Education in Singapore: A study of State values as cultural capital

Johannes Han-Yin Chang
National University of Singapore

Scholars have made sustained efforts to study values as a form of cultural capital at both the individual and the aggregate level, to understand how they affect learning, status attainment, and social reproduction. However, little inquiry has been conducted beyond these two levels. This paper uses the experiences of three ASEAN countries to argue that under certain circumstances, state values may also operate as cultural capital to shape an entire educational system, thereby affecting, to a substantial degree, both educational achievements and education-related socio-economic development.

Introduction

In the sociology of education scholars have made sustained efforts to study the role of values as a form of cultural capital, in social reproduction and as a factor in *explaining* individual differences in status attainment (Kahl 1953; Bernstein 1961, 1990; Bowles and Gintis 1976; Bowles 1977; Bourdieu 1977; Bourdieu and Passeron 1990; Erickson 1987; Ogbu 1991; Fischer *et al.* 1996; Ainsworth-Darnell and Downey 1998; Goyette and Xie 1999). However, there as been little research into the impact of certain values of the state that may also be treated as cultural capital. This paper examines how the values of the state – in this instance those of the Republic of Singapore—have shaped the system of education and played a leading role in the country's high levels of educational achievement and *education-related socio-economic development*.

In this study the overall educational achievements of a country are measured by two indicators: (1) the ratio of student enrolment at the tertiary and primary levels [the so-called T-P ratio], and (2) the regional or world ranking of the country's top university (or universities). The educational contributions to social and economic development are measured using three indexes: (1) the extent to which the educational system is able to meet a country's needs for a trained and cultivated labor force; (2) the cost-effectiveness of educational investment in producing such a labor force (as reflected in the average duration of training needed for

tertiary students and in the rate of graduate unemployment and under-employment); and (3) the contribution of the education system to the expansion of the country's middle class.[1]

In this paper all state values capable of promoting educational achievement and education-related socio-economic development are defined as the 'education-related cultural capital' of the state. The central argument of the paper is that in a society where the government is empowered to play a significant role in regulating education, the nature of the education-related values of the state is a consequential determinant of the country's educational achievement as well as its education-related socio-economic development. It follows, therefore, that in this type of society, much of the difference in education and socio-economic development may be explained in terms of variations in such values. Singapore provides an empirical case study to substantiate this argument. Further evidence is provided by a brief comparison between Singapore and Indonesia and the Philippines.

Primary Values of the Singapore Government

The values of the Singapore government that relate to education comprise neo-Darwinism, pragmatism, Golden-Means-oriented rationalism, communitarianism, conservative liberalism, and a preference for 'good government' (Lee 1993; Chua 1995; Chang 1997; Han *et al.* 1998). These values generate as well as regulate a variety of more specific values. Therefore, they are referred to as primary values. Given the authority of Lee Kuan Yew, the former prime minister, it is reasonable to assume that his primary values were collectively echoed by his government colleagues and that these values remain uppermost in the government of Lee's successor Goh Chok Tong.

Neo-Darwinism

The Singapore government's version of Darwinism emphasises high-standard achievement orientation, far-sighted planning, conviction, competitive excellence, 'hardheadedness', and adaptation; at the same time, it tempers the 'hardheadediness' with a measure of compassion to ensure that those who are less successful in competition 'will not fall through the floor'. Lee places special emphasis on achievement orientation:

> I think you must have something in you to be a 'have' nation [developed nation]. You must want. That is the crucial thing. Before you have, you must want to have. And to want means to have means to be able first, to perceive what it is you want; secondly, to discipline and organise yourself in order to have the things you want..., and thirdly, the grit and the stamina,...
>
> (Han *et al.* 1998:396)

Lee believes that an average level of 'grit', 'discipline' and 'stamina' are not sufficient; one must exercise the highest degree of determination and toughness. This is applicable to every nation, every organisation, and every individual. Taking himself as an example, he said,

> ... if I decide that something is worth doing, then I'll put my heart and soul into it. I'll give everything I've got to make it succeed. So I would put my strength, determination and willingness to see my objective to its conclusion. Whether I can succeed or not, that's another matter—but I will give everything I've got to make sure it succeeds. ... If you have decided something is worth doing, you've got to remove all obstacles to get there.
>
> (Han *et al.* 1998: 16)

Pragmatism

The second value component is pragmatism. For the Singapore Government, this refers to plausibility, reality testing, and progressive adjustment. To quote Lee once more:

> I'd read up the theories and maybe half-believed in them. But we were sufficiently practical and pragmatic enough not to be cluttered up and inhibited by theories. If a thing works, let's work it, and that eventually evolved into the kind of economy that we have today. Our test was: Does it work? Does it bring benefits to the people?
>
> (Han *et al.* 1998:109)

> Practice decided for me, in the final implementation of policies. It was not the theory of capitalism, not Milton Friedman, that decided my policies. But in each instance, we calculated—if that doesn't work, this wouldn't work.
>
> (Han *et al.* 1998:15)

In Lee's view, any effective policy must match human nature as well as the country's life conditions. Therefore, if a policy has been proven, in practice, not to have matching qualities, it should be altered or abandoned. Furthermore, as life conditions keep changing, a policy that operates effectively today may not function productively some years later; policies, then, must be reviewed and adjusted as life conditions change. For example, when talking about how many engineers to train each year in Singapore, Lee said:

> In five years, we make a review and in another ten years, we make a second review. And the guiding factors will be what is the best possible way, given our peculiar, almost unique circumstances, to mobilise our manpower and train them.
>
> (Han *et al.* 1998:114)

Golden-Means-seeking rationalism

In adopting pragmatism, the Singapore government is not solely concerned to produce policies that 'work'. The main emphasis is on formulating and implementing policies that work best for Singapore's survival and development:

> I'm prepared to look at the problem and say, all right, what is the best way to solve it that will produce the maximum happiness and well-being for the maximum number of people?
>
> (Han *et al.* 1998:130)

The Singapore government believes that policies reflecting such rationalism can be developed on the basis of critical learning—through indirect learning by observation and direct learning by practice. It attaches special importance to learning from other politicians' and other countries' errors. To quote Lee once more:

> If we do not learn from other people's errors, costly errors, we would be ruined, wouldn't we? We have got very little margin to spare.
>
> (Han *et al.* 1998: 391; also see pp.113, 121,131 and Lee 1993:234)

The learning approach adopted by the Singapore government would be classified as a Golden-Means-seeking approach in Confucianism (*zhongyong*). The Confucianist Golden Mean philosophy contends that the best solution to every problem, the 'Golden Means', is located between two sets of non-optimal alternatives—the conservative (*buji*) and the excessive (*guo*); therefore it can be identified by excluding both the excessive and the conservative. Since 'other people's errors' have been caused by either their 'conservativeness' or 'excessiveness', by avoiding their errors, the Singapore government can expect to develop a set of more effective *policies*.

Communitarianism and conservative liberalism

Given the specific circumstances of Singapore, the government has long held that one of the best ways to ensure Singapore's survival and development is to pursue communitarianism combined with conservative liberalism. Communitarianism has three major aspects: (1) to define the interest of the whole nation as of paramount importance and perceive individuals' interests as derivable from the well-being of the nation; (2) to take the interest of the whole society as the point of departure for policy making (contrasting with what Lee calls the Western 'atomistic approach' built upon individualism); (3) to use society's interest to integrate and adjust the interests of individuals and in some cases, to check the perceived anti-social tendencies arising from individual or interest groups. As Lee has stated:

> the principle which guides our actions is that the paramount interest of the whole community must prevail (Han *et al.* 1998: 38).
> Americans believe their ideas are universal—the supremacy of the individual and free, unfettered expression. But they are not. Never were.
>
> (Han *et al.* 1998:206)

Conservative liberalism involves ensuring equal opportunities for all citizens regardless of class or ethnic background in competition for all kinds of social privileges (cf. Lenski 1984) within the general framework of law and order as facilitated by strong and effective government leadership (Han *et al.* 1998:158).

Good Government

Lee considers a good government to be one that is clean, honest, capable, efficient, forward-looking, and firm. The government must strive for a better life for the people. *This* aim of government is even more crucial than democracy to the survival and development of society. Moreover, government policy should be geared towards the genuine long-term interests of the people rather than the short-term views expressed in opinion polls:

> The whole ground can be against me, but if I know it is right, I'll do it. That's the business of a leader.
>
> (Han *et al.* 1998)

Values at Work

Parsons' concept of cultural determinism has been strongly criticized as a theoretical system but he made a valid point in arguing that values regulate action and interaction.[2] This has clearly been the case in Singapore where the primary values of the government have played a powerful role in shaping and regulating policy and its implementation, including the formulation and execution of education policy.

Rational Control of Educational Scale and Type

In North America and Western Europe the individual is given primacy in relation to society. It follows that access to education, including higher education, is perceived of as an uncompromising right of the individual. Accordingly, the education system is operated in such a way that it allows sufficient space for the individual to exercise that right, to pursue any kind of education to whatever level, as long as the student is academically qualified and can afford to pay the fees. Self development and individual choice, rather than the overall interest of society, constitute the top priority. By contrast, the guiding principle of the Singapore government's

education policy is to give top priority to the overall interest of society in line with its commitment to communitarianism. This principle, together with principles derived from other primary values such as pragmatism and Golden-Means-seeking rationalism, provides the moral justification for government control over the type and scale of education provided in Singapore.

First of all, the government decided that unlike many types of education in other countries, Singapore's education should be geared strictly to human resource development to serve the country's drive to industrialisation and that individual choice should operate only within that general framework. Consequently, emphasis is placed on training in productive skills and professional expertise. In a speech at the University of Singapore in 1966, Lee Kwan Yew, then Prime Minister, had this to say:

> with the exception of Japan, 75 per cent of the universities in Afro-Asia were established after independence. Next, the faculties that have been established invariably are the easier faculties to establish—the Arts and the Humanities. Very few have had science and technology faculties established. So they all inherit more or less a situation such as ours, where we have established a more or less educated elite in the sense that they can write, they can read, they can compose their thoughts, they can perhaps become administrators, they can alleviate suffering as doctors or help discharge the administration of justice as lawyers; they can, in fact, increase your population and your capacity to consume, but they are unable to increase the things that the people want to consume. Your men who can produce your modern industrial society—your industrial chemists, your technocrats—are missing.

In his view, that situation had to be corrected by a two-stage development program:

> first to produce the teachers, the administrators, the men to fill the professions—your accountants, your architects, your lawyers, your technocrats, just the people to do jobs in a modern civilised community. And next and even more important ... to lead thinking—informed thinking—into the problems which the nation faces.

In line with this thinking, polytechnics froze their initial plans to develop into universities and concentrated instead, on middle-level technical training. The universities also expanded their enrolments in engineering and other types of higher-level technical training. Consequently, the proportion of arts and social sciences students at the tertiary level decreased from 12 per cent in 1968 to 6 per cent in 1992 (*Yearbook of Statistics*, Singapore, 1970, 1992). Thereafter, it rose again to 9 per cent by 1995.

Given the scarcity of financial resources, the government believed that Singapore could not afford the luxury of providing space for everyone to study in higher learning institutions during the period of industrialisation. If everyone had been free to enter university there would have been an excess of graduates, many of whom, including engineers, would have been unemployed, and there would also have been a general devaluation of credentials. This would have had an adverse impact on individuals and generated a heavy cost to society as a whole. The resources spent on training surplus graduates were better spent on the promotion of more economic growth thereby *benefiting* more individuals in an indirect sense (cf. Han *et al.* 1998:347-350; Collins 1979; Dore 1976).

The Peoples' Action Party [PAP] Government decided to control the scale of higher education in such a way that the number and categories of university and polytech graduates produced each year approximately meet, but did not significantly exceed, the needs of that year's occupational structure as defined by the economy. At the same time, the government took precautions to avoid an under-supply of educated personnel. As an economy develops, the demand for managerial and professional personnel increases. To meet this demand, the scale of tertiary education has been progressively expanded in the past three decades. The enrolment ratio of tertiary-primary level students in 1965 was 4:100 (cf. *Yearbook of Statistics*, Singapore 1967:135); by 1998 it had increased to 35:100 (cf. *Yearbook of Statistics*, Singapore 1998:224).

Management of Educational Quality

Several measures have been taken to preserve and enhance the quality of education in the light of neo-Darwinism, pragmatism and Golden Means-seeking rationalism. They follow three principles: (1) to identify the 'most talented' students and to provide them with the best learning conditions: (2) to create a high overall level of learning pressure; and (3) to supply adequate guidance to channel the pressure-driven dynamic in the direction of appropriate knowledge acquisition.

Educational selection is conducted on the basis of achievement in a milieu of 'contest mobility', to borrow Turner's terminology (1961). It begins at primary five and is carried out several more times at higher levels in the form of streaming, school entrance screening, degree program screening, special training program screening, and selection for privileged education rewards.

According to Lee Kuan Yew, the distribution of ability in a society takes the shape of a 'diamond'. The majority of people, with average intellect and abilities, are located in the centre. Above this, IQ and competence levels rise to an apex. Below it, and in about the same proportion as at the top,

abilities taper off, down to the mentally subnormal and retarded (Han *et al.* 1998:155). Through progressive selection, the most able are identified and properly nurtured. Those who excel in education are offered tougher and more rigorous training in fast streams. Some are awarded scholarships to study in high-quality but more expensive independent schools. At the secondary level, the best of them may be admitted to special programs for gifted children. At the first and higher degree levels, a small number of the most able students are sent abroad on generous scholarships to study in world class universities in countries like the United States and Britain. Indeed, prestigious foreign universities are being treated virtually as an extension of Singapore's own education system. At the same time, the next best group are given openings in local universities to pursue their intellectual development.

Like systematic selection, learning pressure is also used as a major mechanism for generating high quality performance. Progressive selection emphasises training for the more capable, whereas the learning ethic affects all students equally. In Lee's view, 'even that average, we must nurture (Han *et al.* 1998:394)'.

One way to create pressure is to manipulate the scale of tertiary education and to adopt a meritocratic approach to school admission. University places are scarce in Singapore. Only about half or less of qualified applicants are admitted to the National University of Singapore. This implies that in order to use university education as a well-recognised pass to join the middle class, a student needs not only to study hard, but also has to surpass a large number of contestants who are also academically qualified for university education.

> Special help, such as education subsidisation and semi-official community support, is offered to less competitive groups to correct their relative lack of resources, thereby ensuring that advanced education is affordable and enhancing their competitiveness. There is, however, no lowering of standards for university admission for selected groups as is commonly practised in other countries.

Streaming is another mechanism used to generate learning pressure. Being in a fast stream implies a greater probability of access to university education and is also highly prestigious. The opposite is true of the 'lows' in the slower streams. To avoid becoming a 'low' and to strive to become a 'high' has long been a motivating factor for both students and their parents.

To further increase pressure, high standards are set to measure students' learning performances. British 'O' level and 'A' level examinations have long been used in Singapore's schools and the universities hire noted professors from abroad as external examiners to assess examination questions, and to selectively read examination scripts as well as honours

students' theses. This approach is sometimes jokingly labelled as 'colonialism.'

High pressure to succeed, in combination with the practical value of academic credentials, generates an enormous momentum to learn amongst students, especially those in the fast streams. In order to channel this mobilised energy in the right direction, the Ministry of Education [MOE] and all public schools under its jurisdiction endeavour to hire highly motivated and high quality teaching staff. This is achieved by competitive salaries which attract many applicants for new teaching positions. The National University of Singapore [NUS] is a good example. Salaries offered to lecturers are more than the average for their counterparts in Australia and Britain. This generates a high level of competitiveness in staff recruitment and most of the NUS teaching staff are recruited from either the United States, Britain, Canada, Australia or China, or from among locals who have an overseas Ph.D.

To motivate the teaching staff to perform well, the universities provide for differential salaries, controlled promotion, teaching evaluation, commendation, warnings and penalties for poor performance, and control over contracts and retirement. For instance, the retirement age for NUS staff is 55 years. Even a tenured professor must satisfy certain university and/or departmental requirements to continue in salaried service beyond that age. The situation in the schools is similar in principle. At the present time the Singapore government is aiming to elevate the two main universities—the NUS and Nanyang Technological University – to world class level.

Effects of Values-Guided Educational Management

The afore-mentioned management strategies seem to have worked well. According to the results of a set of international tests conducted in 1994 on more than half a million middle school students from forty-four countries, Singapore topped the ranking list in both mathematics and science. (*Lianhe Zaobao* 21 Nov., 1996). In 1997 *Asiaweek* gave the National University of Singapore the second highest academic ranking amongst Asian universities (*The Straits Times*, 21 May 1997). Furthermore, the high-pressure, highly-disciplined and highly competitive system of education had produced a generation best described as competitive and tough, with a strong sense of discipline and a high level of respect for authority.

This educational recipe has proved very effective in responding to Lee's vision of Darwinian competition, and initiating and sustaining Singapore's drive to industrialisation. The universities, polytechnics and lower level schools have produced the necessary professionals and managerial personnel as well as competent skilled workers to meet basic economic manpower needs.

Studies have also revealed a positive and highly significant relationship between education (as an independent variable) and GNP in Singapore (see Table I).

TABLE I
Rates of Societal Economic Returns to Education (in Percentage)
By Level and Sex, 1977-1986

	Primary		Secondary		Tertiary	
Year	Male	Female	Male	Female	Male	Female
1977	-0.43	2.23	10.15	9.89	40.59	31.32
1978	-0.73	2.38	8.20	12.98	37.50	25.72
1979	-0.25	2.53	6.42	7.65	34.07	25.40
1980	-0.08	2.41	8.33	9.19	29.76	22.25
1981	-0.02	1.59	8.42	8.00	25.75	20.78
1982	-0.07	0.08	8.26	9.00	18.91	15.97
1983	-0.08	3.11	9.65	10.50	16.00	13.08
1984	-0.51	3.13	5.64	11.14	20.26	15.91
1985	3.51	5.07	8.55	8.75	19.91	16.90
1986	3.49	3.81	8.29	10.23	17.76	15.05

Source: Reorganised from Low *et al.* (1991:175).

Table I presents the impact of Singapore's educational investments at various levels by sex on its GNP increase from 1977 to 1986. For example, in 1986, the rate of socio-economic return from tertiary education for males was 17.76 per cent. This means that every $100 invested in tertiary education for males in 1986, returned a dividend of $117.76 to add to Singapore's GNP. With strong support from its educational system, Singapore has become an industrialised state in less than four decades. From 1960 to 1995, GDP increased from about S$2 billion to S$102 billion dollars. Per capita indigenous GNP also jumped from S$2,405 in 1970 to S$38,169 in 1998. In terms of per capita GDP (measured according to purchasing power parity), Singapore has now advanced to the level of the top ten most developed countries.

Singapore's economic development is a product of the operation of a variety of factors. Besides education, these include the government's successful efforts to attract multi-national companies, creating a world-class harbour and airline, developing an effective regional financing centre, and promoting a timely regional economic expansion.. This is not the place to illustrate how 'government values' have shaped the nation's economy. Suffice to say that just as in the case of education, success in other areas of national life would not have been possible without the powerful influence

of these values. This rapid economic transformation has resulted in a substantial change in Singapore's occupational structure and generated a phenomenal expansion in the relative size of the middle class.

A Comparison with the Philippines

In south-east Asia, the Philippines has an education system that is more developed than those in most other ASEAN countries, however, it has major problems. One is the low level of cost-effectiveness of educational investment as reflected in the substantial gap between the number of university graduates produced every year and the capacity of the Philippine economic and administrative sectors to absorb them.

In general, this gap may be measured using three indicators: (1) the ratio of the country's level of tertiary enrolment in a given year and the number of managerial, professional and para-professional positions in the occupational structure, or what is henceforth referred to as the '*referential supply-demand ratio*'[3]; (2) the rate of proportional expansion of the managerial, professional and quasi-professional positions in the labour force; and (3) the market value of university and polytechnic graduates.

Table II presents a comparison between Singapore and the Philippines on the first indicator. The table indicates that the *referential supply-demand ratio* of the Philippines is consistently higher than that of Singapore, and the difference is huge.

TABLE II
Singapore and the Philippines:
Referential Supply-Demand Ratio, 1980, 1990, 1995

Year	Country	Number of Students (Tertiary)	Higher Level Occupational Positions	Ratio
1980	Singapore	22,633	192,800	12:100
	Philippines	1,335,889 *	1,245,000 **	107:100
1990	Singapore	55,672	372,700	15:100
	Philippines	1,552,110	1,640,000	95:100
1995	Singapore	85,004	611,800	14:100
	Philippines	2,017,972	1,863,000	108:100

* Enrolment in 1981.

** An estimate for 1981 on the basis of the statistics for 1978 and 1985.

Source: Reconstructed from *Yearbook of Statistics, Singapore*, 1990, pp.59 & 286; 1994, pp.56 & 283; 1997; *Philippine Statistical Yearbook*, 1983, pp.472 & 488; 1994, pp.(10) 12 & (11) 17; 1998, pp.(10) 12 & (10) 11.

Table III refers to the second indicator, the rate of proportional expansion of higher-level occupational demand. This table shows that the creation of managerial, professional, and para-professional positions in the Philippines has experienced very little change since 1966 whereas Singapore experienced a 202 per cent expansion between 1966 and 1996. This indicates that Singapore's high rate of expansion of higher level occupational positions creates many openings each year for fresh university and polytechnic graduates whereas in the Philippines, the low rate of expansion cannot generate an adequate number of places for university and polytechnic graduates.

TABLE III
Singapore and the Philippines: Proportion of
Higher Level Positions in National Occupation Structure

Country	1966	1970	1980	1990	1996
Singapore	12.3	10.4	13.6	23.9	37.2
Philippines	7.8	6.5*	6.7**	7.4	7.5

* Figure of 1971.
** Figure of 1978.
Source: Ministry of National Development, Singapore and the Institute of Economic Research, University of Singapore, *Singapore Sample Household Survey*, 1966, No. 1: pp.146-153 (figures adjusted according to the Singapore 1990 occupation classification codes); *Yearbook of Statistics, Singapore* 1981/1982, p.55; 1996, p.41; *Philippine Statistical Yearbook*, *1978*, p.51; *1983*, p.498; *1994*, p.(11)7; p.(11)19.

Tables II and III explain why it is relatively easy for a university graduate in Singapore to find a managerial or professional job. In Singapore 84 per cent of the 1998 group of university graduates obtained a job in this category within seven months of graduation, despite the economic recession (reconstructed from National University of Singapore and Nanyang Technological University 1999: 59). Overall, 98 per cent of those who had a university degree or a polytechnic diploma and who were economically active were able to secure a job; and 91 per cent of the jobs taken belonged to the managerial and professional or semi-professional categories (*Statistical Yearbook, Singapore 1998).*

It was not possible to obtain accurate data on the employment of Philippine university graduates. However, Tables I and II suggest that the proportion of Philippine tertiary graduates who are unemployed or under-employed (i.e. perform a job which does not require tertiary education) must be much larger than that of Singaporean tertiary graduates. A large number of Philippine university graduates have been trying to seek employment at the managerial and professional level abroad. In 1980 about

16 per cent of the land-based Philippine overseas workers worked as managers or professionals (*Philippine Statistical Yearbook* 1983: 499). This percentage was approximately three times the corresponding proportion in the labour force at home. This situation still persists. Indeed, some Philippine university and college graduates work overseas as housemaids. In 1997, about 2.6 per cent of the Philippine labor force (747,696 persons) was employed abroad (*Philippine Statistical Yearbook 1998*: 11:31). The Philippine government has not disclosed how many of them who had a university degree or college diploma were employed as lower class workers.

From an economic standpoint graduate unemployment or underemployment is a waste of resources. If these resources had been used as direct investments in the economy, faster economic development could have been realised and thus more managerial and professional positions could have been generated to absorb university graduates. A faster pace of economic development would also ensure a faster proportional expansion of the relative size of the middle class. The low cost-effectiveness of educational investment in the Philippines has resulted not only in considerable waste, but also, albeit unintentionally, in a slow pace of socio-economic growth.

The Philippine government has a commission charged with overseeing the scale of tertiary education. Instead of controlling growth in such a way as to match the practical need of the country's economy, it has allowed tertiary education to expand continuously despite widespread graduate unemployment and under-employment. For example, by 1981 the T-P ratio of the Philippines had reached 16:100. This ratio was already too high but it was allowed to rise still further to 18:100 by 1995.

There is no public data available on the values of the Philippine government relevant to the theme of the paper. However, it may be reasonably argued that if the Philippine government had assumed values similar to those adopted by the Singapore government, especially those of neo-Darwinism and communitarianism, it could conceivably have solved the problem of the over-supply of tertiary graduates long ago by giving priority to the overall interests of Philippine society.

It should be noted that exercising control over the scale of tertiary education, to keep it in balance with economic needs does not hinder educational expansion in the long run. On the contrary, it is more effective in helping educational expansion because it facilitates economic growth. In 1981, the T-P ratio of Singapore (8:100) was only half of that of the Philippines, however, Singapore's controlled approach reversed the difference within a very short period of time: by 1995 its T-P ratio had increased to 32:100, which was 77 per cent higher than that of the Philippines.

A Comparison with Indonesia

Between 1920 and 1939, students who were enrolled for higher education in Indonesia totalled 3,242 (Wardiman Djojonegoro quoted from Akhmad 1998:8). After independence, especially during the Suharto regime, higher education developed much faster. By 1997, there were 902,200 students studying in 77 public universities and a further 1,448,77 students enrolled in 1,293 private universities (*Statistical Yearbook of Indonesia 1997*:110).

The quantitative change was impressive, however, according to an unpublished 1998 Japanese government report, 70 per cent of the university students in Indonesia studied humanities and social sciences (Foreign Ministry of Japan 1998: 3). This percentage does not match economic demand for humanities graduates. The resources spent on the over-production of graduates in the humanities could have been used to generate more high-quality engineering and natural science students or to improve the quality of education in general for the overall benefit of the country's economy. The same resources could also have been utilised as direct and productive economic investments. In Singapore, only 9 per cent of university and polytechnic students studied humanities and the social sciences in 1995. The values of Neo-Darwinism and Golden-Means-seeking rationalism forced the Singapore government to reduce the percentage of humanities and social sciences students and to encourage more students to study engineering, the natural sciences and business. The Singapore government's primary concern was to make the best use of the country's limited resources and to promote industrialisation as rapidly as possible. The Indonesian government under Suharto clearly had different priorities.

The enormous overproduction of humanity and social science students in Indonesia has generated an immense problem of graduate unemployment and underemployment. There are no statistics available in the public arena to show how many university graduates are under-employed but there is sufficient data to show the extent of graduate unemployment. In 1997 about 10 per cent of those who had received higher education were unemployed (Table IV), a figure 4.5 times higher than that for Singapore.

TABLE IV
Indonesia: Unemployment by Educational Qualification, 1997

Educational Qualification	Persons Working	Unemployed	Unemployment Rate
No Schooling	8,468,532	28,810	0.3%
Some Primary Schooling	18,798,827	208,723	1%
Primary School	30,842,824	812,618	3%
Junior High (general)	10,159,271	653,982	6%
Junior High (vocational)	1,429,235	86,758	6%
Senior High (general)	8,576,385	1,404,490	16%
Senior High (vocational)	5,512,545	701,692	13%
Diploma I/II	517,458	37,676	7%
Diploma III	970,063	104,054	11%
University	1,774,616	236,352	13%

Source: Reconstructed from Statistical Yearbook of Indonesia, 1997, p.60.

The waste of funds on the overproduction of humanity and social science students and the resultant opportunity costs has also contributed to a severe constraint of university funding. Most lecturers in Indonesia need a second job to sustain their living standards and thus their energy for improving teaching quality and research is severely taxed

Table V indicates that the time taken by Indonesian students to obtain a bachelor's degree is over five years on the average; a full year longer than the time taken by Singaporean students.

TABLE V
Average Time of Completion in Public Institutions of Higher Learning, 1994 (in Years)

Type of Course	Diploma	Bachelor
Engineering	3.4	5.7
Math, Physics and Biological Science	3.7	5.5
Agriculture	2.9	5.8
Health	2.6	4.3
Social Science	3.4	5.4

* The diploma programs are of two types—two and three years respectively; a bachelor's degree is expected to take four to four and a half years.
Source: Bambang Soehendro, *Kerangka Pengembangan Pendidikan Jangka Panjang, 1996-2005*, Depdikbud, Ditjen Dikti quoted from Akhmad (1998: Appendix V).

As in the case of the Philippines, there is no data available in the public domain identifying the specific values of successive Indonesian governments responsible for these educational outcomes. However, it may also be argued that these educational problems could have been avoided if the Indonesian governments had assumed values similar to those of the Singapore government.

Conclusion

Since 1959 the Singapore government has developed a unique set of values which have had a profound effect on the education system and its capacity to serve the nation's economic needs. They have generated high levels of quality and ensured a high market return for tertiary level studies in approved fields such as the physical sciences, engineering and commerce. One obvious measure of the success of the policy has been the rapid increase in the country's wealth as demonstrated by the rapid growth of a prosperous middle class and a material standard of living comparable with that found in the richest countries in the world. By contrast, the education systems in both the Philippines and Indonesia produce large numbers of graduates, especially graduates in the humanities and social sciences, who cannot be adequately absorbed by the economy of these two countries. As a consequence many graduates are either unemployed or under-employed. This outcome constitutes a serious and continuing waste of economic resources.

This study does not presume that the Singapore government has a set of perfect values or that it has developed the perfect education system. The values of the Singapore government have long been highly controversial and a subject of ongoing debate both within Singapore and in the wider community at large (for critical views, see Dupont 1996; Lingle 1998). Singapore's education system is also not without its problems, one of which is its allegedly low capacity to cultivate creativity and entrepreneurship (Chang 1998). In the moral sense, the values of the Singapore government are in no way inherently superior to those of the Indonesian or Philippine governments but in dealing with practical contingencies, the Singaporean model might well provide an example for both its near neighbours to consider adopting if they wish to overcome the current educational dysfunctionality in both states.

NOTES

1. There are other indicators that can be used to measure educational achievements and education-related socio-economic development as well, for

example, educational contributions to social cohesiveness, social order, civil society, and the sense of individuals' fulfillment and happiness. However, it is beyond the scope of the paper to cover them.

2. It is necessary to point out that Parsons' perception that in any society, culture and values are located at the top of its cybernetic system of control is untenable. Actually, culture and values are not givens; they are always constructed under specific historical conditions by certain social forces through symbolic interaction. Hence, their presumed 'top' status cannot be justified.

3. Openings for managerial and professional positions result from two major sources: (1) retirement of existing managers and professionals, and (2) an increase in the demand for managers and professionals due to economic development. This second source can be roughly indexed with the yearly expansion of the proportion of managerial and professional personnel in a society. Because the rate of retirement is low and the increase in the demand for managers and professional tends to be moderate even under circumstances of fast economic growth, only a low *referential supply demand ratio* can help avoid the problem of graduate unemployment or underemployment. Practically, therefore, the number of students studying in higher learning institutions each year has to be far smaller than the number of the managerial and professional personnel in the national labour force in each corresponding year in order to prevent overproduction of university graduates from the point of view of economic rationalism. Theoretically, the optimal supply-demand ratio in a pure economic sense depends on the variation of the above two major constraints that define the new openings of managerial and professional positions; practically, it is almost certain that any ratio that is bigger than 1:1 is a deviation from the optimal level.

REFERENCES

AINSWORTH-DARNELL, JAMES W. AND DOUGLAS B DOWNEY. 1998. 'Assessing Racial/Ethnic Differences in School Performance', *American Sociological Review* 63: 537-553.

AKHMAD, BAYHAQI. 1998. 'The Financing of University of Indonesia', unpublished thesis for the degree of Master in Public Policy, National University of Singapore.

BERNSTEIN, BASIL. 1961. 'Social Class and Linguistic Development: A Theory of Social Learning.' in A.H.Halsey, Jean Floud and C.Arnold Anderson (Eds.),*Education, Economy and Society*. New York: Free Press, pp.434-455.

_____, 1990. *The Structuring of Pedagogic discourse: Class, Codes and Control*, Vol. 4. London: Routledge.

BOURDIEU, PIERRE. 1977. 'Cultural Reproduction and Social Reproduction', in Jerome Karabel and A. Halsey (eds.), *Power and Ideology in Education*. New York: Oxford University Press.

BOURDIEU, PIERRE AND JEAN-CLAUDE PASSERON. 1990. *Reproduction in Education, Society and Culture*. London: Sage.

BOWLES, SAMUEL. 1977. 'Unequal Education and the Reproduction of the Social Division of Labor', in Jerome Karabel and A.H. Halsey (eds.) *Power and Ideology in Education*. New York: Oxford University Press.

BOWLES, SAMUEL AND HERBERT GINTIS. 1976. *Schooling in Capitalist America: Education and the Contradictions of Economic Life*. New York: Basic Books.

CHANG, JOHANNES HAN-YIN. 1997. 'Culture, State, and Economic Development.'. Unpublished paper. presented at ASEAN Inter-University Seminars. Pekanbaru, Indonesia: 1997.

_____, 1998. 'The Functions and Limitations of Education in Singapore', *Commentary* 15: 22-28.

CHUA, BENG-HUAT. 1995. *Communitarian Ideology and Democracy in Singapore*. London: Routledge.

COLLINS, RANDALL. 1979. *The Credential Society*. New York: Academic Press.

DORE, RONALD P.1976. *The Diploma Disease*. London: Allen and Unwin.

DUPONT, A. 1996. 'Is There an 'Asian Way>' *Survival* 38(2):13-33.

DURKHEIM, EMILE. 1956. *Education and Sociology*. New York: Free Press

ERICKSON, FREDERICK. 1987. 'Transformation and School Success: The Politics and Culture of Educational Achievement', *Anthropology and Education Quarterly* 18:335-57.

FISCHER, CLAUDE S., Michael Hout, Martin Sanchez Jankowski, Samuel R. Lucas, Ann Swidler and Kim Voss. 1996. *Inequality by Design: Cracking the Bell Curve Myth*. Princeton, N.J.: Princeton University Press.

FOREIGN MINISTRY OF JAPAN. 1998. *Education in Southeast Asia: For Discussion*, distributed to the 1998 Southeast Asian group for an educational trip to Japan organised by the ASEAN University Networks and the Keizai Koho Centre, unpublished.

GOYETTE, KIMBERLY AND YU XIE. 1999. 'Educational Expectations of Asian American Youths: Determinants and Ethnic Differences'. *Sociology of Education*, 72(1): 22-36.

HAN, FOOK KWANG, WARREN FERNANDEZ AND SUMIKO TAN. 1998. *Lee Kuan Yew: The Man and His Ideas*. Singapore: Times Editions.

KAHL, JOSEPH. 1953. 'Educational and Occupational Aspirations of "Common Man" Boys', *Harvard Educational Review*, Vol. 23, No. 3.

LIANHE ZAOBAO (ed.) 1993. *Lee Kuan Yew: A Collection of Forty Years of Political Essays*. Singapore: Federal.

LENSKI, GERHARD. 1984. *Power and Privilege*. Chapel Hill: University of North Carolina Press.

LIANHE ZAOBAO, November 21, 1996.

LINGLE, CHRISTOPHER. 1998. *The Rise and Decline of the Asian Century: False Starts on the Path to the Global Millennium*. Hong Kong: Asia 2000 Ltd.

LOW, LINDA, MUN HENG TOH AND TECK WONG SOON. 1991. *Economics of Education and Manpower Development: Issues and Policies in Singapore*. Singapore: McGraw-Hill.

MINISTRY OF NATIONAL DEVELOPMENT, SINGAPORE AND INSTITUTE OF ECONOMIC RESEARCH, UNIVERSITY OF SINGAPORE. 1966. *Singapore Sample Household Survey*.

OGBU, JOHN U. 1991. 'Low Performance as an Adaptation: The Case of Blacks in Stockton, California', pp.249-285 in M.A. Gibson and J.U.Ogbu.(eds.), *Minority Status and Schooling* New York: Grand Publishing

PARSONS, TALCOTT. 1959. 'The School Class as a Social System: Some of Its Functions in American Society', *Harvard Educational Review* 29: 297-318.

_____, 1966. *Societies*. Englewood Cliffs, N.J.: Prentice-Hall.

Philippine Statistical Yearbook, 1978, 1983, 1994, 1997, 1998.

Statistical Yearbook of Indonesia, 1997.

Straits Times, May 21, 1997.

TREMEWAN, CHRIS. *The Political Economy of Social Control in Singapore*. New York: St. Martin's Press.

TURNER, RALPH H. 1961. 'Sponsored and Contest Mobility and the School System', pp.121-139 in *Education, Economy and Society, op.cit.*

Yearbook of Statistics, Singapore, 1967, 1981/1982, 1990, 1994, 1996, 1997.