

APPENDIX A

TALENT FOR THE FUTURE

by
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Our performance for the first half of 1983 has been more than fair with 5½ per cent growth. If the American recovery continues, we may achieve real growth for 1983 of 6 to 7 per cent.

However, several sectors have suffered: Manufacturing down 8 per cent; external trade down 2 per cent; cargo handled down 1 per cent; tourism down 2 per cent.

We made up by boosting construction up 31 per cent, and banking and financial services up 18 per cent. So on our 18th National Day we have cause for relief and congratulations.

How has this been achieved? It is the cumulative result, since 1959, of nearly 24 years of hard work, savings for investments, and consistent policies of rewards based on merit and performance, since 1959.

For the first four to six years, we settled urgent basic problems of unrest and insecurity caused by communist subversion, demonstrations, labour strikes, walkouts, sit-ins, go-slows, riots and general political agitation.

Then in 1965, when we had about established confidence that we could get on top of the communist problems, we suffered a blow to our prospects for long-term economic viability by separation from Malaysia. Then came the withdrawal of the British bases announced in 1968.

It took another five years, to 1970, for us to establish our viability. We established it by restoring discipline and efficiency in society.

Strikes went down, social and work discipline prevailed, and the Employment Act changed the rules governing relations between management and workers. Then investments and trade grew steadily.

We maximized our assets. We had to keep morale up. In November 1964, in the depression after our communal riots, we had campaigns against beggars, stray dogs, and cattle. We had become a scruffy town.

In October 1968, we had our first Keep Singapore Clean campaign. In October 1969, we had a campaign to Keep Singapore Mosquito-Free. Our first tree-planting campaign was in June 1963. It stalled. There were too many political crises. We resumed it in 1971.

We added on the anti-litter campaign to make Singapore clean and green. By the middle 1970s, we moved on to courtesy campaigns. The first Productivity Campaign was in 1975. We were not ready for it.

Five years later, in the 1980s, we relaunched a movement for increased productivity. We were better prepared for it to respond to better education, better training, better work attitudes and good human relations.

The results of better education and the drive for higher productivity are going to take 10 to 20 years before their full benefits are felt. Those campaigns which can give simple, quick returns have all been done.

The swiftest gains were when we established confidence in our stability, discipline, efficiency and security. Now comes the more difficult, long haul to do better: Better education, better performance, zero defects, better productivity.

Eventually, we shall reach our maximum potential. And that maximum is determined by our inherent capabilities, the kind of people we are, as individuals, and as a society.

From our 1982 school examinations, we can improve on our present talent pyramid and project that our population will consist of the very able, about 0.1 per cent of each year's school intake who become scholars; the able: 7 per cent tertiary educated, up from 2 per cent in 1980; the above-average: 9 per cent upper secondary, up from 5 per cent; the average: 52 per cent secondary, up from 13 per cent; the below-average: 20 per cent primary, down from 37 per cent; the slow learners: 12 per cent, down from 44 per cent.

Each is capable of learning to achieve her respective potential and must be helped to do so.

From the 1980 Census, we know that the better educated the people are, the less children they have. They can see the advantages of a small family. They know the burden of bringing up a large family.

And when a well-educated wife with high income is not working, the disruption to the wife's career and loss in joint family income is serious. This is having serious consequences, but more on it later.

A person's performance depends on nature and nurture. There is increasing evidence that nature, or what is inherited, is the greater determinant of a person's performance than nurture (or education and environment).

Researches on identical twins who were given away at birth to different families of different social, economic classes show that their performance is very close although their environments are different.

One such research, for over a decade, is by Prof Thomas Bouchard of the University of Minnesota, which has located identical twins wherever they can be found at whatever age — 20 plus, 30 plus, 40 plus.

They test their vocabulary, their habits, their likes and dislikes, of colours, food, friends. The conclusion the researchers draw is that 80 per cent is nature, or inherited, and 20 per cent the differences from different environment and upbringing.

Even though only 20 per cent of the performance of a human being is due to nurture, much more than 20 per cent of the performance of human beings as a group depends on training and organisation.

Compare the East Germans and the West Germans. Their genetic make-up is the same but the performance is vastly different. So with the North and South Koreans. These differences arise from differences in the social, administrative and economic system.

So it is crucial to help every Singaporean, whatever his inherited characteristics, to achieve his best through improved training and education.

The 1980 Census disclosed that whilst we have brought down the birth rate, we have reduced it most unequally. The better educated the woman is, the less children she has.

Ironically, she has the greater resources to provide her children with a better environment, nurturing and care. A woman below age 40 with no educational qualifications, on average, produces about three children although she has limited income and few resources to give her children the extra attention, help and stimulation required.

With primary education, she produces about two on average; with secondary education, $1\frac{1}{4}$; with upper secondary education, $1\frac{1}{3}$; with tertiary education, $1\frac{1}{4}$.

I was so disturbed by these figures that I refused to use them as the basis for the future. They show how many children for each ever-married women aged 10 to 39. I asked for figures of the older women aged 35 to 39. They have slightly more children.

Adjusted for those women in the group who remain unmarried, the mean figures are:

No education	— 3.5
Primary	— 2.7
Secondary	— 1.9
Upper Secondary	— 2.0
Tertiary	— 1.65

If the younger women, aged 10 to 34, turn out to have the same pattern as the older, aged 35 to 39, the position is not so disastrous, though still bad. Those without education still have more than double the children of those with tertiary or secondary education who have not reproduced themselves.

I shall base my arguments tonight on these less disturbing figures. I suspect the actual results will be that the younger women will have slightly more children than at present, but less than the older women.

Before 1960, most girls had no education. The law permitted and people practised polygamy.

We have altered our pattern of procreation producing the next generation, first by educating everyone, second by giving women equal employment opportunities, and third by establishing monogamy since 1960.

We gave universal education to the first generation in the early 1960s. In the 1960s and 70s, we reaped a big crop of able boys and girls. They came from bright parents, many of whom were never educated.

In their parents' generation, the able and not-so-able both had large families. This is a once-ever bumper crop which is not likely to be repeated. For once this generation of children from uneducated parents have received their education in the late 1960s and 70s, and the bright ones make it to the top, to tertiary levels, they will have

less than two children per ever-married woman. They will not have large families like their parents.

The results are going to be felt in Singapore, not in one to two hundred years as in Europe, but in one generation, in 25 years.

Unlike Europe, we do not have a large rural community, where most farmers were uneducated, and so the uneducated but able parents had as many children as their less able but equally uneducated neighbours.

If we continue to reproduce ourselves in this lop-sided way, we will be unable to maintain our present standards. Levels of competence will decline.

Our economy will falter, the administration will suffer, and the society will decline. For how can we avoid lowering performance when for every two graduates (with some exaggeration to make the point), in 25 years' time there will be one graduate, and for every two uneducated workers, there will be three? Worse, the coming society of computers and robotics needs more, not less, well-educated workers.

In all societies, the trend is for the better-educated people to have less children than the less-educated. But no other society has ever compressed this process into just over one generation, from the 1950s to the 1970s, and we have the first statistical evidence in the 1980 Census.

A minority of women, about 14 per cent of all ever-married women age 10 to 39, have four to seven children, and a smaller minority, about 0.4 per cent of all ever-married women age 10 to 39, have eight and more children.

Nearly all of them (97 per cent) have no secondary education. In future, such women will be better educated and will be urged to stop at two. Singapore does not have the space or the resources for such an explosive family expansion.

The government has concentrated on better health, education and housing to improve performance through better environment. Parents must be made to do their part in family nurturing which is only possible in small families.

From data collected by the Ministry of Education on the educational qualifications of the parents of Primary 1 students for 1981-83, we discover that women marry their educational equals or their educational superiors.

In other words, the Singaporean male marries his educational equal or his inferior. Seldom does he marry his educational superior.

The result is a considerable loss in well-educated women remaining unmarried at 40 plus and not represented in the next generation: 13½ per cent of all tertiary-educated women, 8½ per cent of all upper secondary-educated women, and 10½ per cent of all secondary-educated women.

It could be male ignorance and prejudice which lead to his preference of a wife less educated than himself. Or it may be that an educated woman shies away from a husband with less educated ways. Whatever it is, this is a new problem.

In the old days, matchmakers settled these matters. Now we are caught betwixt and between. We have gone for Western-style individual free choice. At the same time, the Singapore male is chauvinist enough not to like marrying women better educated than himself.

Most men hope that their children will be as bright as themselves. After all, they carry their father's surname. Many men are ignorant of the fact that biologically and genetically, every mother and father contributes equally to the child's physical and mental attributes.

Meantime, to make up for this loss of replacement at the top of the educational pyramid, we must increase recruitment of top talent from outside. It is slow and difficult.

Our projected losses through graduates not reproducing themselves under present patterns will be over 20 per cent (based on the mean of 1.65 children born alive per ever-married woman aged 35 to 39) of about 2,000 graduates per year or about 400 graduates.

Our recruitment at present is less than 80 graduates per annum, and unlikely ever to exceed 200 however much we try.

Our most valuable asset is in the ability of our people. Yet we are frittering away this asset through the unintended consequences of changes in our education policy and equal career opportunities for women. This has affected their traditional role as mothers.

It is too late for us to reverse our policies and have our women go back to their primary role as mothers, the creators and protectors of the next generation. Our women will not stand for it. And anyway, they have already become too important a factor in the economy.

Therefore, we must further amend our policies, and try to reshape our demographic configuration so that our better-educated women will have more children to be adequately represented in the next generation.

I am sanguine that we can succeed in getting the few with families of four to 10 or more down to two, as the majority have done. I am not sure we can persuade those with families of one to have two. They need incentives, not disincentives.

Incentives for more children have not worked in Europe. Anyway, it is no offence not to marry and to have any children at all. All the same, we must think deep and long on the profound changes we have unwittingly set off.

In some way or other, we must ensure that the next generation will not be too depleted of the talented. Government policies have improved the part of nurture in performance. Government policies cannot improve the part nature makes to performance.

This only our young men and women can decide upon. All the government can do is to help them and lighten their responsibilities in various ways.

APPENDIX A.1 Comparative Education Levels of Spouses

Education level	Men		Women	
	% whose wives have LOWER education	% whose wives have HIGHER education	% whose husbands have LOWER education	% whose husbands have HIGHER education
No schooling	0	47.9	0	88.4
Primary	20.6	16.7	2.5	41.6
Secondary	44.3	3.3	18.0	19.5
Upper secondary	75.0	1.7	31.4	24.3
Tertiary	69.1	0	16.2	0
Total	37.6	9.5	9.5	37.6

Notes: Definitions of categories used in chart.

No Qualification: Never attended school or did not pass PSLE.

Primary: Passed PSLE.

Secondary: Passed at least one 'O' level or equivalent.

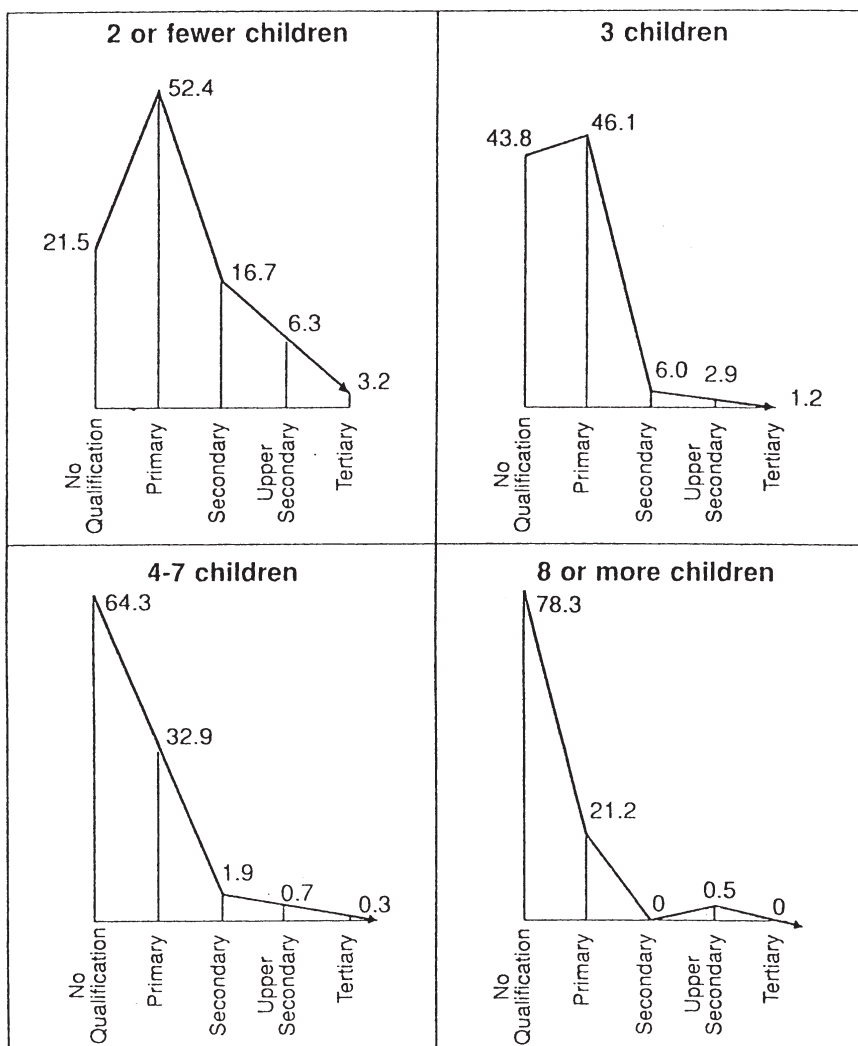
Upper Secondary: Passed at least one 'A' level or equivalent examination in Poly or Ngee Ann.

Tertiary: Passed university or equivalent qualification.

- *These definitions are in accordance with those used in the 1980 Census.*

APPENDIX A.1

Number of Children of Women (Aged below 40) by Education



Notes: Definitions of categories used in charts.

No Qualification: Never attended school or did not pass PSLE.

Primary: Passed PSLE.

Secondary: Passed at least one 'O' level or equivalent.

Upper Secondary: Passed at least one 'A' level or equivalent examination in Poly or Ngee Ann.

Tertiary: Passed university or equivalent qualification.

- These definitions are in accordance with those used in the 1980 Census.