

not be easy to persuade teachers, students, and parents that changes need to be made to established modes of teaching and learning, especially since these practices are seen as having served Singapore well in the past. A local researcher has also pointed out further inhibiting factors toward the development of a thriving R&D culture—namely, the lack of an indigenous R&D tradition and the relative lack of interest among many local undergraduates in an R&D career.² In other words, it may not be sufficient to provide generous research funding and to import foreign talent.

The aim is nothing less than to establish links with the most prestigious universities as well as academic and research standards comparable to those in these institutions.

A third trend is the continued reliance on foreign expertise, especially from the industrialized nations, and the modeling of Singapore's initiatives on those found in academic institutions within those nations. The aim is nothing less than to establish links with the most prestigious universities as well as academic and research standards comparable to those in these institutions. At the same time, there is also recognition that it might be unrealistic to expect local institutions to attain the same degree of worldwide renown as an institution such as Harvard University. Some academics have suggested instead that the National University of Singapore model itself after the University of California at Berkeley. It is rather doubtful to what extent Singapore will ever be in a position to attract world-class faculty and students on anything like the scale at more prestigious institutions. The fact remains that in several senses, Singapore still remains on the periphery of the international academic system. It is therefore unlikely that a substantial number of top-notch researchers would contemplate giving up their posts in North America and Europe for a long-term career in Singapore. ■

Notes

1. Committee to Upgrade LASALLE and NAFA, *Creative Singapore: A Renaissance Nation in the Knowledge Age* (Singapore: author, 1998), 38.
2. C. B. Goh, "Science and Technology in Singapore: The Mindset of the Engineering Undergraduate," *Asia Pacific Journal of Education* 18, no.1 (1998): 7–24; C. B. Goh, "Imported Technology: Its Idea and Development," part 1. *Journal of the Malaysian Branch of the Royal Asiatic Society* 71 (1998): 41–54.

Postsecondary Education Evolution in Chile

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In Chile, postsecondary education and particularly the universities have a strong linkage with the state for two reasons. First, universities were created as state institutions to educate civil servants, and until the 1960s the state remained the main employer for professional workers. Second, in spite of university autonomy the state used to finance much of the universities' budget.

This situation explains why political change in the country has such an impact on the post secondary educational system. In the last three decades the system has had to contend with four governments ranging in orientation from leftist socialist to a rightist military junta.

In the mid-1960s, the newly elected government promoted the policies of *desarrollismo* (modernization of production, increased production for domestic consumption, and the promotion of equity by distribution of national incomes and the increase of capital by massive savings). The state assumed an important regulatory role, and postsecondary education became a basic element in the drive toward modernization. At that time the country had eight universities—two large national public ones and six private ones (of these, three were catholic universities and three were closely related to the local community).

In the mid-1960s, enrollments amounted to 3.7 percent of the 18-to-24-year-old age group. The government decided to increase enrollments as part of the goals of development. Considering it more difficult and expensive to expand the state institutions, it was decided to partially finance the private ones. Moreover, to maintain standards, the applicants were selected through a national admissions test (PAA). As a result this policy, enrollments increased at an annual rate of 15.2 percent during this period.

In 1970, a socialist government was elected, and postsecondary education was declared a right of the youth of the nation. In order to satisfy demand tuitions and fees were nearly entirely abolished and the state fully financed postsecondary education at both state and private institutions. This is why even today the traditional private universities have the same financial support as the state institutions. Because of the concept of university autonomy the state exercised no control over the public funds, but quality control remained, in the form of the national admissions test. Enrollments increased by an annual rate of 24.2 percent. By the end of this government, in 1973, the rate of enrollments reached the 11.8 percent of the col-

lege-age population.

This period also saw an increase in the number of full-time faculty, and the universities became committed to the social economic and political transformations going on in the country. The students become more involved with political parties and student activism also expanded within the universities. That explains why the military junta that took the power 1973 appointed military officers as rectors to create discipline and quietude. Also, all curricula were revised and the social sciences were dramatically diminished. Moreover, the students and teachers who opposed the new government were expelled or fired. The rate of enrollments fell to a low of 7.5 percent in 1980.

In 1981, the military government, inspired by neoliberal ideals and supporting free-market competition, introduced new legislation and a number of important changes in postsecondary education:

- The two national state universities were divided into 16 separate institutions merging all provincial branches; new private self-financing institutions were established.
- The postsecondary system was divided into three kinds of institutions. The universities, the professional colleges, and technical centers offering two- or three-year programs. The last two categories became profitable institutions, but this was not true of the universities.
- State financing of all the public and the traditional private universities was decreased, and they were required to obtain almost 50 percent of their budgets on their own.
- Efficiency criteria were introduced to govern the administration of state universities and determine budgetary allocations.
- The principle of the free market was introduced as the best way of dealing with the nation's higher education system.
- For quality control, evaluation procedures were implemented for licensing new institutions. However, the national admissions test become noncompulsory.

Enrollments at the new private institutions again rose to a rate of 10.1 percent of the college-age population.

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In 1990 and 1994 two new democratic governments were elected. While the system has remained essentially the same, the concept of the state's role has changed. Today the is more actively involved and seeks to balance institutional autonomy, the requirements of efficiency and

self-financing, and market competition with equity and national goals for development. Today there are 256 postsecondary institutions (67 universities, 69 professional colleges, and 120 technical centers). Of these only 16 are public state universities; all others (240) are private. A total of 73 percent of enrollments are in private institutions. The current level of enrollments is 23 percent of the college-age population.

Chile offers the opportunity to compare the policies of a state-financed system with those of a free-market-based one. Postsecondary education during the state-financed period could be characterized as follows:

- homogeneous, because all institutions had the same quality standards;
- functional, because the system was planned to meet society's needs;
- elitist, because the requirement of a national admissions test implied high selectivity of the better applicants;
- equitable, because students were admitted regardless of socioeconomic background, thus promoting social mobility;
- bureaucratic, because the system entailed a lot of regulation and administration, which is associated with excessive administrative costs and inefficiency;
- resistant to change, because to innovate in bureaucratic institutions is more difficult; and
- politicized, because the election of officials in state-controlled institutions is usually more tied to government interests and consequently more influenced by political parties.

On the other hand, during the free-market-based period the system could be characterized as follows:

- heterogeneous, because of variations in academic standards (while perhaps 10 percent are excellent, more than half are of low quality);
- complex, because there is not a clear the difference among institutions. Universities can be large research universities or specialized schools operating in rented facilities. Some professional colleges are better in quality than some universities;
- competitive, because all private and public institutions need to increase enrollments and compete for state funds through the Ministry of Education competition;
- segmented, because the rich attend the best institutions and later have access to the best jobs, while the poor are relegated to low quality institutions and are often underemployed after graduation; and
- deregulated, because the market determines student demand but is not linked to the professional labor market. There is, as a result, a disconnection between training and careers.

Learning from the past, it is possible to conclude that the government should promote autonomy and innovation for postsecondary education but should also support quality and minimum standards and facilitate equity by means of consensual legislation, focused funding, fellowships, and competitive funds; and voluntary evaluation and accreditation procedures. ■