

Economics of education

Where is this thing coming from?

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Seven illustrative texts

I asked myself: If I were to identify seven historical texts, not necessarily the most *influential* ones in economics of education, but ones that *illustrated* the history of this field for my students, what would I choose? Here's my list:

1961	Theodore Schultz	“Investment in human capital”*, a non-empirical (and narrative) article in the <i>American Economic Review</i> arguing for a better focus on something called ‘human capital’.
1966	James Coleman	<i>Equality of Educational Opportunity</i> , or the ‘Coleman Report’, a 700-page report based on data collected from around 150,000 school students in the US.

1974	Jacob Mincer	<i>Schooling, experience and earnings*</i> , a 150-page book with groundbreaking theory (largely mathematical) and empirical analysis (using US census data).
1979	Elchanan Cohn	<i>The economics of education</i> , an early textbook, around 450 pages.
1981	George Psacharopoulos	“Returns to education: An updated international comparison”*, an article in <i>Comparative Education</i> containing a meta-analysis.
2003	Alain Mingat, Jee-Peng Tan and Sobhana Sosale	<i>Tools for education policy analysis*</i> , a 300-page manual published by the World Bank.
2007	Eric Hanushek and Ludger Woessman	<i>Education quality and economic growth*</i> , a 39-page booklet published by the World Bank.

What about a 'pre-American' economics of education?

- People have been making economical decisions in relation to education as long as education has existed.
 - As a minimum, all societies have had to take decisions around how much time to spend transferring knowledge and tradition verbally to the next generation.
 - Writing in ancient Egypt brought about a new inequality and new decisionmaking with respect to who should be trained to become literate.

- The Imperial Examination in China from AD ± 600 to 1905 was arguably the first truly meritocratic system to give every household an opportunity to make a cost-benefit education calculation.
- Scotland, inspired by the Reformation, passed tax laws in 1633 to finance schooling for every child, even the poor.

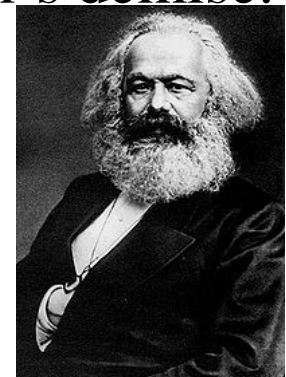
- The larger the education systems, the larger the economics of education questions.

Year	World primary GER	SSA primary GER
1830	±2	
1870	±17	
1950	47	
1999		80
2002	100	
2008		102

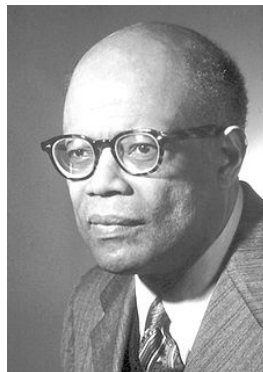
- To conclude, the more redistributive and the more centralised the education system, the greater the economic complexity.

A few points on the history of economics in general

- Earliest ‘economist writers’ include Aristotle, Thomas Aquinas and Ibn Khaldun.
- In Europe about 1500 to 1800, mercantilism was a normative ‘science’ encouraging accumulation of silver and gold (read plundering).
- Adam Smith, with his *Wealth of Nations* in 1776, is often regarded as the ‘Adam’ of modern economics (or classical economics). Wrote of the ‘invisible hand of the market’. Smith and subsequent economists followed a narrative descriptive style.
- Marx saw monopoly capitalism as the seed of capitalism’s demise.



- Neoclassical economics in the early 1900s saw a shift towards a more structured, mathematical mode of explanation.
- Keynesian economics, spurred by the Great Depression, focussed on market failure in the form of unemployment. This brought back a far more normative, policy-focussed approach in economics.
- Where are we now? In many ways, in a place between neoclassical economics and Keynes.
- Apart from ‘main economics’, there are a number of specialisations, such as ‘development economics’, ‘industrial economics’, ‘public economics’, etc. And then of course there’s ‘economics of education’...



Arthur
Lewis



The beginnings of human capital theory

- From Theodore Schultz's groundbreaking 1961 article:

It has been widely observed that increases in national output have been large compared with the increases of land, man-hours, and physical reproducible capital. Investment in human capital is probably the major explanation for the difference.

...

The mere thought of investment in human beings is offensive to some of us. Our values and beliefs inhibit us from looking upon human beings as capital goods, except in slavery, and this we abhor. ... Hence, to treat human beings as wealth that can be augmented by investment runs counter to deeply held values. It seems to reduce man once again to a mere material component, to something akin to property. And for man to look upon himself as a capital good, even if it did not impair his freedom, may seem to debase him.

- **Jacob Mincer** put together the ‘toolbox’ (both on the theory and empirical sides) for examining the returns to human capital investment. Here is the empirical form from *Schooling, experience and earnings*.

current age and b is age at the beginning of schooling. Thus, the use of age alone instead of experience in the earnings function results in the omission of some variables, as can be seen if the expression for t , above, is substituted in the function:

$$\ln E_t = \ln E_0 + rs + \beta_1(A - s - b) + \beta_2(A - s - b)^2.$$

The quadratic term leaves out an age-schooling interaction variable (As). What is more, the partial omission of s leads to a change in its coefficient which can no longer be interpreted as a rate of return to schooling.²

- George Psacharopoulos (World Bank) provided a global view of investment in human capital by providing returns by level of education, by country, and by whether returns were private or social.

TABLE I
Returns to education by level and country type (%)

Country	Survey year	Private			Social		
		Prim.	Sec.	Higher	Prim.	Sec.	Higher
<i>Africa</i>							
Ethiopia	1972	35.0	22.8	27.4	20.3	18.7	9.7
Ghana	1967	24.5	17.0	37.0	18.0	13.0	16.5
Kenya*	1971	28.0	33.0	31.0	21.7	19.2	8.8
Malawi	1978					15.1	
Morocco	1970				50.5	10.0	13.0
Nigeria	1966	30.0	14.0	34.0	23.0	12.8	17.0
Rhodesia	1960				12.4		
Sierra Leone	1971				20.0	22.0	9.5
Uganda	1965				66.0	28.6	12.0
<i>Asia</i>							
India	1965	17.3	18.8	16.2	13.4	15.5	10.3
Indonesia	1977	25.5	15.6				
South Korea	1967				12.0	9.0	5.0
Malaysia	1978		32.6	34.5			
Philippines	1971	9.0	6.5	9.5	7.0	6.5	8.5

- We can think of human capital theory as dealing with the external efficiency of education systems.
- HCT attracted opponents. In particular, Michael Spence's 'screening theory' stated that education is no more than a 'fitness test'. The societal underpinning here was partly 'over-education' in a few Western countries.

Looking inside the ‘education box’: Economics of education acquires its own place in the world

- Though economics of education’s birthplace is human capital theory, many lay claim to HCT (for instance labour economists). Economics of education’s proprietary terrain is the economics of what happens *inside* the education system.
- James Coleman’s ‘Coleman Report’ was the ‘Big Bang’ of education production functions.

- With Cohn's *Economics of education* in 1979, economics of education got its own textbook. This textbook identified five key areas:
 - Human capital theory
 - Education financing models
 - Deciding on the right mix of resources
 - Teacher salaries
 - Overall education planning
- Cohn is also founder of the *Economics of Education Review* (founded 1979 too).

- What were the societal underpinnings of the emergence of economics of education? Essentially, due to post-World War II economic growth, there was more available to spend on education.

The 1980s slump and the 1990s recovery

- The academic trend:

Table 1 Education publications in mainstream economics journals

	Decade					
	1950s	1960s	1970s	1980s	1990s	2000s
Papers per year	0.2	3.4	6.3	2.5	5.2	9.7
Non-North American papers per year	0.0	0.4	0.7	0.5	1.2	3.2

Publications with the word Education, Schooling or School in the title in the following list of journals: *American Economic Review*; *Economic Journal*; *Econometrica*; *Economica*; *Journal of Political Economy*; *Quarterly Journal of Economics*; *RAND Journal of Economics*; *Review of Economic Studies*.
Source: JSTOR, Ingenta Connect, Business Source Premier, Blackwell Synergy.

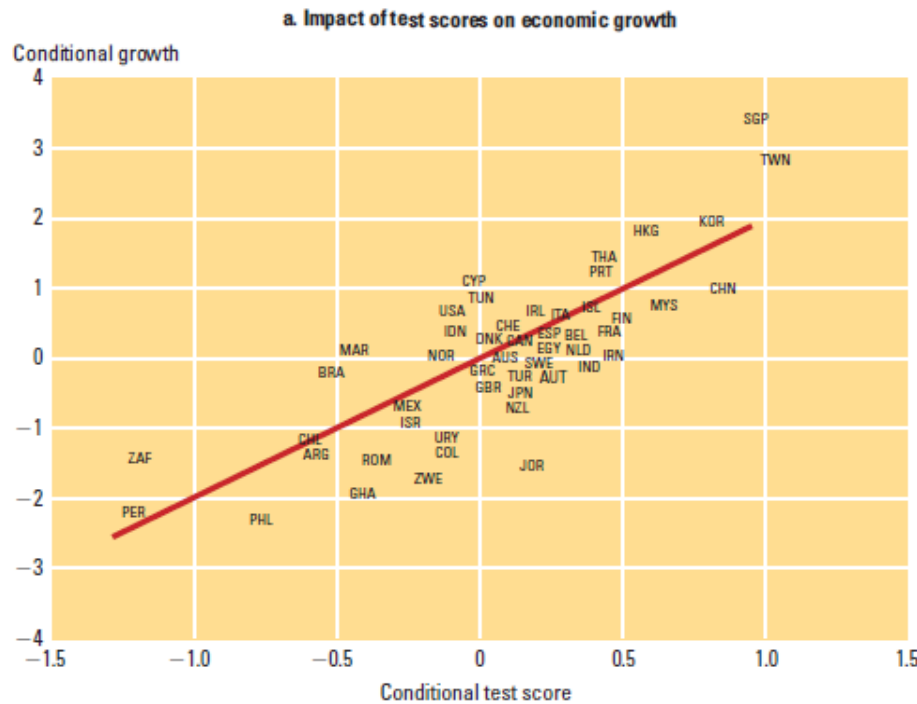
- Why the slump? World economic slump meant slower increases in education spending. Also some scepticism around HCT.

- Why the recovery? Economic revival, but also mountains of new data combined with fast computers. PISA, TIMSS, SACMEQ but also many national datasets provided a feast for data-hungry economists.
- A further factor was that the conventional model of public schooling came to be seen as just one of several alternatives. Experimentation with, for instance, voucher systems spurred evaluations.
- Much of the educational expansion had by now shifted to the developing world, meaning even American economists started focussing increasingly on these countries.
- [Alain Mingat](#) and his colleagues (World Bank) put together their mega-manual, largely using methods from the economics of education (don't try downloading this off the internet – 250MB!).

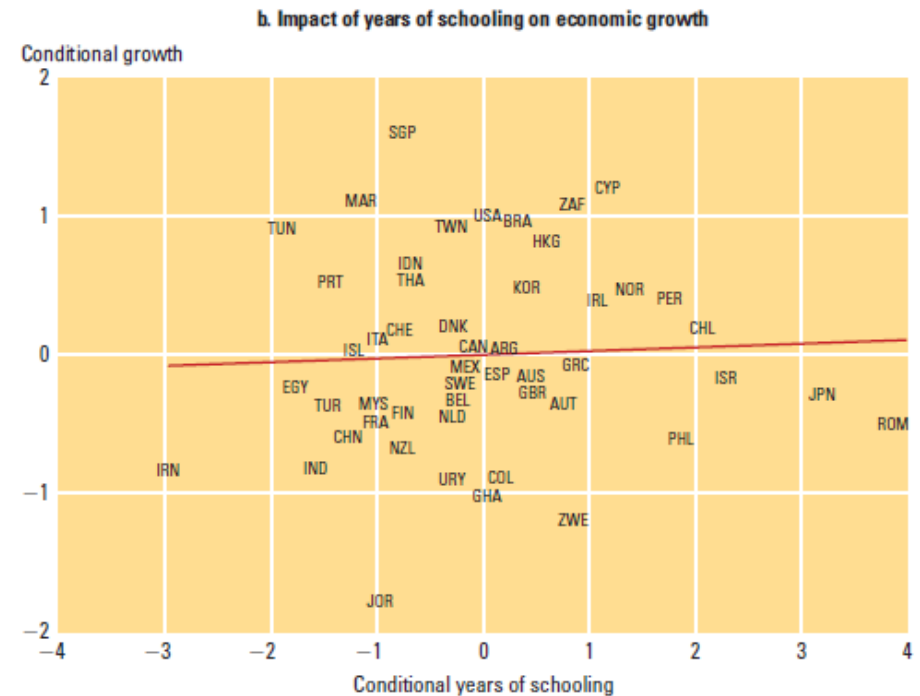


- **Hanushek** (first publications focussed on Brazil) and **Woessman** (Wößmann) have used the international testing data to bring about a radical shift in human capital theory, from the importance of years of education (at the individual and country levels) to the quality of education (one's 'true' human capital).

Figure 4 Test scores, as opposed to years of schooling, have a powerful impact on growth



coef = 1.9804387, se = .21707105, t = 9.12



coef = .0264058, se = .07839797, t = .34

Where might economics of education go in future?

- A marriage between economics of education and educational psychology?
- A shift in focus towards tertiary and vocational education?
- A greater focus on the economics of new information and communication technologies (ICTs)?
- A focus on the technology of education and its environmental footprint?
- A focus on education as one of the ‘good’ (clean) economic sectors in an increasingly emissions-worried world?

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