

8.1 Status

Upon completing secondary school, graduates have essentially five options. They can enter the workforce, enroll in a technical training program, enroll in a teacher training program, seek admission to the university or one of the other college-level programs available in the country, or leave the country for foreign study. Figure 8.1 reports the approximate distribution of secondary level graduates in 1996/97.

Figure 8.1
Distribution of Secondary School Graduates
Across Postsecondary Options, 1996/97

Passed 1995/96 Secondary School Exam	No. of Students Selecting Each Option 1996/97*	%	Postsecondary Options
	2,594	25.3%	Enter NUOL (including baccalaureate degrees and diplomas)
	287	2.8%	Enter Teacher Training (11+3)
	342	3.3%	Enter Teacher Training (11+1)
	665	6.5%	Go Abroad for Baccalaureate Study**
	6,363	62.1%	Enter Workforce

Notes:

* These figures are estimates, since it is not possible to clearly desegregate the number of new students at NUOL directly entering the College of Foundation Studies from those entering a pre-college support program.

** Students studying abroad include only those being sponsored by Government or international organizations that report such information to Government. Students who are privately funded by their families are not included.

Source: Compiled from data provided by the Statistics Office and Department of Higher, Vocational and Technical Education, MOE, 1995/96

Vocational training is available to students completing grade 5 (primary) and grade 8 (lower secondary) and is oriented to skill development. Technical training is available to students who have completed grade 11 (and to some who have completed 8+3) and is oriented toward middle- and higher-level managers in technical settings. There are 23 middle-level technical colleges, of which 11 are under the direct administration of MOE and the rest are established and operated by other ministries. Higher level technical education is provided through NUOL and will be discussed later as part of the discussion of that institution.

Entrance to vocational and technical training follows the same general procedure. About half the students enter through the quota system, in which a fixed number of places is allocated to each province where the provincial education director selects who from that province will attend, based on grade 11 examination

scores and other considerations. The remaining places are filled through a competitive examination developed and administered by the Department of Vocational, Technical and Higher Education (DVTHE).

National Goals and Strategies

Among the goals established by Government in its Strategy for Educational Development by the Year 2000 and its subsequent amendments were: to promote the creation of private schools, in particular vocational schools, and assure the quality of the management of those schools; and, to reorganize vocational and higher education and, in particular, to establish a national university in Vientiane and colleges in four regions of the country as a means of providing skilled manpower necessary to socioeconomic development of the country.

Organization Structures

The organization of vocational and technical education is undergoing considerable change. Until recently, vocational training was a two-year program and technical training was a three-year program. In October 1998, a national decree on vocational education development and training was approved which would lengthen vocational training programs from two years to three years and shorten technical training from three to two years, as summarized below:

	Previous Structure	New Structure
Vocational training	8+2	8+3
Technical training	11+3	11+2 or 8+3+2

The National Polytechnic Institute was consolidated into NUOL as the Faculty of Engineering and Architecture. The 10 postsecondary technical schools that previously operated as independent institutions have been designated as regional colleges of NUOL. Postsecondary technical training programs are offered by the Ministries of Education, Agriculture & Forestry, Health, Information & Culture, Finance, and Communication. MOE is discussing the feasibility of developing additional regional colleges to better serve the needs of the provinces. While affiliated with NUOL, these colleges might include some technical training programs appropriate to the needs of the provinces in which they are located.

Within MOE, general supervision of vocational and technical training is the responsibility of DVTHE. Each school has its own director who handles the day-to-day management of the institution. MOE has some responsibilities for the oversight of the training programs offered by other ministries. For example, depending on the school, they may administer entrance examinations and admit students.

Student Enrollments and Characteristics

Between 1991/92 and 1997/98, enrollments in trade-oriented vocational training programs sponsored by MOE have grown by 57 percent, increasing from 434 students to 683 over that seven-year period. However, during that same time, the voca-

tional-level teacher training program (available to primary students completing grade 5) was closed when minimum qualifications to teach at the primary level were raised and the vocational programs run by the Ministry of Health declined in enrollment.

Overall, technical training has lost enrollments over that same period. Enrollments dropped from about 3,400 in 1991 to 1,900 in 1996 and have only slowly started to climb again. Due to the reduced enrollment in the mid-1990s output of graduates declined. Only in 1997/98 did the number of graduates begin to increase again.

Teachers

About 27 percent of the current vocational and technical teachers were trained in the former Soviet Union and East Germany. New teachers are generally recruited from Lao students returning from foreign study and graduates from NUOL. A few schools have international staff as part of international assistance to vocational/technical education.

Information on the turnover of vocational and technical teachers is not available. However, in many countries, the retention of qualified vocational and technical teachers has been a problem because teachers with these skills can earn many times more money in the private sector. Teacher retention has not been a problem in Lao PDR because the vocational and technical institutes have developed an effective incentive for retention; specifically, teachers are allowed to use school equipment to operate small businesses and to keep the monies they generate. Additionally, they are allowed to run short-term workshops in their skill area and to keep participants' fees. Since few teachers would have access to comparable equipment outside of their school setting, this procedure provides strong encouragement for teachers to remain affiliated with their school. Moreover, the business enterprises provide teachers with continued practice in their area of expertise.

Curriculum

MOE has specified the skill areas in which instruction is offered. At present, programs are offered in 24 trade areas in vocational education and in 34 trade areas in technical education. There is no national curriculum for vocational and technical schools (although the curriculum for the 8+3+2 program is scheduled to be developed in the next two years). Instructors at each school prepare a curriculum for their institution and submit it to MOE for approval.

A National Committee for Improving Vocational and Technical Curriculum was established in 1998, with the expectation that, over time, this Committee will provide national leadership in curriculum development and national standards. The Center for Vocational Education Development, established in 1998, will decide curriculum for vocational schools beginning in 1999. In the meantime, the Lao-German Technical School, with funding from the German Technical Co-operation Agency (GTZ), has offered upgrading courses for vocational/technical instructors from other technical schools in the country. This in-service upgrading is designed to assist teachers to upgrade the curriculum of their school and provides participants opportunity to directly practice their vocational skills.

Evaluation

The curriculum is based on passing a prescribed number of courses in which student performance is evaluated by each instructor in each course. Each course is worth a certain number of credits based on its overall importance to the program. There is no over-all final examination at the end of a student's program. Students can graduate when they successfully pass enough courses to meet the minimum number of credits required to complete their program.

Facilities and Equipment

With only a couple of exceptions, vocational and technical schools lack modern equipment, textbooks, and a sufficient budget for the materials and supplies needed for student work. As a result, much of the instruction is through lecture, with emphasis on memorizing rote learning. While vocational schools report that around 60 percent of their instructional time (40 percent in technical schools) is devoted to practical skill development, the meaning of this varies across schools. Where budget allows, students may directly practice their skills. In many schools, however, practical training may be watching a demonstration on how to weld, operate a lathe, or take a measurement.

Costs, Financing, and Donor Support

On a per student basis, vocational and technical training are the most expensive programs offered by MOE. Table 8.1 reports the unit costs of vocational and technical training compared to the education programs at other levels. One reason is the cost of boarding for quota students; which accounts for 32 percent of the overall unit cost. However, even if boarding costs are removed from the analysis, it remains over three times more expensive than a year of upper secondary schooling. While expensive for MOE, vocational and technical schooling can also be expensive for

Table 8.1
Estimated Recurrent Cost of Education by Level of Schooling

	Student Enrollment*		Unit Cost in kip		Unit Cost in Per Capita GDP	
	94/95	96/97	94/95	96/97	94/95	96/97
Pre-primary	27,658	29,799	39,627	44,800	0.15	0.10
Primary	696,706	770,702	19,839	24,524	0.08	0.06
Lower Secondary	110,593	136,312	43,601	46,129	0.17	0.11
Upper Secondary	42,352	47,755	48,403	55,282	0.18	0.13
Technical/Vocational	9,481	3,164	251,767	252,528	0.96	0.58
Teacher Training	4,065	3,006	313,899	237,192	1.20	0.54
Higher Education	6,936	11,978	247,116	182,508	0.94	0.42

Note: * Student Enrollment is for public schools only
Source: Mingat, A. (1998a)

the student. In most schools, students have to pay some or all of the costs for materials they use in their training (such as wood, sheet metal, nails, and paint).

Quota students receive free tuition and board, in return for which they are obligated to return to their province upon graduation. Non-quota students receive free tuition but no board. For this reason, most non-quota students are from the urban areas. The extent to which quota students actually return to their provinces varies but many choose to remain in urban areas where there are more employment opportunities. Vocational and technical schools are responsible for generating some of their own non-salary recurrent budget. This money comes from the overhead charge that schools charge their instructors when they offer special courses or use school space or equipment for their private businesses or consulting. Many instructors offer these special courses because students pay tuition, an important salary supplement for teachers.

Several technical schools have special support arrangements with international assistance organizations such as GZT. Thailand and China have also both been active in supporting individual (or clusters of) schools. The additional resources provided by this international sponsorship means these schools generally offer better equipment and superior instruction.

8.2 Analysis

Internal Efficiency

a) Student Flow

Until 1988, there was virtually no student dropout from vocational and technical schools, since graduation meant guaranteed employment through the central planning mechanisms of MOE and the students' home provinces. With the adoption of the New Economic Mechanism in 1988, there was a sharp drop in enrollment and an increase in dropout among non-quota students, estimated to be as high as 60 percent (Wesseler, 1994), although this finding is contested by MOE. This drop in intake and increase in attrition proved temporary. The enrollment growth since then has been due, in part, to the growth of the private sector in Lao PDR and the corresponding demand for skilled personnel. Grade repetition and dropout is still thought to be very low, though data on these issues have not been collected.

b) Quality of Instruction

The quality of instruction across most schools is low. The relevance of the curriculum is limited, to a large extent, by the equipment and instructional materials available for use in training. With only a couple of exceptions, vocational and technical schools lack modern equipment, textbooks, and a sufficient budget for the materials and supplies needed for student work. As a result, much of the instruction is through lecture, with emphasis on memorizing rote learning with little opportunity to directly practice the skills of their trade.

c) Lao Language Instruction

While students have studied some foreign language as part of their general secondary preparation prior to attending vocational or technical schooling, their fluency in any foreign language tends to be very low. This poses serious constraints on students' job opportunities since assembly, repair, and operating instructions for most modern equipment are in English, French or German.

External Efficiency

a) Lack of Preparation for Higher Technology Employment

Until 1988, there was virtually full employment of graduates of vocational and technical training programs, assured through the central planning mechanisms of MOE and their home provinces. While that guarantee ended in 1988, conversations with those working closely with vocational and technical training suggest that students are generally able to find employment after graduation. One reason is that most local industry is still low-technology. The presence of higher technology in local industries is variable but still limited. That situation is changing at a phenomenal speed and school officials express concern for how their institutions will be able to prepare graduates for the higher technology employment opportunities they see coming.

Increasingly, employers want vocational and technical graduates who have strong literacy and numeracy skills and either know how to operate modern equipment or can quickly learn. They point out that the brewery and the Pepsi bottling company have two of the most highly automated bottling systems in the region. Employees must be able to operate and maintain high-technology production lines. Similarly, the hydroelectric plants now under construction will be highly automated and will require staff who can operate this type of equipment. With the rise of tourism and trade, hotels have mushrooming demand for secretaries and accountants who can use computers and modern software. Automobile maintenance and repair has generally been low-technology, but the rapid increase in automobile traffic in Vientiane over the last three years has led to an influx of modern cars that can only be repaired by technicians who can operate computer-based motor diagnostics and realignment systems.

b) Lack of Alternative Training Mechanisms

Other than companies that are willing to train their own workers, the alternatives to formal vocational and technical training programs are limited. For example, Lao PDR has no formal apprenticeship programs or guild training programs.

c) Alignment with Employment Opportunities

No comprehensive tracer study of vocational or technical graduates has been conducted, though the Lao-German Technical school is currently conducting a study of its own graduates in the Vientiane area. An earlier study by Wesseler (1994), described as a tracer study, did not actually trace graduates' employment opportunities but did include interviews with employers. This study found a widespread view among private sector managers that the quality of vocational and technical training was generally poor and not well aligned with the needs of the growing economy. In particular, major employers needed workers who could operate computer controlled production lines and maintain sophisticated electronic equipment, skills not presently taught in Government-sponsored technical schools.

To some extent, the pressure for more modern, higher technology training is being accommodated by the private sector. Training programs now being offered by private computer companies, generally charging very high fees, are overcrowded. Some of the higher technology companies have imported better trained workers from Thailand and nearby countries. Auto repair shops are training their own personnel. The private courses offered by technical schools which charge considerable tuition are fully subscribed.

Over time, vocational and technical schools will either have to upgrade to train at these higher skill levels or become largely obsolete. Some technical schools are actively seeking additional foreign assistance to develop higher technology training programs in selected technical areas. For example, a new electronics training laboratory is being supported by the Japanese International Cooperation Agency (JICA) to help prepare students for employment in the hydroelectric industry. A tourism training program is being set up to train students in the use of small computers, word processing, electronic data management, and secretarial skills.

d) Employment Advisement and Job Placement

Part of each technical students' program is a 12-week internship in a local business or industry. While some schools try to place their students, most students are expected to arrange their own placement. Students are also responsible for finding their own employment opportunities after graduation. The vocational and technical schools do not have any systematic procedure for advising students of employment opportunities or helping them secure jobs after graduation.

Access and Equity

Female participation in vocational and technical training programs varies across the trade areas, as indicated in Table 8.2, but overall female enrollment is about 39 percent. Information on enrollment by ethnic minority is not available.

Table 8.2
Female Enrollment in Vocational and Technical Programs
by Program Area, 1996/97

Type of Program	Total	Enrollment	
		Female	% Female
Technical	872	302	35%
Nursing	235	190	81%
Arts, Dance and Music	303	59	20%
Total	1,410	551	39%

Source: MOE, Annual Bulletin, 1996/97, Statistics Office

Administration and Management

The strength of the administration and management of individual schools varies as a function of the individual administrators involved but, overall, seems to be strong. While unable to provide the financial support needed at the vocational and technical schools, MOE has offered leadership in establishing the National Committee for Vocational and Technical Education.

Cost and Financing

The recurrent cost of vocational and technical training is not sustainable, given the generally low quality of instruction, the enormous capital cost of creating and sustaining a more modern training system, and the urgent competing priorities in other parts of the education system. Alternatives need to be considered. Several options are suggested in the recommendations below.

8.3 Suggested Priorities and Recommendations

Priority 1 Reduce the Cost to Government of Vocational and Technical Education

Government is no longer able to afford the expense of vocational and technical education. Even though vocational and technical training is already the most expensive programs offered by MOE, current levels of expenditure are not sufficient for schools to offer relevant or high quality training.

Recommendations

1. Assess the Feasibility of Connecting Technical Education to Major Employers: Conduct a feasibility study of ways to connect technical education and training to major companies such as the hydroelectric company, Beer Lao, and the Rice Institute. In such arrangements, the company could pay for facilities to house the training activities while MOE could pro-

vide instructors. These public-private training centers could be located in provincial locations (depending on the venue of the private companies). For example, in some cases a company might want to sponsor a technical school. In other cases, a company might incorporate the training program within their existing company facilities. The study could also identify other relevant models. These training programs would better link technical education to labor market needs.

2. **Explore Partnerships with the Private Sector as a Mechanism for Delivery of Vocational and Technical Education:** MOE might consider forming public-private partnerships for the delivery of vocational and technical training. These partnerships provide a way to share the cost while (potentially) increasing the relevance of the training.
3. **Assess the Feasibility of Charging Tuition at Vocational and Technical Schools:** Tuition represents one means of cost-recovery. Moreover, the need to attract tuition paying students would provide additional incentive for vocational and technical schools to ensure their curriculum is aligned with labor market needs.
4. **Assess the Feasibility of Plans to Establish Vocational Schools and Technical Colleges in Two Provinces:** To better assure access in rural areas, the current five-year plan of MOE proposes the establishment of vocational schools and technical colleges in two provinces. Given the high cost and the low quality of the present training, it is recommended that MOE assess the feasibility of these plans.

Priority 2 Improve the Relevance of Vocational and Technical Training

Recommendations

1. **Conduct Tracer Studies of Graduates:** Tracer studies provide information to faculty and administrators on the types of employment their graduates find and the relevance of graduates' vocational and technical training to those jobs. Two types of tracer studies are particularly useful: in the longitudinal cohort method, a group of graduates are followed for several years after graduation to assess their experience in finding a job, the type of jobs they were eventually able to find, and their evaluation of the relevance of their vocational and technical training in their job; and, the cross-sectional method starts by identifying one or more employers (e.g., Beer Lao) and interviewing selected employees to determine the type of education they had received and their experiences in finding employment. It is recommended that MOE sponsor a series of tracer studies to develop a better understanding of the relationship between vocational/technical training and employment.

2. **Conduct Employer Studies:** Employer studies are conducted to determine the types of jobs available, the knowledge and skills employers want new employees to have, and employers' assessment of the skills and abilities of graduates they have hired. The purpose of the study is to provide information that vocational and technical schools can use in refining their instructional programs. It is recommended that MOE conduct employer studies in five to six areas of the fastest growing employment opportunity in Lao PDR (e.g., hotel and tourism, hydroelectric power, the beverage industry).
3. **Develop Better Labor Market Demand Information:** MOE needs better labor market demand information as a basis for planning the extent of its vocational and technical education offerings, designing curriculum, and student advisement. At present, this information is not available. It is recommended that MOE collaborate with MOLSA to develop this type of information and update it on a regular basis. It is important that results are presented in enough detail and in a format that will support planning at the program and curricular levels.
4. **Development Information and Procedures for Student Advisement:** To make wise choices about their education, students need to understand the types of employment opportunities currently available in the country and the projections of future employment opportunities. They also need to understand career ladders, that is, what entry jobs lead to what types of advanced positions. For example, many primary and secondary students know that larger hydroelectric projects are under construction. However, many do not know what trade skills or educational background will be needed to find employment in the electric power industry. It is recommended that MOE undertake development of job advisement materials that could be made available to primary and secondary schools throughout the country.

Priority 3 Improve Linkages between Vocational and Technical Education and Other Organizations

Recommendations

1. **Assess the Feasibility of Technical School Graduates Being Able to Access Baccalaureate Programs at NUOL:** Graduates of technical training programs frequently express a desire to continue their education at the baccalaureate level. It is recommended that MOE study the feasibility of creating a route by which technical school graduates could access further postsecondary education.
2. **Examine Ways to Better Integrate Vocational and Technical Education and Nonformal Education:** While much of the emphasis in non-formal education is on literacy, there is also a well-documented need within that same

target population for skills training aimed at income generation. It is recommended that MOE identify additional strategies for the delivery of vocational skills training through nonformal education programs. It is recommended that MOE work closely with MOLSA to develop a unified program for offering vocational skills training through the nonformal education system.

