bodies, competitive funding, and, again, private tertiary education. Many countries have *national bodies* responsible for tertiary education. If properly constituted, these can act as a buffer between government and institutions, while still setting a direction in line with national policy and inducing institutions to change voluntarily. A number of new developments in this area took place under the sample projects. In Ghana, these were among the most important outcomes of the project. The National Council for Tertiary Education (NCTE), National Accreditation Board, and National Board for Professional and Technical Examinations were established; and the NCTE was to set up a joint admissions board internally as legislation stalled. In Kenya, the Commission for Higher Education assumed new functions of channeling government grants to public universities, and of coordinating their financial and development plans.

5.5 Bodies covering a subset of tertiary education or of science and technology were also established. Indonesia set up the National Graduate Education Council. Chinese polytechnics set up the Association of Polytechnics. In Malaysia Polytechnic the National Advisory Committee was set up with at least 50 percent employer representation. Turkey created a National Committee for Teacher Education. Science and technology and research projects led to the creation in Brazil of an Inter-Ministerial National Council for Science and Technology as a senior advisory body to the President. In Hungary, a new Science Policy Committee was supported by a technical Council; and a foundation was created to manage the National Science Research fund on an autonomous basis.

5.6 *Competitive funding* for allocation of large-scale funds, including investments and for research, was rather successful in the projects reviewed, as discussed earlier.

5.7 Most of the projects paid much less attention to *private tertiary education* than to public, in both policy reforms and investments. The Brazil Science Research and Training Project excluded private firms, delaying the growth of collaboration with industry. On the other hand, more than half of the colleges strengthened under the Philippines Science and Engineering Education Project were private, while under the Korea Science and Technical Education Project the proportion was about half. Nearly 20 percent of Bank funds went to private institutions under the Korea Universities Science and Technology Research Project. One country whose public institutions were under stress froze public sector enrollments, allowing the private sector to increase its share to a majority (Indonesia). It also opened its public sector graduate-level inter-university centers to upgrade staff from private universities (Second Indonesia University Development Project). In Kenya, the pioneering African country in this field, a national council has been accrediting private universities for years (11 already at project appraisal). In Ghana, accreditation of private universities began late in the project's life. Finally, many countries have student loan schemes and government scholarships, but apparently limited to students in public sector institutions. The only attempt to bring in students at private institutions, in Indonesia, failed when the existing student loan scheme was shut down instead.

5.8 **Governance of institutions and their interactions.** The most significant aspects were institutional autonomy and the private sector's role in the governance of institutions. Also relevant was the successful creation of inter-institution shared facilities and networks. Finally, success in improving subsector planning and management was quite variable.

5.9 Universities traditionally expect and claim academic freedom. They also often successfully resist countrywide expenditure constraints. Nowadays, the issue is how to combine furthering national policy objectives with considerable institutional autonomy. Malaysian universities faced a big change in one direction with the advent of sector-wide and long-range planning. In China, decentralization of responsibility for polytechnics to provinces and localities might weaken the impact of central policies and create financial strains. Hungary gave more autonomy to its universities, Academy of Sciences, and National Science Research Fund. In Indonesia, polytechnics and their original host universities parted legally, ending the fear of conflicts, such as over budgets. Also in Indonesia, inter-university centers remained attached to their host universities, but served the whole sector. Finally, a decree offered Indonesian universities the right to become "self-autonomous" and keep and use their revenues, but the universities hesitated, fearing the loss of government funds and subsidies. Malaysian polytechnics were accorded some authority to adapt courses, and to offer courses for or within firms, depending on the latter's needs. Finally, the Madagascar accounting/auditing institution INSCAE, although in the public sector, had a private sector board and the independence to operate free of public sector upheavals.

5.10 The private sector rarely played a direct role in the governance of public tertiary education institutions. An exception, as just mentioned, was the Madagascar Accounting and Management Training Project, where the institution had a board consisting of bank representatives and other private sector parties. More commonly, industry constituted or was part of either an institution-level advisory board or faculty-level advisory committees. Malaysian polytechnics project all had local-level industry-education advisory committees. Ghana's Polytechnics project had councils with strong private representation to oversee the relevance of programs. There was little reporting on experience with the working of these often-new arrangements. Elsewhere, in the Indonesia Polytechnic 2 project a legal requirement for an advisory board had to be waived, as industry made plain its lack of incentive to participate early in the institutions' life; later there was effective ad hoc liaison when industry felt it could benefit from the polytechnics.

BETTER ALIGNMENT OF ORGANIZATIONS

5.11 The judgments on project successes with institutional development impact probably rely heavily on achievements in the creation of new institutions, discussed above, and on capacity building, which is discussed here. The projects had a mixed record on capacity building with each type of organization involved. The following were success stories:

- Ministries were strengthened under the Malaysia Polytechnic Development Project.

- National or system-wide institutions were enhanced much more often than not. Successful examples were two umbrella or buffer institutions: the NUC under the Nigeria Federal Universities Project (including planning for an electronic network, and centralized procurement), and the National Vocational Training Council under the Malaysia Polytechnic Development Project (planning and research).

- Sub-national or other institutions covering part of the sector also improved more often than not. There were successes with International Advisory Panels and Chinese Review Commissions in the China projects, and with inter-university centers in the Second Indonesia University Development Project. Library networks were introduced successfully in several countries. The expert panels that considered proposals for competitive funding, particularly of research, took root in several countries.

- Individual universities were nearly all strengthened. They introduced elements of strategic planning (Ghana, Nigeria), strengthened their management (Algeria, Kenya), and developed equipment maintenance capacity (Indonesia, Nigeria). New types of units within universities were created successfully: joint science centers (Korea), accountancy development centers (Indonesia), and specialized national centers (Korea).

- Individual non-university institutions had a more mixed record. There were successes under the Madagascar Accounting and Management Training and Lao National Polytechnic Institute Projects.

- Strong project implementation units were created at national and institution levels in China and even under highly adverse conditions in Congo DR.

5.12 The record also suggests that other factors may be important or more important determinants of success in capacity building than the nature of the target institutions. Some of these factors may be: country conditions; accurate diagnosis of needs; how and with what participation the project interventions were designed; strong leadership, especially of new institutions; continuity of key personnel, or a broad enough consensus to survive changes in actors; and whether progress was monitored and pushed through, by borrowers and the Bank.

6. Sustainability

6.1 OED defines sustainability as the resilience to risk of net benefits flow over time. This review focuses on a few key dimensions of sustainability: the economic environment, especially demand; institutional and management aspects; and financial aspects (including government commitment). Some projects had performance ratings for sustainability but no specific discussion. However, some borrowers had comprehensive operational plans, and some PCRs had extensive discussions of sustainability, which should be the norm.

6.2 **Economic environment/demand.** Positive factors for sustainability were the projected existence of demand for general expansion of production of trained high-level manpower arising from economic growth (China Provincial Universities Project and projects in many other countries), general industrial demand for trained middle-level manpower (Indonesia and Mauritius polytechnics), or specialized manpower (Madagascar Accounting and Management Training Project). Improved legal and institutional framework was a good sign (Hungary Human Resources Development Project).

6.3 Danger signs were changes in the international economic and educational environment impinging on a conservative institution (Mauritius Higher and Technical Education), weak links to industry (Algeria University Development Project and Brazil Science Research and Training Project), relevance/quality problems with training offered (Senegal CESAG), and unwanted services (management services in the Bangladesh Public Administration Project, growth centers for private universities, and two-year polytechnics, in Indonesia).

6.4 **Institutional/management.** Positive factors for sustainability were the autonomy of institutions (Madagascar Accounting and Management Training Project and probably the China Provincial Universities Project), well-supported institutions (Ghana), well-established institutions (Malaysia Polytechnic Development Project), well-established project implementation units (China, Indonesia, and possibly Congo DR), useful tools (such as personnel MIS in the Bangladesh Public Administration Project, computerization and overall MIS in a number of countries), and the creation of inter-institutional networks (Philippines, library networks).

6.5 Danger signs were a loss of institutional autonomy (Lao National Polytechnic Institute being absorbed into a university faculty), poor management (Senegal), inability to pay faculty enough to compete with the private sector (Indonesian and Laotian polytechnics), and project units being disbanded rather than integrated (Lao National Polytechnic Institute Project).

6.6 **Financial.** Positive factors for sustainability were government willingness and ability to control the growth of enrollments (China, public universities in Indonesia, Kenya Universities Investment); government commitment, enthusiasm, or priority for the specific project institutions or educational offerings (Indonesia Second Polytechnic and Second University Development Projects, Korea Science and Technology Education and Research Project, Lao National Polytechnic Institute Project—recurrent budget; Malaysia Polytechnic Development Project and Mauritius Higher and Technical Education—project completion); favorable government policies not specific to the project (adequate operation and maintenance financing in Indonesia); willingness to contain subsidies (limited progress in a few countries); efficiency gains (a number of countries); and revenue generation by project institutions (inter-university centers in Indonesia, students not sponsored by government, and established cost-sharing, in the Kenya Universities Investment Project, fees covering 40 percent of costs for incoming students in Indonesia and 80 percent for all students in the Madagascar Accounting and Management Training Project). Increased private research funding and contract requests to newly equipped universities were also positive (Korea). Some project achievements would require continuing effort to sustain (cost controls in Morocco and Nigeria).

6.7 Danger signs were an unwillingness or inability to control the growth of enrollments (Congo, Ghana, Morocco, Nigeria); compression of the budget share of tertiary education (Ghana, Kenya, and Malaysia); inadequate means of other principal financiers (Senegal); devolution of responsibilities unaccompanied by financial resources (possibly the China Provincial Universities and Polytechnic and TV University Projects); unwillingness to extend a pilot scheme (Algeria University Development Project); unwillingness or inability to contain subsidies and increase cost-sharing (many countries made very limited if any progress); uncontrolled finances of student loan schemes (Ghana, Indonesia); limited revenue generation (Senegal); and failure to use revenue generated for project-type activities, such as operations and maintenance (Indonesia).

7. Bank Performance

7.1 **Quality at entry (QAE).** Preparation of seven projects followed a Bank sector study. Another quarter had significant government documents (national or sector plan documents) as their basis. Almost one-half apparently had no broader underlying documents. About half (16) were repeater projects or in countries with more than one Bank-supported tertiary education project; these may be said to have been designed within a reasonably comprehensive view of the subsector. The existence of an actual Bank sector study was no guarantee of a project's satisfactory outcome—only about half of these projects were rated satisfactory. Projects without a Bank sector study beforehand had a significantly better rate of satisfactory outcomes, but as just mentioned many of them also benefited from a subsector view.

7.2 Bank policy influence was hard to discern, as reports properly stressed country ownership of policies and strategies. Project designs were generally appropriate to country educational circumstances. However, they paid little attention to the role of private tertiary education, and in particular to equity and poverty reduction; economic analysis was generally absent; while arrangements for monitoring and evaluation were highly variable and generally inadequate.

7.3 The ratings for quality at entry were not established by the Bank's Quality Assurance Group (QAG) (which was created later) or OED, but were those of the final task manager for each project, who was the person responsible for producing project completion reports. Final task managers rated 26 of the 30 projects; they rated 18 of them satisfactory, which is below average. The few positive comments were: good where the project followed sector work, and where there was close collaboration on project design (Indonesia Higher Education Development Project); a good job on sector policy and high-priority investments (Kenya Universities Investment Project); good attention to the institutional setup and implementation planning (Second Indonesia Higher Education Project, Philippines Engineering and Science Education Project); and thorough preparation (20 working papers) and good analysis of recurrent cost implications (Malaysia Polytechnic Development Project). The economic analysis of the Mauritius Higher and Technical Education Project was a pioneering effort to derive a probability distribution of possible rates of return under different assumptions, rather than a single figure.

7.4 Bank faults were: no IDA sector strategy (Madagascar); project rationale weak or priority low (Madagascar, Venezuela); adjustment lending the wrong instrument (Nigeria); insufficient consultation with universities (Indonesia and Nigeria); insufficient public education (Nigeria); ignored borrower hesitancy, over-estimated ownership/commitment (Mauritius); operation too big (Nigeria); design complex or too complex (Indonesia Higher Education project, Nigeria, Philippines); over-estimation of institutional capacity, including implementation capacity (Malaysia Polytechnic, Mauritius, Nigeria); under-estimation of time required (Kenya); over-optimism regarding the ability to push through system rigidities (Algeria); project institution finances not explored enough (Indonesia, Kenya, Korea, Venezuela); recurrent costs under-estimated (Senegal); and problems regarding monitoring (many projects, see below). The complaint of "too-complex/big relative to implementation capacity" was an important theme of these projects, but not the dominant one, and a number of borrowers rose to the challenge successfully.

7.5 One important aspect of QAE is risk assessment and mitigation. Opposition to reforms was correctly anticipated in some countries (Congo, Senegal), but under-estimated elsewhere (Morocco). However, the Bank often under-estimated the strength of opposition to controlling the growth of enrollments, at least in Francophone countries (Morocco, Senegal). It also under-estimated the likelihood of poor implementation, since it frequently over-estimated implementation capacity; this is not unique to tertiary education. Education risks were sometimes anticipated and sometimes missed in no apparent pattern.

7.6 **Supervision.** Twenty-one of the 28 projects rated separately on supervision were rated satisfactory. There were a lot of compliments for Bank staff and supervision in the governments' own completion reports; one highlight was that the Bank had saved the project twice at critical junctures (Lao National Polytechnic Institute Project). One project had good supervision despite Bank staff turnover (Philippines Engineering and Science Education Project). The move of the project team to the country office during the project period was a positive (Hungary Human Resources Development Project).

7.7 The main criticisms were: frequent turnover of task managers (six in the worst case, Algeria; three or four in Congo DR, Lao PDR, Nigeria, and Venezuela); too little time spent, including decline in supervision frequency and slow responses (Congo DR had only one mission in its last three years despite a problem project rating, partly because of country conditions, while slow response in Lao PDR cost the borrower financially); failure to explain loan conditions and procurement adequately (Nigeria); focus on implementation details, including especially procurement but also subproject/university level activities, at the expense of policy reforms and of project goals generally, including the activity of monitoring and evaluation (Second China University Development Project, Madagascar, Mauritius, and Venezuela); acceptance of an unqualified manager (Senegal); and unwillingness to give problem project ratings even when merited (Senegal).

7.8 **Bank procedures.** The one area consistently raised was procurement—unfamiliarity of borrowers with Bank guidelines, and procurement delays. This is not unique to tertiary education, but the subsector would benefit from any more general remedial actions the Bank may take.

8. Borrower Performance

8.1 **Ministries.** The main feature of ministries responsible for these projects was high turnover, of ministers (Congo DR) or senior sector officials (Algeria). Other national-level institutions suffered from this too, for example, the National Universities Commission in Nigeria (including some unqualified managers), and the Fundación Gran Mariscal de Ayacucho (FGMA) in Venezuela. The University Grants Commission in Bangladesh was good, but had insufficient power to bring about changes in individual institutions.

8.2 **Project implementation units** (PIUs). Most of the projects reviewed had dedicated PIUs. These were often very good (Congo DR, Lao PDR), especially when handling their second Bank-financed project (China Provincial Universities Project, Second Indonesia Polytechnic Project). However, sometimes they were not integrated into their parent agency during implementation (Nigeria initially, Venezuela FGMA), so that the benefits of their experience did not help the whole organization. High management turnover hurt them (Bangladesh Public Administration Project, Second Indonesia Polytechnic Project). Finally, they were not necessarily sustained and integrated at the end of the project (the Lao National Polytechnic Institute PIU was disbanded at the end of the project, dispersing the expertise gained). These findings are consistent with those in OED's note on "Utilization of Project Implementation Units (PIUs)" (2000).

8.3 **Complex projects.** China evolved a good multi-level system for implementation and its monitoring. The central PIU worked with a designated person in each central agency involved in the project, and a PIU at each project educational institution. It also developed a good system for using TA. Major overseas fellowship programs in a number of countries were handled initially by TA management contracts, most of which worked quite well but were costly, then were brought more in-house. International and local expert panels worked well in a number of implementation roles, including identifying visiting scholars and judging proposals for competitive funding; they were less helpful on policy issues or on monitoring and evaluation.

8.4 Coordination among multiple executing agencies was often a problem. Ministries did not communicate well (Mauritius); components of multi-agency projects remained unrelated (Madagascar); progress was slowed. However, China and Indonesia showed that projects with large numbers of institutions could be implemented well.

8.5 **Bank procedures.** Borrowers, especially first-time borrowers and local-level PIUs, were unfamiliar with Bank procedures (Algeria, Indonesia Higher Education Development Project, Nigeria, Philippines). Procurement procedures were the most frequent cause of problems. The unfamiliarity caused delays, especially in the early stage of project implementation, contributing to typical time overruns of 1 to 2 years. At the other extreme, Korea's Supply Agency handled procurement in many Bank-financed projects and had few problems.

9. Monitoring and Evaluation

9.1 The project arrangements for monitoring and evaluation were highly variable and generally inadequate. Indicators, baseline data, and targets were often missing. There was virtually no evidence provided on educational outcomes, and little on labor market outcomes; evidence on research was rather better. There was virtually no attention to or evidence on equity or poverty reduction, for example, the impact of expansion, admissions policies, student loans, and scholarships.

9.2 **Arrangements.** The effort put into monitoring and evaluation varied considerably. Bank requirements have increased substantially over time, from nothing when earlier projects were designed to more substantial arrangements. One project had no arrangements defined (Korea Environmental Research and Education Project). One borrower did not keep or provide data on those parts of the project funded by the government (Malaysia University Development Project). One had no monitoring of impact by either borrower or Bank (Second China University Development Project). One had no data at all (Indonesia Higher Education Development Project). Only a few projects were more positive. One borrower developed a monitoring system, but halted it because it would duplicate a separate MIS also being developed, and also because evaluation was unwelcome (Indonesia Higher Education Development Project). One project had qualitative monitoring, a client satisfaction survey, a project survey, and a comprehensive evaluation at the end of implementation (Brazil Science Research and Training Project). The questionnaire for the PCR and the government's evaluation gave some indications of outcomes and impact in one case (Korea Science Education and Libraries Computerization Project). Finally, an impact evaluation was planned for one project (Malaysia Polytechnic Development Project), and a limited one was actually carried out in Brazil.

9.3 **Indicators, baseline data, and targets.** A number of projects reviewed had no indicators defined up front (Brazil, Korea Environmental Research and Education and Science Education and Libraries Computerization Projects). Some projects had no baseline data (Second Indonesia University Development Project, Korea Universities Science and Technology Research Project, Madagascar Accounting and Management Training Project, Venezuela Student Loan Reform Project). One of these had no targets either (Korea). Nearly all projects with defined indicators had them for things like physical targets (Madagascar), short-term inputs (Venezuela), implementation (Malaysia Polytechnic Development Project), enrollments and faculty degrees (Indonesia Accounting and Management Training project). One multi-institution project provided common indicators to each institution to use in monitoring its own subproject (this would also facilitate aggregation) (Algeria). Most projects did not have indicators of things like: quality of education (Madagascar); outputs with long-term impact (Venezuela); development objectives (Kenya Universities Investment Project); or a framework for assessing outcomes and impact (Malaysia Polytechnic). One project had performance and outcome indicators implicit in the project design but nothing in the SAR (Hungary). However, one project had very numerous and detailed indicators, derived from a sector projection model and to be monitored annually (Morocco). Another had hundreds of enrollment, input, and process indicators, with baseline data and targets; these were hard to use, and still did not cover impact (Philippines). One project had an elaborate policy actions program with indicators, but largely of inputs. The record was better although not uniformly so for research, with a number of projects making use of competitive funding reporting on outputs and quality (research projects completed, publications, patents), and impact (use by private firms) (Brazil, Hungary, and three projects in Korea).

9.4 **Educational, labor market, and economic growth outcomes.** The stated objectives of the projects reviewed did not explicitly include learning achieved by students, although the expansion objective was to increase the supply of trained manpower. There was almost no information concerning examination results. The limited information provided on graduates produced showed that

targets were met or exceeded. Information on the experience of graduates in finding jobs was not extensive, but mostly very positive. Few projects had tracer studies of graduates. The limited information on labor market outcomes made it hard to connect the projects with outcomes in terms of national economic growth.

9.5 **Equity and poverty reduction outcomes.** There was almost no attention to or evidence on the projects' actual or potential effects on equity or poverty reduction. One area of interest would be changes in socioeconomic backgrounds or gender balance of students as enrollments increased. This could go along with information on the allocation of student loans and scholarships. It would also be desirable to have information on educational achievement and labor market success of students by socioeconomic background and gender.

9.6 **Management information systems (MIS).** About one-quarter of the projects featured development or upgrading of management information systems. The most comprehensive experience may have been in Nigeria Federal Universities. All the universities computerized their payroll, and some started computerizing student records. A uniform accounting system and codes was agreed, and commercial accounting software installed everywhere. NUC developed overall MIS software. Indonesia installed a pilot system, then extended it to 14 more universities but without an evaluation. Philippines set up a system for S&T at the end of the project. Brazil established a system for fund management and procurement, and was moving to a broader national system. Lao Polytechnic installed an easy-to-use personnel and student MIS. However, in other projects MIS efforts did not bear fruit.

9.7 **Recommendations.** Assessing the results of so much investment in education is very important for both countries and the Bank. For a number of reasons, the implementation period of a single project is generally too short for all of its benefits to be realized; many of the project inputs only arrive close to the end of implementation. Nevertheless, those outcomes that can be measured should be. There could be changes in both educational achievement and equity, as shown by the pattern of enrollments, improvements in dropout and repetition rates, and a trend of better examination results by the end of implementation. Information on graduates should be provided systematically. Tracer studies should also be systematic, to adapt the training provided to labor market changes including regional differences. They would also yield information on the recruitment and job performance of graduates. Other benefits could be more fully measured some years after the end of disbursements, when learning achievement can be assessed more fully, and projects should include arrangements for such assessments.

9.8 Much more effort needs to be put into monitoring and evaluation, and measurement of outcomes and impact. OED focused its Project Performance Assessment Report on the Philippines project (and another in that country) on monitoring and evaluation; it sets out what needs to be done in all projects to be effective.

10. Recommendations

- Review the extent to which the Bank's past tertiary education assistance has promoted economic growth, poverty reduction, the goals of Education for All and the other benefits cited in *Creating Knowledge Societies* as justifying Bank involvement and public subsidies.

- Strengthen the design and oversight of tertiary education operations in low-income countries to improve their performance and forge explicit linkages between the project elements and the Millennium Development Goals and the Education for All initiative.

- Dramatically strengthen the monitoring and evaluation of tertiary education projects to generate reliable and timely information on education and labor market outcomes.

- Ensure that all tertiary education projects systematically enhance the access of poor and disadvantaged students, including women.

- Consult key constituencies early and maintain their support throughout the implementation of tertiary education reform programs.

- Increase efforts to promote private provision and financing of tertiary education.

Appendix Table 1. Tertiary Education Projects Completed in FY90–FY00

Country	*Project Title*		*Amount ($US millions)*	*IDA/IBRD*	*Implementation Period (FY)*
AFR					
Congo, DR	Higher Education Rationalization		11.0	IDA	88-93
Ghana	Tertiary Education		45.0	IDA	93-99
Kenya	Universities Investment		55.0	IDA	92-99
Madagascar	Accounting and Management Training		10.3	IDA	86-95
Mauritius	Higher and Technical Education		16.0	IBRD	95-99
Nigeria	Federal Universities Development		120.0	IDA	90-97
Senegal	CESAG		5.5	IDA	86-92
		Subtotal	**262.8**		
EAP					
China	Polytechnic & TV University		84.8	IDA	84-92
China	University Development 2		145.0	IDA	85-93
China	Provincial Universities		150.0	IDA	87-93
Indonesia	Polytechnic 2		107.4	IBRD	83-91
Indonesia	University Development 2		147.0	IBRD	85-94
Indonesia	Higher Education Development		140.3	IBRD	88-94
Indonesia	Accountancy Development		113.0	IBRD	88-95
Indonesia	Higher Education Development 2		150.0	IBRD	91-96
Korea, Rep	Universities Science And Technology Research		45.0	IBRD	90-96
Korea, Rep	Science Education & Libraries Computerization		50.0	IBRD	92-98
Korea, Rep	Environmental Research and Education		60.0	IBRD	93-99
Korea, Rep	Science and Technical Education		190.0	IBRD	94-00
Lao PDR	National Polytechnic Institute		3.5	IDA	89-97
Malaysia	University Development		48.2	IBRD	88-93
Malaysia	Polytechnic Development		107.0	IBRD	93-00
Philippines	Engineering and Science Education		85.0	IBRD	92-98
		Subtotal	**1,626.2**		
ECA					
Hungary	Human Resources Development		150.0	IBRD	91-97
		Subtotal	**150.0**		
LCR					
Brazil	Science Research And Training		150.0	IBRD	91-97
Venezuela	Student Loan Reform		58.0	IBRD	92-00
		Subtotal	**208.0**		
MNA					
Algeria	University Development		65.0	IBRD	91-98
Morocco	Education Sector Reform Program		150.0	IBRD	86-90
		Subtotal	**215.0**		
SAR					
Bangladesh	Business Management Education and Training		7.8	IDA	83-90
Bangladesh	Public Administration (Training, Personnel & Management)		12.0	IDA	83-91
		Subtotal	**19.8**		
		Total	**2,481.8**		

Appendix Table 2. Project Objectives and Bank Strategies

Country	Project Title	Main Objectives					Bank Strategies	
		Policy	Expansion	Quality	Finance	Plan/Mgt	Comprehensive Approach[a]	Positive Incentives
AFR								
Congo, DR	Higher Education Rationalization			Y		Y	Yes - studies	
Ghana	Tertiary Education	Y		Y	Y	Y	Yes	Comp. Teaching Fund; Accreditation
Kenya	Universities Investment			Y	Y	Y	With SECAL	Comp. Research Fund
Madagascar	Accounting and Management Training		Y	Y			No	
Mauritius	Higher and Technical Education		Y	Y		Y	No	Comp. Research Fund
Nigeria	Federal Universities Development	Y		Y	Y	Y	Yes	Comp. Funding; Accreditation
Senegal	CESAG		Y	Y			No	
EAP								
China	Polytechnic & TV University		Y	Y			No	
China	University Development 2		Y	Y		Y	Yes	
China	Provincial Universities		Y	Y		Y	No	
Indonesia	Polytechnic 2		Y	Y			No	
Indonesia	University Development 2		Y			Y	No	Comp. Research Fund
Indonesia	Higher Education Development	Y	Y	Y	Y	Y	Yes	Comp. Research fund; Accreditation; MIS
Indonesia	Accountancy Development			Y		Y	No	
Indonesia	Higher Education Development 2		Y	Y	Y	Y	Yes	Comp. Research fund; MIS
Korea, Rep	Universities Science And Technology Research		Y	Y			No	Comp. Research fund
Korea, Rep	Science Education & Libraries Computerization			Y			No	
Korea, Rep	Environmental Research and Education			Y		Y	No	Comp. Research fund
Korea, Rep	Science and Technical Education	Y	Y	Y			No	Comp. Research fund
Lao PDR	National Polytechnic Institute		Y	Y		Y	No	MIS
Malaysia	University Development		Y	Y		Y	No	
Malaysia	Polytechnic Development	Y	Y	Y	Y	Y	Yes	
Philippines	Engineering and Science Education	Y	Y	Y	Y		No	Accreditation; MIS
ECA								
Hungary	Human Resources Development		Y	Y		Y	No	Comp. Research Fund
LCR								
Brazil	Science Research And Training	Y	Y		Y	Y	No	Comp. Research and support area funding; MIS
Venezuela	Student Loan Reform	Y			Y	Y	No	
MNA								
Algeria	University Development			Y		Y	Yes	Comp. Investment Funding
Morocco	Education Sector Reform Program	Y			Y		Yes	
SAR								
Bangladesh	Business Management Education and Training		Y	Y			No	
Bangladesh	Public Administration (Training, Personnel & Management)		Y	Y		Y	Yes	MIS
		9	20	26	10	20		

Appendix Table 3. OED Ratings

Country	Project Title	Outcome[a]				Institutional Development[b]	Sustainability[c]	Bank Performance[d]	Borrower Performance[d]
		Overall	Relevance	Efficacy	Efficiency				
AFR									
Congo, DR	Higher Education Rationalization	U	N	M	N	M	Uc	*U	*U
Ghana	Tertiary Education	MS	S	M	M	S	Uc	S	S
Kenya	Universities Investment	U	S	M	M	N	Uc	S	U
Madagascar	Accounting and Management Training	S	S	S	M	S	HL	S	S
Mauritius	Higher and Technical Education	U	H	M	H	M	Uc	U	U
Nigeria	Federal Universities Development	U	H	M	M	M	Uc	U	U
Senegal	CESAG	U				N	Ul	*U	NR
EAP									
China	Polytechnic & TV University	S				M	Uc	NR	*S
China	University Development 2	S	H	S	M	S	L	NR	*S
China	Provincial Universities	S	S	S	S	S	L	*S	*S
Indonesia	Polytechnic 2	S	S	S	S	S	L	*S	*S
Indonesia	University Development 2	S	S	S	S	S	L	*S	*S
Indonesia	Higher Education Development	S	S	S	S	S	L	*S	*S
Indonesia	Accountancy Development	S	H	S	S	S	L	*S	*S
Indonesia	Higher Education Development 2	S	S	S	S	N	L	*S	*S
Korea, Rep	Universities Science And Technology Research	HS	H	H	H	S	L	*HS	*HS
Korea, Rep	Science Education & Libraries Computerization	HS	H	H	NA	S	Uc	S	S
Korea, Rep	Environmental Research and Education	HS	S	S	S	S	L	HS	S
Korea, Rep	Science and Technical Education	HS	S	S	S	S	L	S	S
Lao PDR	National Polytechnic Institute	S	M	M	M	S	L	U	S
Malaysia	University Development	S	S	S	S	M	L	*S	*S
Malaysia	Polytechnic Development	S	S	S	M	S	L	S	S
Philippines	Engineering and Science Education	S	S	S	M	S	L	S	S
ECA									
Hungary	Human Resources Development	HS	S	S	S	S	L	HS	HS
LCR									
Brazil	Science Research And Training	S	S	M	M	S	Uc	S	S
Venezuela	Student Loan Reform	U	S	M	M	M	Ul	U	U
MNA									
Morocco	Education Sector Reform Program	U				S	L	*S	*U
Algeria	University Development	U	S	N	N	N	Ul	U	U
SAR									
Bangladesh	Business Management Education and Training	U				M	Uc	NR	NR
Bangladesh	Public Administration (Training, Personnel & Management)	S				M	L	*S	NR

Note: Ratings with * are averages of components

a. Outcome ratings: HS = Highly satisfactory; S = Satisfactory; MS = Moderately satisfactory; U = Unsatisfactory
Relevance/Efficacy/Efficiency ratings: H = High; S = Substantial; M = Modest; N = Negligible; NA = Not Applicable

b. Institutional Development ratings: S = Substantial; M = Modest; N = Negligible

c. Sustainability ratings: L = Likely; Uc = Uncertain; Ul = Unlikely

d. Bank and Borrower Performance: HS = Highly satisfactory; S = Satisfactory; U = Unsatisfactory; NR = Not Rated

* Ratings with asterisks: Prior to 1996, there was no overall category for Bank performance, but 3 separate categories for Identification, Appraisal, and Supervision; for borrower performance, there were three categories, for Preparation, Implementation, and Compliance with Covenants. The asterisked ratings are averages of these separate category ratings, where available.