

2002

Education reform : an economic perspective

Lok Sang HO
lsho@ln.edu.hk

Follow this and additional works at: <http://commons.ln.edu.hk/cppswp>



Part of the [Education Policy Commons](#)

Recommended Citation

Ho, L. S. (2002). Education reform: An economic perspective (CPPS Working Paper Series No.129). Retrieved from Lingnan University website: <http://commons.ln.edu.hk/cppswp/61/>

This Paper Series is brought to you for free and open access by the Centre for Public Policy Studies 公共政策研究中心 at Digital Commons @ Lingnan University. It has been accepted for inclusion in Centre for Public Policy Studies : CPPS Working Paper Series by an authorized administrator of Digital Commons @ Lingnan University.



Working Paper Series

Centre for Public Policy Studies

No. 129 (13/02) CPPS

Education Reform: An Economic Perspective

Professor Lok Sang Ho

Lingnan University
Hong Kong

Education Reform: An Economic Perspective

Professor Lok Sang Ho

March 2002

© Lok Sang Ho

Centre for Public Policy Studies
Lingnan University
Tuen Mun
Hong Kong
Tel: (852) 2616 7432
Fax: (852) 2591 0690
Email: cpps@LN.edu.hk
<http://www.LN.edu.hk/cpps/>

CAPS and CPPS Working Papers are circulated to invite discussion and critical comment. Opinions expressed in them are the author's and should not be taken as representing the opinions of the Centres or Lingnan University. These papers may be freely circulated but they are not to be quoted without the written permission of the author. Please address comments and suggestions to the author.

Education Reform: An Economic Perspective

Lok Sang Ho

Director

Centre for Public Policy Studies

Lingnan University

1. Introduction

Education is a productive activity. The education process transforms inputs into output and in the process creates value. The outputs are *both* valued for their own sake *and* as an intermediate input in commercial production. So education should produce “value added,” and efficient education should produce value added in a cost-effective fashion—with a minimum of wastage and a minimum of negative side effects.

In this paper I would like to do the following:

- I will outline the nature of the “value-added” in education;
- I will describe the process of production and discuss what conditions the efficiency or lack of efficiency of education;
- I will describe the different sources of input and discuss the role of government, the role of teachers, the role of parents, and the role of the social and economic environment;
- I will discuss three aspects of the institutions that affect the efficiency of education production: examinations, autonomy, and upward mobility opportunities.

2. The Nature of Value-Added in Education:

Education may benefit the one who receives the education as well as others. These benefits are achieved through the nurturing of certain skills and the cultivation of certain attitudes. There are at least six aspects of value-added that may be derived from the education process:

- Self-control skills, implying the ability to focus the mind on a task, the ability to control one’s emotions, and the awareness of the need for balance;
- Reflective skills;

- Social skills;
- Better mastery of skills in communication and reasoning;
- Better orientation to the world in which students live. This means getting more knowledge about the world and the society in which students live;
- Vocational or professional knowledge and skills.

Typically, schools do not offer “subjects” in the first three aspects, but there can be plenty of opportunities to acquire such skills in the school. Actually all kinds of schoolwork require a degree of self-control so that they benefit the student as he unwittingly develops such skills. Actually he probably benefits more through acquiring such skills than by acquiring the knowledge or the skills explicitly taught. Unfortunately students as well as teachers may not be aware of the importance of this dimension of learning. Being able to sit quietly to attend a talk, read a book, work on a project, prepare for a test, train for a tournament...are all part of self-discipline training. Learning to face the results of a test regardless of how good or how bad it is, and learning to avoid mistakes made in the past provide important self-reflective opportunities. Learning to relate to classmates who may not always be friendly, learning to observe school rules, and learning to deal with one’s and others’ negative emotions are again all part of the training for better social skills. Because educators may not be aware of the importance of this dimension of learning, unfortunately, students may not get the guidance they need at the time the guidance is needed.

Reading, writing, and speaking are basic communication skills and are of course fundamental to learning at a higher level. It is no accident that the 3Rs are regarded so important everywhere and at all times.

Then there is learning about our world and about our society. We need to bear in mind that subjects that fall within this scope are intended to better orient the student to the world. So the student is still at the center of the stage, not the subjects under study.

Vocational and career-related skills are of course also of great value. But to acquire such skills and to benefit from them students need to have self-discipline, emotional balance, and good communication skills. In an important sense, then, the training of such skills at school is secondary to the self-management skills, communication skills, and social skills which are listed first in the above checklist for value-added.

3. The Education Production Process

We can see the education process as involving two stages.

The first is:

- Imitation and application. Through imitation the student acquires the *building blocks* necessary for performing certain tasks. With these building blocks ready, the student will then be prepared to apply them on new tasks and even to improvise creatively.

The second is:

- Going through an experience and learning what is good and what is bad through *reflecting* on the results of good and bad decisions.

These two sets of learning processes are of course not mutually exclusive. The task of educators is (i) to provide the most efficient imitation models so that students can acquire “good building blocks” efficiently; (ii) to provide plenty of opportunities for students to use their newly acquired building blocks creatively; (iii) to provide a more-or-less controlled environment so that students can make mistakes without hurting themselves excessively and can learn from the mistakes.

If the educational experience is to be effective and efficient, we need to have teachers who can provide good examples for imitation, give proper guidance so students can learn from their mistakes, empower students so that they are keen on imitating, are ready to learn from their mistakes, and are motivated to work creatively. Teachers must also be allowed and encouraged to exercise their ingenuity. This way they will bring out the best of professionalism in carrying out their duties.¹

Because of the importance of teachers as role models and as “counselors” *all* teachers must learn the proper ways of handling emotional problems. Teachers also need to know that *drilling* is not such an awful thing to be shunned or minimized.² Students need to be drilled adequately in such things as language and mathematics in order to acquire the necessary building blocks so they can handle problems as they

¹ A major grievance among teachers in Hong Kong over the past few years is the proliferation of initiatives made by bureaucrats and imposed upon teachers. See for example Fung(2001).

² In recent years in Hong Kong there is an ongoing campaign against the “drilling culture” and against examinations among educators, which is certainly misplaced.

grow up and can “learn how to learn.” It is unfortunate that while “Learning to Learn” is the title of a report put out by the Curriculum Development Council in Hong Kong in 2000, when it comes to “How to Act—Effective Learning, Teaching, and Assessment” the document explicitly and mechanically asks teachers not to “pose questions to which there is only one answer” and not to “force students to do excessive mechanical drills.”³ Clearly mathematical problems and even grammatical rules may dictate that there is only one answer in many cases. Clearly anything “excessive” is to be avoided. So what is the point of asking teachers not to drill excessively? The likely and unfortunate result is that the document will give the wrong message that drills are bad and to be avoided by teachers and detested by students. Students will then fail to acquire the necessary building blocks to learn and to think creatively. The trick is not to kill the interest while students are asked to do the many necessary exercises for acquiring the skills.

4. Inputs in the Education Process and Motivation

What are the inputs in the education process? Certainly physical investments are involved: there are school premises, teaching aids and facilities, and all kinds of training equipment. But more important are the inputs by way of “brain power”—teachers’ brainpower and students’ brainpower. Still more important are the institutions that shape the use and development of such brainpower. On a broader consideration, the social and the economic environments also have direct impacts on the effectiveness of education.

Quality Teachers, Quality Textbooks, and Quality Students

Quality teachers and quality textbooks are equally important. However, they are not quite the same because teachers are human beings while textbooks are a commodity. It is difficult to avoid hard feelings and protest if the government imposes mandatory tests on teachers in an attempt to banish those teachers found not up to the mark. With regard to textbooks it is much easier. Consumers’ rights for protection require that we should be able to take faulty textbooks out of use. Textbooks should certainly be examined for their quality and should be disallowed if they fail the quality test.

³ See Chapter Four in *Learning to Learn—the Way Forward in Curriculum Development*,” Consultation Document November 2000.

While imposing “benchmark” tests for teachers is always unpopular with teachers⁴ quality assurance for teachers is as important as ever. In Hong Kong there was a time when students who failed to gain admission into already vastly expanded universities went to teachers’ colleges as a last resort. Many of them eventually have become the teachers of today. The quality of this crop of teachers is mixed. Because of the paramount importance of languages asking language teachers to take the language proficiency tests and requiring them to pass the tests is clearly in the interest of both students and the general public.

Today we should realize the importance of attracting truly high caliber students into the ranks of teachers. I would recommend that the colleges of education, rather than offering undergraduate education degree programs, admit only students with a good honors degree as their students and enroll them in postgraduate diploma or master programs. Another key element in education reform is to unleash the vast potential of excellent teachers by giving them greater autonomy in teaching and in shaping the school curriculum. This will not only allow the existing teachers to do a better job, but will also enhance the professional status of teachers and over the long run will help attract quality people into the profession.

Professional autonomy is widely regarded as important, not only as a symbol of professional status but also necessary in order to give teachers sufficient freedom to use their ingenuity in exploring more effective ways of teaching. Just as the government should not dictate how firms produce their products, so teachers and schools must not be told by the government how they should teach.

The Education Department should set the minimum language and mathematics achievements expected of students at each level and see to it that quality teachers and quality textbooks are available to all schools. Then it should leave schools and teachers alone unless they are found to be incompetent⁵. With greater autonomy teachers can get greater satisfaction exploring the most effective ways of teaching their students.

Just as we need quality teachers and quality textbooks to do their parts in the education process, so also we need students to put in their share of effort, if education

⁴ The Hong Kong Professional Teachers’ Union organized several big rallies in protest against the government’s introduction of benchmark language tests for teachers.

⁵ If schools and teachers are found incompetent they should not be punished through cutting support. Instead they should be helped to improve. Teachers found to be truly inadequate should be discharged. But resources should not be cut for the schools as this will only unfairly penalize the students.

is to bring good results. To do this we need a set of institutions that can motivate them and preserve their self-image.

Examinations, Self-discipline, and Reflective Skills

In order for teachers to maximize their impact on students, we need a set of institutions that clearly recognize that learning self-discipline and reflective skills are even more basic and more important than getting good marks in examinations. In addition, we also need examinations to serve as an instrument to help students reflect upon their own learning process. In this regard, President George Bush of the United States is most explicit. In a recent radio address he said: “We need a new way of thinking. We must go back to the fundamentals of early reading and regular testing, local control, and accountability for the results, clear incentives for excellence, and clear consequences for failure...”(Office of the Press Secretary, January 27, 2001) In the Executive Summary of the Education Reform Blueprint (<http://www.whitehouse.gov/news/reports/no-child-lef-behind.html>) it is thus stated:

“Annual reading and math assessments will provide parents with the information they need to know how well their child is doing in school, and how well the school is educating their child. Further, annual data is a vital diagnostic tool for schools to achieve continuous improvement. With adequate time for planning and implementation, each state may select and design assessments of their choosing. In addition, a sample of students in each state will be assessed annually with the National Assessment of Educational Progress(NAEP) 4th and 8th grade assessment in reading and math.”

It is common for people to discredit examinations as putting too much pressure on students. Actually examinations are a great tool and can benefit the education process tremendously, so long as they are administered fairly, and if examination results are used appropriately. If examinations produce too much pressure, it is only because we misuse the results of examinations, and because they are poorly designed and poorly administered.

Examinations have many potential benefits:

- Examinations provide an opportunity for students to learn how well they have mastered the materials taught in class. They are an excellent

reflective tool and enable students to find out their study lapses.

- Examinations provide a scale of achievement for students so that they can see how their effort translates into examination grades. This provides more fun much like the points in a video game.
- Examination results will sometimes disappoint. During such times, they provide a relatively harmless opportunity for dealing with disappointments, which are bound to recur from time to time through life.
- Students have to maintain a degree of self-discipline in order to do well in examinations. Examinations help nurture this important quality among students.

Of course, examinations can be misused. In Hong Kong, for over a decade examination results from a widely discredited aptitude test were used to classify Grade 6 graduates into five different bands and thus assign them into different schools. This practice has produced devastating effects on students. Because being assigned to a “band 5”(and other lower bands as well) school is widely perceived as a disgrace and band 5 students are not expected to become good students, students put into such schools become demoralized. Students are also under great pressure to drill to avoid being put into such schools. Given that the examinations are themselves poorly designed and de-emphasize traditional language and mathematical skills students’ incentive to learn becomes distorted away from these more basic objectives. Rather than learning a positive attitude about self-reflection and about organizing their study and other activities, students have developed an anger against authority, a hatred for examinations, and a distorted image about success and failure.

If instead of 5 bands, there are only two bands, the top 20 per cent being given the opportunity to select their own schools and the rest being randomly assigned to their nearest schools, the pressure from examinations will be considerably reduced. Only then can a positive attitude about examination and competition be developed. If a test on the traditional 3Rs is to replace the aptitude test students’ basic skills will also be much improved.

Hope Should Always Be Kept Alive

In order to maintain high morale among students it is important to give them an achievable target and to avoid treating any of them as bottom of the heap. Dividing up students of different abilities within a school will give each student a reachable goal to achieve. Students in Class D can strive to uplift themselves to Class C.

Students in Class C can strive to uplift themselves to Class B, and so on. For primary school leavers, not being placed in the top 20 per cent is not the end of the world, while those who are in the top 20 per cent enjoy the advantage of being able to move onto their preferred secondary schools. In contrast, if students at the end of their primary school are assigned to schools of five different bands, it is much more difficult to move from Band 5 to Band 4 or from Band 4 to Band 3. Moreover, because teachers in Band 5 schools face difficult students year in year out, they are more liable to the burn-out syndrome. As a result, it is that much more difficult for them to help students effectively, particularly when they have to spend much of their time maintaining order in class before they can teach.

Under the newly introduced reforms in Hong Kong, a three-band system will replace the five-band system. But this will not solve the problem. The bottom band is still the bottom band, with the associated stigma, disgrace, and demoralization. For those who are assigned to Band 3 schools, no matter how hard they try, their school remain a Band 3 school. Hard work does not beget recognition, while the teachers of such schools have to bear with teaching a difficult class year in year out. Meanwhile, the teachers of Band 1 schools have an easy job of teaching superior students. Students in primary schools and their parents will continue to face tremendous pressures in seeking a “good” placement in secondary schools.

The Social and Economic Environment

Schools cannot teach one thing while society teaches the opposite. In order to be effective, schools have to be congruent with the society—its values, habits, traditions, and economic development. No one can teach students to be honest and law-abiding if the society and the government are corrupt and bypass the law. No teacher can ask students not to steal if they cannot find jobs and there is no communal support for the unemployed.

5. The Role of Government

I can see three roles the government can play in contributing to a sound education system. The first clearly is to provide sufficient resources to support education. The second is to establish a curriculum in the light of the broader interest of the society. The third is to ensure quality by setting and maintaining standards. The fourth is to ensure that there is a level playing field in education, so that there is a healthy dose of competition among students, among teachers, and among schools.

Funding, salaries of teaching staff, and tuition fees

While it is widely recognized that education brings very high social rates of returns (Psacharopoulos, 1994) parents and students cannot be expected to pay fees commensurate with the cost of education. There are important spillover effects, and equity and distributional considerations dictate that governments have to provide the resources to allow every school age child to be adequately educated.

Many countries today provide compulsory education to school age children, and Hong Kong provides nine years of free, compulsory education to its school age children. Beyond those nine years the government continues to provide heavy subsidies, and a good question is how much of the public funds should be allocated to each of these levels of education.

Economists' standard answer is to provide funds till the "optimal" level. For basic education, satisfying the quantity target may not be so difficult. However, achieving an appropriate quality target is at least as important. In principle, nine years of compulsory education can be provided at higher cost or lower cost, depending on what kind of quality we want. Lazear(2000) found that an excessively large class will have deleterious effects on education quality, but noted that well-behaved children can tolerate larger classes without too much adverse effects. This result, however, need not mean that less resources should be allocated to well-behaved children. Resource utilization is multi-dimensional. Well-behaved children may need less "teacher-intensity" but may benefit from more "library intensity" and from more higher-level instruction. In principle, the government should study the pay-off from investing in each dimension and continue with the investment until the marginal benefit is equal to the marginal cost.

While this is easier said than done, the general principle is that different schools may well have different needs. The SAR Government had set aside a quality education fund of \$5 billion and schools were encouraged to submit funding applications. This is one approach. The advantage is that each school is encouraged to use its ingenuity and submit innovative proposals. The disadvantage is that assessing all the different proposals is really costly and—given the vast differences in the nature of these projects, monitoring the results is also quite difficult. Some schools may not have any big plans to sell but may have actual needs that are much more modest. For this reason, it may be desirable to allow schools to apply for

extra funding based on real needs of all kinds, rather than impressive projects.

Should universities charge different fees for different programmes and should the government fund different programmes differently? Clearly, programmes vary in cost. In Hong Kong, the variations in cost are considerably narrowed because professors in different disciplines are paid according to the same scale, in contrast to the practice in the United States. In general, the higher the pay, the bigger the returns to the human capital investment, and the higher quality will be the candidate that enters into a profession. In general, anyone who invests in graduate studies will compare the expected returns and risks with the opportunity cost of the graduate studies. How much we should pay a professor in a certain field depends on how high quality we want to achieve for that kind of professor, it being understood that for some fields the cost of marginal improvement in quality may be higher than that for other fields. It is well known that in finance, the opportunity cost of professors are high, so to keep high quality professors in universities will require higher salaries. The government of course can pay lower salaries, but over the long run it will have to put up with lower quality professors.

The same logic applies to the setting of tuition fees. If tuition fees are set higher, the rate of return to education becomes lower, so the attractiveness of the education falls, leading to less competition for the programme and a decline in the quality of potential admittees. So whether we want to set higher fees for a specific programme depends on what level of quality of students we want to attract to those programmes.

Ultimately, then, it is the comparison of the marginal benefits and marginal costs of increasing teachers' salaries and of increasing students' tuition fees that should determine the optimal level of salaries and tuition fees. Marginally increasing the salary levels (other things being equal) has the benefit of enhancing the quality of teachers in the long run. Marginally increasing tuition fees (other things being equal) has the cost of reducing the quality of students in the long run. The former has to compare with the marginal cost of the funds required in increasing salaries. The latter has to compare with the marginal benefit of the savings in public funds. It is possible to increase tuition fees to support an improvement in education quality. In that case, raising tuition fees produces a benefit in terms of higher quality. This gain in quality must be compared with the marginal cost of the increase in tuition fees.

Curriculum

The latest round of education reform in Hong Kong has recommended a school-based curriculum(Curriculum Development Council, 1999). It is right to give schools a bigger role in choosing a curriculum appropriate to their unique settings in the community. However, the government should set the basic requirements in the school curriculum, while allowing schools to add on things that they consider appropriate.

As discussed above, the overall curriculum should recognize the need to help students acquire both life skills and jobs skills⁶. The underlying and paramount consideration is that the student is always at the center of the stage. He/she needs to acquire the skills and particularly the attitude to live a happy, rewarding life. The school curriculum must include elements that create “mental goods” that can help build a positive attitude and assist the student to deal with “mental bads” so students can deal with disappointments, jealousy, hate, and anxiety.

Standards and the Education Ladder

The government has a key role in setting standards and in streamlining the education ladder. This is in order to reduce information cost and to enhance accountability, enhance the effectiveness of competition, and enhance efficiency in the production of the education output.

Both the education output and the main inputs in the education process—namely teachers and students--are heterogeneous. By setting and maintaining standards we can begin to monitor the changes in the performance of our students and the efficiency of the education system. By stipulating the minimum qualifications of teachers we can also be better assured that teachers are well trained and in the position to guide the students. By subjecting all proposed textbooks to a careful and a rigorous scrutiny, those that are substandard will be taken out of the market. Effective teaching and learning requires that students must be admitted and taught at a level that is commensurate with their ability and preparation. For this reason, it is most strange that Hong Kong has proposed to ban written examinations for students

⁶ The Curriculum Development Council document(HK, 1999) named seven core areas for learning in basic education. They are English, Chinese, Mathematics, Science, Technology Education, Personal Social and Humanities Education, Arts Education and Physical Education. As well CDC encouraged the enhancement of interpersonal skills and lifelong learning skills. Depending on how this is interpreted, one can argue that CDC’s proposal does include job skills and life skills.

seeking enrollment in secondary schools.

The design of the education ladder should strictly be a technical matter and should be tuned in to the developmental needs of children at different ages. Thus it should be carefully worked out by experts. The aim is to preserve and to cultivate the interest to learn.

The education ladder should also try to provide continuity and development. To administer a public examination at the end of Grade 6 and at the end of Grade 12 for the purposes of measuring the education output is fine. The prevailing system in Hong Kong for an examination at the end of Grade 6, at the end of Grade 11, and again at the end of Grade 13 is too truncated. A four-year university curriculum to complement a 12-year grade school system provides more continuity and allows more room for developmental education, compared to a 6+5+2+3 system. As argued before, examinations that are well designed and whose results are used appropriately are not harmful. It is therefore totally unreasonable for the Education Department to ban written examinations for applicants to secondary schools to be admitted on a discretionary basis by the schools.

Level Playing Field

The government has a key role in ensuring a level playing field, which is necessary to enhance morale for everyone. Morale should not be preserved only for the lucky ones but should be ensured for all children and for all teachers.

As argued above, the banding of secondary schools so that some schools will effectively source predominantly band 5 students year in year out while other schools will source band 1 students is not fair to both students and to the teachers of lower band schools. The proposal made above, namely to randomly assign students other than the top 20 per cent to schools in the neighbourhood will allow all schools to compete fairly. Every school other than the preferred ones will source essentially the same mix of students. Even the preferred schools of today cannot be sure of being preferred tomorrow as the other schools through their innovation and effort may become attractive to students and parents and be selected by top students in the future.

The SAR Government's policy of disallowing most schools to use English as a medium of instruction while allowing 120 schools to use English is another example of violating the level playing field principle. Schools should be given the autonomy

to decide what is in the best interest of students. The government's role is to ensure that the teachers who use English as the medium of instruction are qualified.

Social Safety Net, ICAC, and Upward Mobility

The government is in the position and has the responsibility to provide an adequate social safety net to provide an alternative to criminal activities as a way to procure survival. As explained earlier on, only when such a safety net is in place can we teach students to be law-abiding citizens. Hong Kong has an Independent Commission Against Corruption. To the extent that such a body functions effectively and that all able-bodied people can make a living, however humble it may be, while the handicapped, the weak, and the sick are well cared for schools can teach the virtues of honesty, compassion, and care for others. To the extent that the opportunities for upward mobility are available for anyone who works hard and who works intelligently the motivation to study hard and to learn more will be kept alive.

6. Conclusions

Education is an investment that potentially brings high returns. However, it is not strictly a private matter, and equity as well as efficiency considerations dictate that the government must be involved.

Both the inputs in the education process and the outputs from education are heterogeneous, which makes the "education market" a world apart from the ideal perfect competition model. The government needs to get involved in setting and assuring standards, and because there are important external benefits from education and significant implications for equity, the government has to shoulder much of the cost of the education investment. The government has much responsibility in ensuring a level playing field in education, but should respect the autonomy of front-line teachers and schools.

Education is not just the transmission of knowledge. Actually, the transmission of knowledge is only secondary. More basic to the goals of education are the nurturing of reflective and independence skills(Ho, 1998). Examinations are a valuable tool that can serve this end and deserve an important place in education. Yet examinations are only a tool and not the ends of education. Not only do we need to provide counseling and guidance for our students who have to sit through various examinations throughout life, but the results of examinations must not be used

incorrectly. Using the results of examinations to differentiate students and assign them to different schools goes against the principle of level-playing field for secondary schools, hurts the morale of lower band schools and students, and inevitably produces pressures on students. In this instance the culprit is not the examinations, but the misuse of examination results.

Education must interface with the reality of the society in which the students will live. We cannot shelter our students from the forces imposed by society. Instead, students must learn to cope with those forces. For this reason, teachers must be trained not only in effectively transmitting knowledge but also in helping students to grow up and face those challenges. The government, being in the position of seeing the major forces at work shaping the development of society, should alert schools of those developments. Schools and teachers should anticipate the changes and be prepared to help students cope with all the impending demands on our students.

References:

Burnett, Nicholas, Kari Marble, and Harry A. Patrinos(1995) “Setting investment priorities in education,” *IMF: Finance and Development*, December, 42-45.

Curriculum Development Council(2000) *Learning to Learn—the Way Forward to Curriculum Development*, November, Hong Kong.

Curriculum Development Council(1999) *A Holistic Review of the Hong Kong School Curriculum: Proposed Reforms*, October.

Education Commission(2000) *Learning for Life, Learning through Life –Reform Proposal for the Education System in Hong Kong*, September.

Fung, Man Wai(2001) “A Word on Education Reform,”(in Chinese) *Mingpao*, November 27.

Ho, Lok Sang(1998) “A Model of Human Nature and Personal Development, *Journal of Socio-Economics*, Vol. 27, No.2, 271-287.

Lazear, Edward P.(2000) “Education Production,” Discussion Paper Series #287 March, School of Economics and Finance, University of Hong Kong.

Psacharopoulos, George(1994) Returns to Investment in Education,” *World Development*, Vol. 22, 1325-43.