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International education quality

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Abstract

Education is linked with economic productivity and growth in personal income. But what is it about education which creates this linkage? Have nations with high rates of enrollment achieved the maximum educational productivity?

This note will argue that the impact of education is derived primarily from its quality, but that there are multiple indicators of educational quality which do not necessarily operate in uniform fashion. The note will describe the distribution of educational quality around the world and point out that even in nations with full enrollment and high educational expenditure the impact of investments varies considerably. The note will review what we know about educational quality from the evidence of the last two decades. It will address some of the current debates surrounding investment in educational quality and it will introduce several issues which will drive these debates in the future.
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1. International debates over educational quality and socio-economic status: 1966–1990

In a review two decades ago, Lewis Solmon (1986) summarized what we knew about the economics of educational quality. He pointed out that much of the debate had surrounded the results from the 'Coleman Report' (Coleman et al., 1966) which argued that the majority of the variance in academic achievement of American students could be explained by knowing the socio-economic status of the home rather than the quality of the student experience in school. Solmon pointed out that it was not uncommon to find that the quality of education also has a profound impact (Behrman and Birdsall, 1983; Johnson and Stafford, 1973; Rizzuto and Wachtel, 1980), but the debate seemed driven by the issues raised by Colman, namely that when compared with socio-economic status the statistical power of school quality was small. More importantly, it was argued that the Coleman thesis pertained to all nations and not only the US (Simmons & Alexander, 1978).

The Coleman generalization, however, was offset by new research results from less industrialized nations (Heyneman, 1976a, 1979). For instance, children from more educated homes performed significantly better than children from less educated homes in Australia, England and Hungary, but this tended to be less true in Thailand, Columbia and India (Fig. 1). When the explanatory power of school quality in models of school achievement was compared systematically across 29 countries with that of socio-economic status (SES), the conclusion was that school quality explained more of the variance than SES. In fact, the studies demonstrated that school quality was a more important predictor of achievement in the poorer countries. This positive relationship between the poverty of a nation's school system and the explanatory power of school quality is shown in Fig. 2 (Heyneman, 1976b, 1990; Heyneman & Loxley, 1983a).

These results from the 1970s suggested that individual

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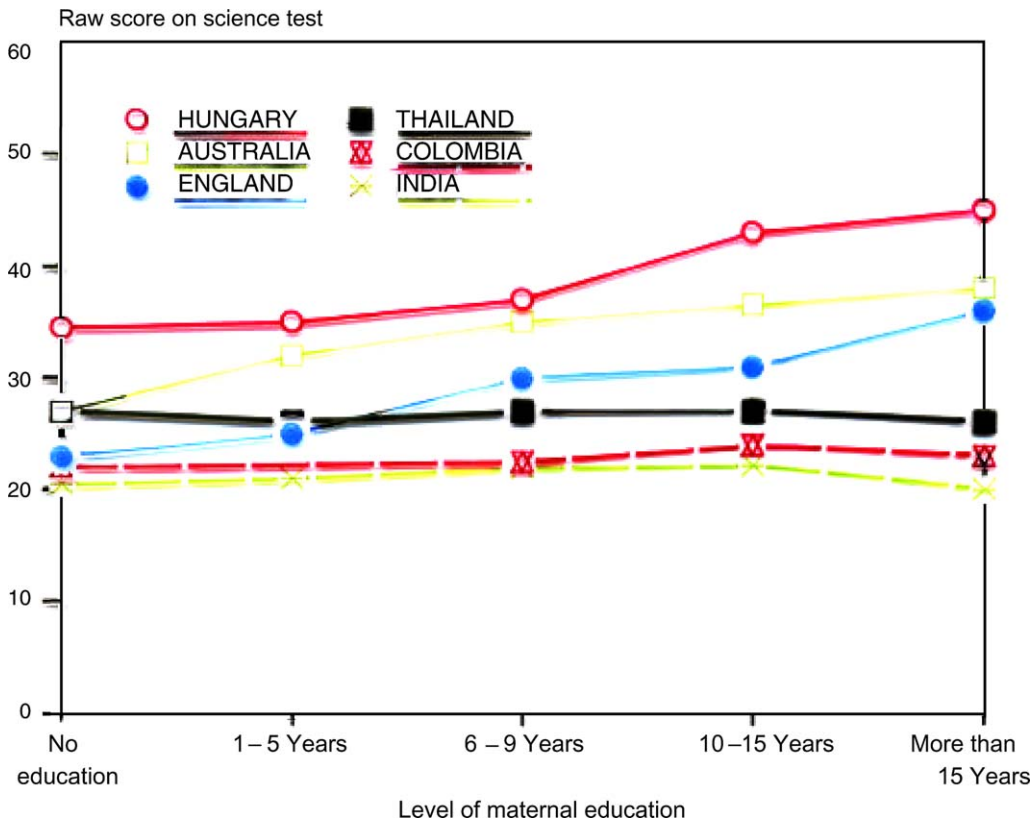

Fig. 1. Student primary-school achievement by level of maternal education in six countries. Source: Heyneman and Loxley (1983).

students could overcome the exigencies of their social status through the school system because in low income countries the academic performance of students in poor households was not as different from the performance of children from wealthy and privileged backgrounds as it was in high-income countries. This seemed to challenge the views of the conflict theorists (sometimes referring to themselves as 'Marxists') who believed that school systems were biased against the poor; that public investments in education reinforced established socio-economic classes hence making the lives of poor children politically more problematic (Jencks et al., 1972; Carnoy, 1974).

Throughout the 1980s the conflict theorists continued to counter the claim that poor children in low-income countries could perform as well as more privileged children. When new statistical techniques emerged, these were employed in the attempt to characterize educational systems as inadequate or even counter-productive to the interests of the poor (Riddell, 1989). But usually these attempts were employed on single nation samples and examined secondary rather than primary education (Heyneman, 1989).

Recently, however, an attempt was made to analyze data from the Third International Study of Mathematics and Science (TIMSS) and to ask the same school effect questions across high and low-income countries (the 'Heyneman–Loxley Effect') as were asked two decades ago. The authors concluded that SES has a powerful effect even in developing countries. But they also point out that the earlier results may have been correct in that the SES effect may have strengthened over the 20 year interim (Baker, Brian & LeTendre, 2003).

There is another possible interpretation which has to do with the significant difference in the samples. The Heyneman-Loxley (1983b) sample of 29 countries included nine countries from Latin America and only one country from the Europe and Central Asia region (Hungary). The Baker, Brian & Letendre (2003) study of 35 countries included one from Latin America (Chile), and eight from Europe and Central Asia (The Russian Federation, Hungary, Latvia, Romania, Lithuania, Slovakia, Czech Republic, and Slovenia). One important difference between school systems in Latin America and the former socialist countries is the equity by which school resources are distributed. The distribution of school resources in Latin America may be the most inequitable of the world's regions whereas their distribution in the former socialist nations may be the world's most equitable. The question is whether the change in

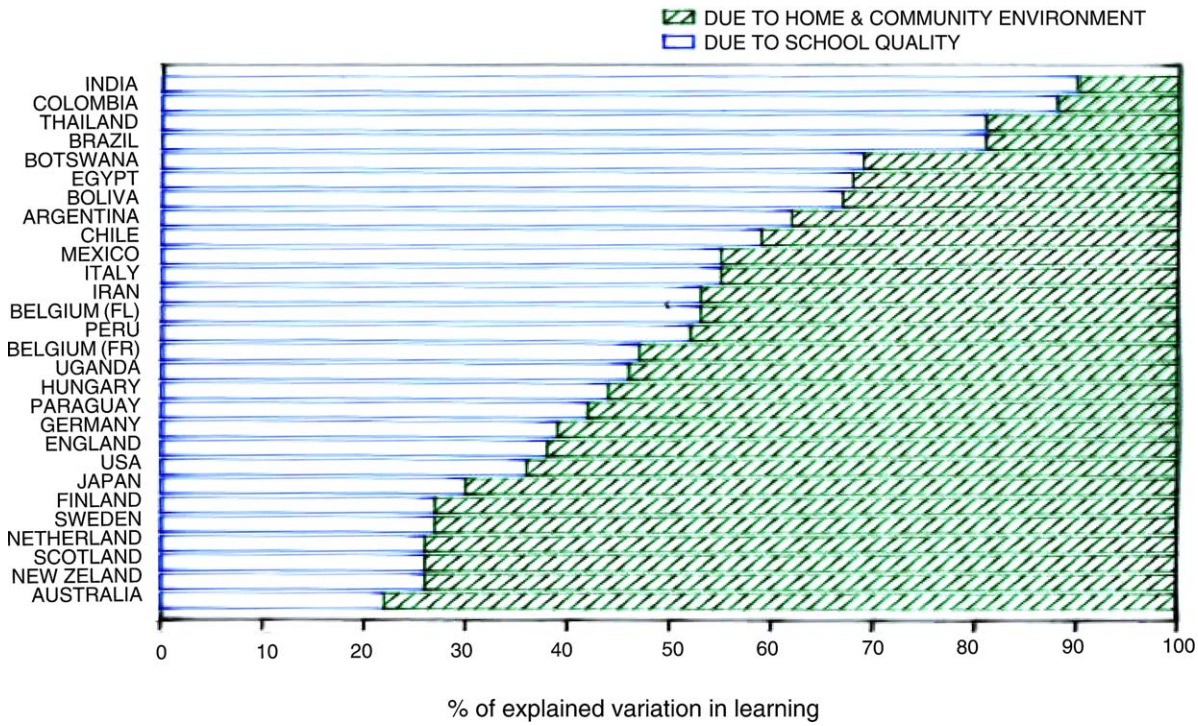

Fig. 2. Influences on primary school science achievement. *Technical details in: Heyneman and Loxley (1983). **Correlation between the influence of school quality and national GNP per capita [$R = -0.72 (P < 0.001)$. Source: Heyneman and Loxley (1993a).

the variation of the school quality distribution between the Baker and Heyneman samples tended to depress the power of school quality to explain the variance in academic achievement, suggesting instead that socio-economic status was the dominant determinant of achievement.

What we learned from the work 20 years ago is that the statistical power of socio-economic status is not uniform across societies. We learned that the statistical power of socio-economic status, as well as school quality, differs by age, gender, and subject matter. In general socio-economic status is more powerful in predicting achievement on those subjects over which the school is one of many sources of information and knowledge. This is the case for instance with art, language, and literacy. School quality tends to be more powerful in predicting achievement on those subjects over which the school curriculum is the primary source of theoretical information and experience, such as mathematics and science.

The arguments of the conflict theorists, however, could not explain why it seemed to be the case that the poor continued to make significant sacrifices to attend educational institutions; uniformly lobbied for more educational investments, rather than less; and why socialist states (who claimed to represent the interests of the working classes) made large investments in education which were popular with the working classes and the poor. If schooling was against the interests of the poor, why would the poor want schooling so badly? Were the conflict theorists prepared to argue that they knew the interests of the poor more accurately than the poor themselves?

An academic debate cannot negate what is obvious to ministers of education in low-income countries; parents of low socio-economic status want more education for their children. While academics may argue over the relative importance of one effect versus another, such arguments appear irrelevant in the world of education policy where the relevant questions concern how to raise the availability of school resources and distribute them fairly and effectively. Policy-making officials from less industrialized societies never argued that investments in school quality should not be made because of the finding that academic achievement is conditioned by a home environment.

In the end these ‘academic debates’ do not seem to determine investments in school quality in nations. How is school quality distributed around the world, and what is the current status of the school quality debates?

2. The international distribution of educational quality: results from the 1980s

The number of independent countries has increased dramatically over time. While there were only about 60

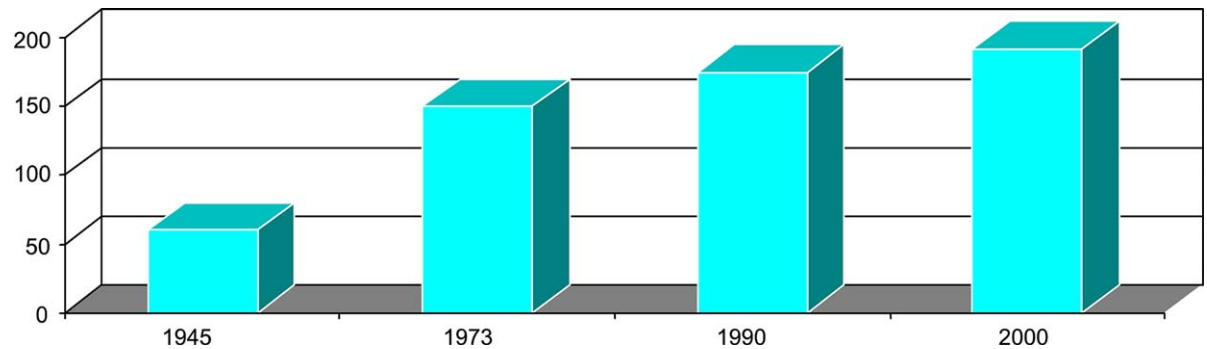

Fig. 3. Number of independent countries. This includes 42 Micro-states with populations from 1 to 850 thousand totaling less than 1/5 of 1% of the world total. Source: United Nations (2003).

in 1945, it increased to over 140 by 1973 and over 180 by 2000 (Fig. 3). In general, however, the distribution of school quality parallels that of economic wealth. For instance, the nations where the world's 10 largest banks included the US, Germany, Switzerland, and France and the United Kingdom, and nations with the 10 largest retail companies include again, France, Germany and the US.

The typical state of school quality across countries in the 1980s is illustrated by Fig. 4. In a country such as Bolivia the average primary school student was exposed to less than one dollar/year in non-salary expenditure; in Malawi the level was slightly higher, and in Malaysia it was as much as 30 times higher. By contrast, a typical student in an industrialized country, such as Sweden or the US is exposed to a level 300 times that of Malawi or Bolivia.

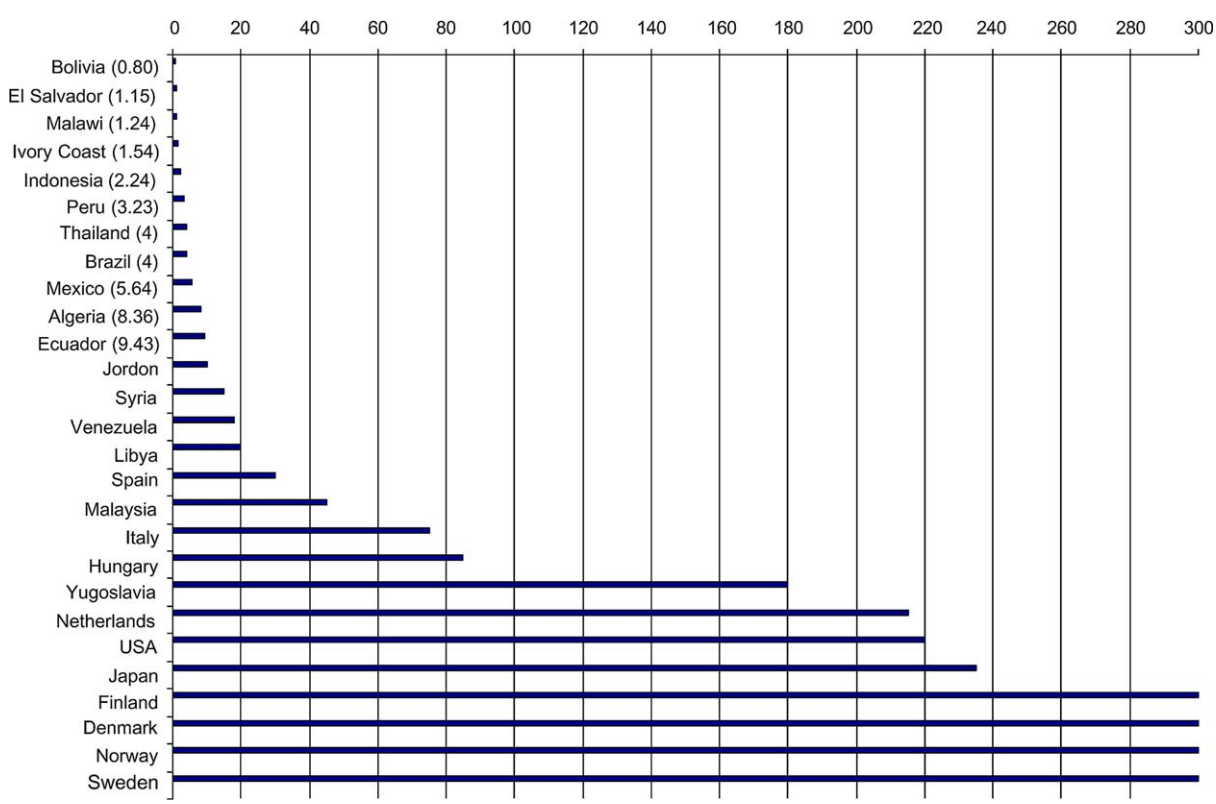

Fig. 4. Value of classroom materials and other non-salary recurrent investment per student enrolled in primary schools. Source: Heyneman (1991).

2.1. Educational quality: level A

In educational terms, different levels of expenditure for non-salary items—chalk, blackboards, furniture, reading materials—imply that the educational product is radically different as well. In many parts of rural Africa, Latin America and South Asia, we found only a few textbooks in a classroom. The teacher was expected to copy the content of the (often out-dated) book on to the blackboard (often making mistakes), and the students, in turn were expected to copy (often making additional mistakes) from the blackboard into their notebooks. The students were then expected to memorize the content of their notebooks. The educational result of this 'copy/copy' situation has been rote memorization of poorly understood information, often with large gaps in logic, outdated facts, and interpretations reflecting only simplistic explanations as to how or why events occur. The copy/copy methodology, however, remains the basic educational technology for most of the students in the world.

2.2. Educational quality: level B

If a country was able to allocate three times the level of non-salary inputs the situation was found to improve dramatically. A country can then afford to provide each student with one book per year in each subject. Socialist nations—the USSR and the People's Republic of China—treated the one text/student/year as an important national objective. Books may have been of poor quality in content and manufacturing. The bindings may have fallen apart well before the end of the school year. An anatomy drawing may have been illegible. But these problems were usually been treated as of secondary importance; of primary importance was the physical delivery of a book for every student. In spite of the poor quality of the textbooks however, the leap in educational quality was found to be dramatic. Having a book reflects a direct linkage between the wider world of scholarship and ideas and the individual student. An excellent book, virtually memorized by an entire cohort, was a powerful tool over what could be achieved without a sufficient supply (Heyneman, Farrell, & Sepulveda-Stuardo, 1978; Jamison, Heyneman, & Montenegro, 1984).

2.3. Educational quality: level C

If a nation could afford a level of 30 or 40 times the non-salary investment of the poorest countries the quality of education makes significant progress. More than one title of book may be available, allowing teachers to choose the most appropriate for different students. At this level, the teacher becomes an organizer and manager rather than the sole provider of information. The teacher may see that a child has a particular problem in arithmetic and may choose the right reading material to fit the problem. This requires a revolution in teacher training and in service professionalism.

2.4. Educational quality: level D

The quality of education in industrialized societies has never been ideal. Each nation has particular problems—lack of student motivation, curriculum rigidity, and managerial ineffectiveness. But it is also true that large amounts of learning take place across the socio-economic spectrum. The typical industrialized society may allocate up to 300 times the level of non-salary expenditure/child as a poor nation. Electronic access to libraries and educational software made it possible for teachers to present information from a wide variety of sources—printed sheets manufactured within the school itself, film strips, computer-driven lessons and reviews, information and library study and field experiences. These sources of information are intended to yield self-generated learning so that students may research libraries and databases themselves to help answer any given question and to bring new and divergent views to bear on any given problem. There may be problems of education quality in industrialized nations, but the level of educational expectations is often professionally more sophisticated and, hence, more complicated.

Most of the world's students attend school in areas where school quality is at a level A or B, occasionally at level C, and rarely at level D. South and East Asia account for 57% of the world's students, Latin America 10%, Africa 11%, and ECA 10%. The industrialized wealthy countries, where average school quality is likely to be at a level D, constitute only 6% of the world total of students; students in the US comprise only 2% of the world total.

Expenditures on educational quality grew significantly in most, but not all, areas of the world since 1980. Generally high income nations spend more on goods and services per/student (Fig. 5). Between 1980 and 1994 allocations/student doubled around the world, but they increased by different amounts in different regions. In the US they increased by 103%; in Europe they increased by 135%; in Asia (South and East Asia together) they increased by 151%; and in East Asia alone they increased by 200%.

In sub-Saharan Africa, however, expenditure/student dropped during that time period by 22% (Heyneman, 2001).

3. The economics of educational quality: current dilemmas

Current dilemmas often stem from the fact that increased financial allocations have not mirrored pro-

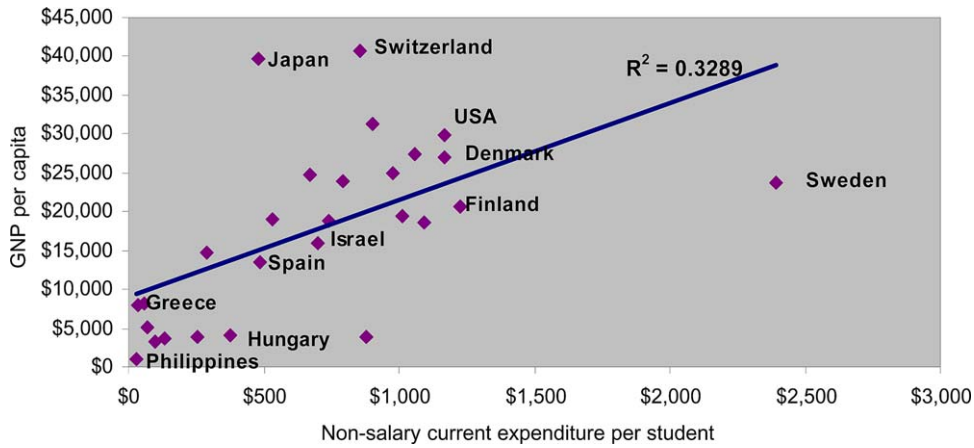

Fig. 5. National GNP/capita and non-salary expenditure/student. Source: Heyneman (2001).

portional changes in learning or other educational outputs. In fact, some school systems from middle income countries 'outperform' school systems in high income countries (Table 1). Norway allocates over $US 1100 per capita on education.[1] On an international test of mathematics achievement 46% of the 8th grade student population in Norway achieved a score over the international mean. The US allocated over $1000 per capita on education and 45% of the students achieved a score over the international mean. The expenditure necessary to have an additional one percent of the Norwegian students achieve over the international mean would be $US 24/capita. The expenditure for the same increase of 1% of the student population in the US would be $US 23. But the expenditure necessary to have an additional 1% achieve over the international mean in Korea, Hong Kong, the Czech Republic Hungary and Thailand would only be $4. In Latvia it would be $3 and in Lithuania and Romania it would only be $2. These data suggest that in spite of their relative poverty, the school systems in Korea, Lat-

Table 1
Low income countries invest less per student but can be more effective in increasing achievement

Country	Public expenditure on education/capita (A) in dollars	Proportion of students over the international median in 8th grade mathematics (B) as a percentage	Ratio A/B
Norway	1111	46	24
United States	1040	45	23
Kuwait	848	3	287
Singapore	724	94	7
United Kingdom	649	48	14
Japan	602	83	7
Israel	584	56	10
Republic of Korea	362	82	4
Hong Kong	309	80	4
Czech Republic	297	70	4
Hungary	272	60	4
Thailand	206	54	4
Iran	183	9	20
Latvia	147	40	3
Lithuania	71	34	2
Romania	55	36	2

Source: Heyneman (1997b).

[1] In this instance, per capita refers to the allocation/per person in the population rather than per student.

via and Thailand are among the world's most efficient. By contrast, to garner an additional percentage over the international mean, Kuwait would have to spend about $287 per capita, 12 times that of the US. This suggests that in terms of mathematics achievement Kuwait has one of the world's most inefficient school systems.

In terms of moving students through the system, similar anomalies emerge across countries. Wealthier school systems are not necessarily more able to graduate students more efficiently. School systems in the former Soviet Union, for instance, manage to move almost 100% of the students from grade one to grade three. In the Middle East and North Africa the proportion is also over 90%, in East Asia it is over 85%, but in Latin America it is just over 70%, in spite of the fact that the financial capacity in Latin America is similar to the former Soviet Union. In terms of progression rates, however, the most problematic region of the world is South Asia where less the 60% of the students entering grade one make it as far as grade three (Fig. 6).

Even in high performing school systems, achievement is not uniform (UNICEF, 1998). In fact different school systems may have different achievement tendencies depending on the emphases within their formal curriculum. This principle is illustrated with data collected in the early 1990s. Mean levels of science and mathematics achievement are available for six nations: three of them are OECD market economies (Canada, France and Britain); and three are former socialist party states (Hungary, Slovenia, and the former Soviet Union) (Kovalyova, 1993).[2]

In spite of the fact that math and science performance was above the international mean in all six countries, when achievement is broken down into discrete skills, the pattern of achievement differed systematically. In terms of awareness of facts, the three former Socialist school systems outperformed all schools systems in OECD countries. In terms of the application of facts to problem-solving, the difference between the two groups of counties is more attenuated. Finally, in terms of solving problems of an unanticipated nature (i.e. problems outside of those in the textbooks in which students had no opportunity to prepare), the high performing systems in OECD market economies out-performed those in the former socialist economies. This suggests that the pedagogical purposes of school systems in the two types of economies differed in the emphasis placed on problem solving. In a planned economy, professional careers were administered by central authorities. The major challenge was to prepare students for certain occupations which had already been decided. In market economies, however, such labor market certainty is unknown. Hence, the task of a high quality school system in a market economy is to prepare students for changing careers and flexibility in the labor market. An excellent school system in a market economy emphasizes those skills which maximize adaptability; an excellent school system in a planned economy emphasizes mastery of discrete technical factual material. Both school systems accomplish their objectives. The problem is that the labor market is not administered in any socialist nation today as it once was. Thus all school systems in the former socialist nations

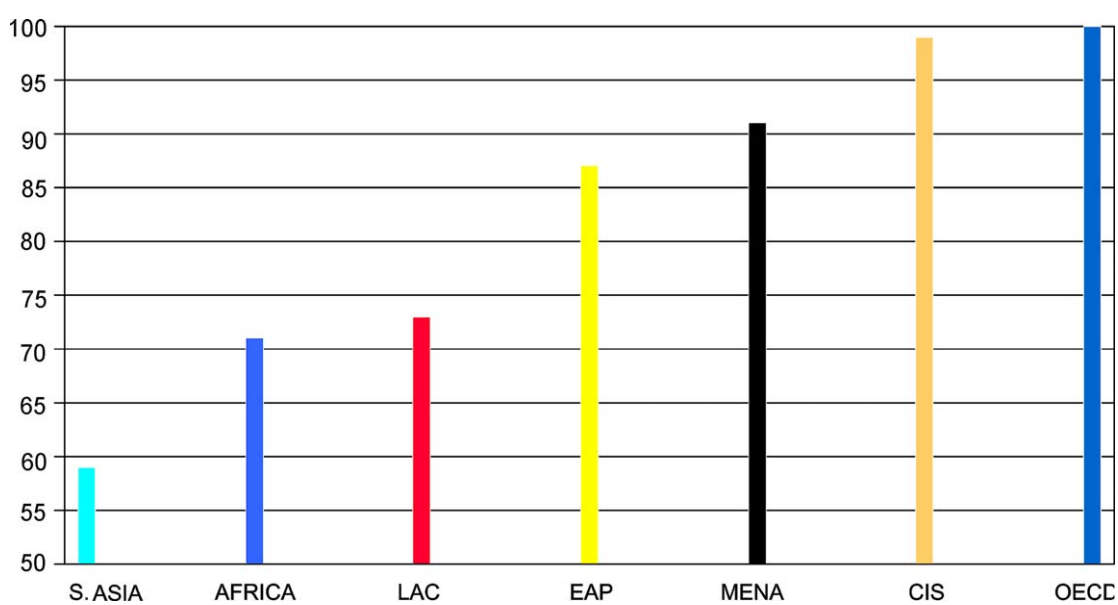

Fig. 6. Percent of students in grade 1 reaching grade 3. Source: UNICEF (1998).

[2] Data were collected before the end of the Soviet Union from a sample of the 15 republics.

must now emphasize the kinds of objectives which are emphasized in OECD countries. This shift is not simple.

What a curriculum emphasizes can be measured in terms of types of skills, or it can be measured in terms of the number (or coverage) of skills. For instance, significant differences emerge between the mathematics and biology curricula in France versus the mathematics and biology curricula at the same age and grade level in North Africa (Valverde, Schmidt, & Biachi, 1995). In France the mathematics curriculum has 10 objectives including representation, routine procedures, solving and prediction, verifying and generalizing. French students are expected to master all ten. But in North Africa (with less than 100% enrollment) students are expected to cover only four of the 10 objectives. In biology, students in North Africa are expected to cover two major curricular objectives while students in France are expected to cover six. In essence the curricular expectations of mathematics and biology students are considerably lower in North Africa than they are in France. Knowing only that a percentage of students attend school tells us very little about what they are expected to learn or what we can expect of their performance in the labor market.

No nation can expect to improve its educational quality unless it has some reliable measures of current educational quality. The problem today is that, in terms of education statistics, there are two discrete worlds—the world of OECD member countries and the world on non-OECD member countries (Heyneman, 1999). A few non-OECD member countries (Brazil, Latvia, Malaysia, for example) began to invest heavily in their statistical systems so that they might be compared with high income countries, but in general the state of education statistics is worrying. Table 2 illustrates the problem. It provides a list of educational data which are normally available in industrialized societies and elsewhere in the world. Of the 45 indicators available in OECD countries, less than one half are available elsewhere. The absence of reliable statistics poses many new and complicated problems in terms of monitoring even the most basic of information such as progress on Education-for-All.

Table 2
OECD education indicators

Resources and processes	Available in non-OECD countries
Processes and staff	
Instructional time	
Teaching time per subject	no
Hours of instruction	no
School processes	
Grouping within classes	no
Human resources	
Staff employed in education	yes
Ratio of students to teaching staff	yes
Teaching time	no
Teacher education	yes
Teacher compensation	no
Teacher characteristics	no
Educational research and development	
Educational R&D personnel	no
Educational R&D expenditure	no
Financial resources	
Expenditure in education	
Educational expenditure relative to GDP	yes
Expenditure of public anad private educational institutions	no
Expenditure for educational services per student	no
Allocation of funds by level of education	yes
Current and capital expenditure	yes
Sources of educational funds	
Funds from public and private sources	no
Public funds by level of government	notional
Share of education in public spending	yes
Participation in education	
Participation in formal education	Gross enrollment only
Early childhood education	notional
Participation in secondary education	yes
Transition characteristics from secondary to tertiary education	yes
Entry to tertiary education	yes
Participation in tertiary education	yes
Continuing education and training for adults	no
Contexts of education	Available in non-OECD countries
Demographic context	
Educational attainment of the population	yes
Gender differences in education	yes
Youth and population	yes
Social and economic context	
Labor force participation and education	yes
Unemployment among youth and adults	notional
National income per capita	yes
Opinions and expectations	

(*continued on next page*)

4. The economics of educational quality: future issues

Over the last two decades attention has concentrated on the quality of basic and secondary education. In the future attention will be focused on the quality of higher education. Higher education systems around the world are normally divided into elite and mass systems, defined as below or above 15% of the relevant 18–22-year-old age cohort. In industrialized economies today, there are no more elite systems. In the last two decades higher education in industrialized societies surpassed 30%, and in several cases over 60% (the US, Canada and Sweden),

Table 2 (*continued*)

Resources and processes	Available in non-OECD countries
Importance of school subjects	no
Importance of qualities/aptitudes	no
Public confidence in the schools	no
Educational responsibilities of schools	no
Respect for teachers	no
Priorities in school practices	no
Decision-making at school level	no
Results of education	Available in non-OECD countries
Student outcomes	
Progress in reading achievement	no
Amount of reading	no
System outcomes	
Upper-secondary graduation	yes
University graduation	yes
University degrees	yes
Science and engineering personnel	yes
Labor market outcomes	
Unemployment and education	yes
Education and earnings	notional
Educational attainment of workers	notional
Labor force status for leavers from education	notional

Source: Heyneman, 1976b).

but the upward trend in higher education are universal. In the 5 years between 1995 and 2000, higher education grew by 8% in Australia, 17% in Spain, 25% in Turkey, 40% in Korea, 64% in Hungary and 84% in Poland (OECD, 2001, Table C3.4).

At the same time, expectations are rising as to what higher education means. New subject matter, new teaching technologies, new electronic information sources are required of higher education institutions hoping to be competitive, but expenditure on higher education varies. On average per student expenditure in OECD countries was over $US 11,000 in 2001, but in the US it was over $US 19,000, while it was only $US 4328 in Turkey, $US 5688 in the Czech Republic and $US 4789 in Mexico (UNESCO, 2003).

Increased enrollment places extraordinary pressures on public expenditure. While Mauritius only allocated 13% of its educational budget to higher education, France allocated 18%, the United Kingdom allocated 22%, while Malaysia and Singapore with high ambitions for economic competitiveness, allocated 32% and 35% of their public education budgets to higher education. Given the new pressures to increase higher education access and quality, the question is what is to become of primary and secondary education quality. It is clear that many nations are allocating more resources to improve the quality of higher education while insufficiently financing elementary and secondary education. The complexity of providing high quality primary and secondary education is not significantly different from that of higher education, and in a well balanced education system the level of expenditure/pupil should be very close. There is no educational reason why primary and secondary education per student expenditure should be a tiny fraction of per student expenditure in higher education. Only Japan achieved the level of parity in which student expenditure between higher and lower levels are equal. The OECD average is about 2:1 with per student expenditure about double in higher education what they are in primary and secondary education. In the Gulf States the ratio is 4:1; in Latin America the ratio is 7:1; in Jordan and Morocco the ratio is 13:1 and 14:1; and in sub-Saharan Africa the ratio is over 30:1. Expenditures on the typical higher education student in sub-Saharan Africa is 30 times the expenditure on the typical primary student (Fig. 7).

With expenditure on education quality growing around the world, trade issues are at stake (Heyneman, 1997a). Education is now the sixth largest export among services of the US (Heyneman, 2001). Many OECD countries are marshalling their ministries of education to help promote these ‘exports’. But what are education services exactly, and why are the rules and regulations surrounding their export so important for the future of educational quality around the world? This has raised concerns in many parts of the world that dominance could be achieved by English-speaking education providers, or by education providers situated in high income nations.

As an industry, education is normally divided into three categories: *programs* (those which offer a degree or certificate), *goods* (textbooks, teaching materials, equipment) and *services* (test preparation and testing, consultancy, tutoring, and certification). In terms of markets, the opportunities are considerable. In 1996, $775 million in educational software was purchased in the US, growing to $2.5 billion only 4 years later. The world total of educational software purchases grew four times in those 4 years, from $US 1.5 billion in 1996 to $US 4.1 billion in 2000 (Heyneman, 2001, p. 353). Moreover, the $US 4.1 billion in educational software purchases in 2000 was augmented by an additional $US 2.1 billion in private sales of educational software in that year, which suggests that there is a world-wide trend for parents and households to invest in educational goods and services to augment the expenditure through the school system. In the next 10 years, the commerce in teaching materials is expected to grow from $220 million to $520 million in South Africa, from $1 billion to over 1.6 billion in China. The fact that countries spend very little per student does not necessarily imply that the market for educational services is low. In 1998 France spent over $34/student in teaching materials and China spent less

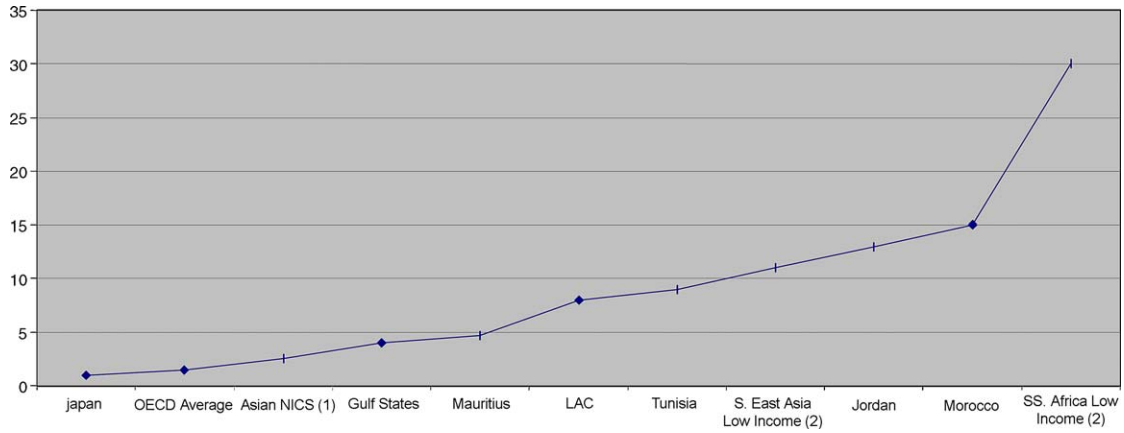

Fig. 7. Ratio of expenditure/student in tertiary education with expenditure/student in primary education. Source: Heyneman (1997).

than $5/student. But with only 112 million students in France, the market is worth about $420 million in education commerce, while with 211 million students the market in China is just under $US 1 billion (Heyneman, 2001, p. 256).

Part of the trade in education includes the propensity of higher education students to seek education in a foreign country. There were about 548,000 foreign students studying at US universities in 2001, an increase of over 6% from the year earlier. But this was offset in part by the more than 140,000 US students who left to study abroad that same year. The commerce is important for many reasons. More than two-thirds of the foreign students who study in the US pay full tuition, hence some of the best, brightest and most able to pay students leave their country of origin and its local higher education institutions. When US students study abroad, they pay full tuition at their institution of origin and once an administrative fee is subtracted, the tuition is transferred to the institution overseas. Thus a large percentage of $US 30,000 tuition at a major private university would be transferred to a local university in the recipient country. This is no small incentive for those universities to compete in attracting American or other high tuition-paying students.

In terms of the proportion of foreign students in a recipient country however, the US ranks 12 among 23 industrialized countries. Highest is Switzerland where 16% of the students are non-citizens. In Australia it is 12%, in Germany it is 8%, and in the US it is 3% (Fig. 8). This belies the fact, however, that foreign students concentrate in certain institutions and particular subject areas. Sixteen percent of the graduate students at Vanderbilt are non-citizens, whereas at Columbia it is 22%, Harvard 26%, and Princeton it is 40%. About 20% of the foreign students in the US are studying business administration; 27% are studying engineering, mathematics and computer sciences. Less than 3% study the humanities.

These movements across national borders reflect an international market in educational quality. By and large, the movement to seek degrees (as opposed to the experience of living in another country) signal that the problems of higher education quality are sufficiently serious to warrant out-migration. The worry of many low and middle income countries about education trade in general is that what now pertains in higher education could with the new electronic technologies be characteristic of other levels of education as well. Would it not be possible to deliver high quality secondary education by distance in places such as Pakistan for those who could afford it? Might it be feasible to think of importing educational materials and testing services to augment, or to compete with local providers?

The issue in the trade in educational services is critical to the future of international education quality in much the same way as it would be in manufacturing. It is not a question of usurping a nation's authority to design curriculum objectives for its citizens. What is at issue is the ability of local designers of educational computer software, reading materials and equipment to deliver them at an affordable price and with competitive quality. The world market in educational goods and services can help guarantee, perhaps for the first time, a world of choice of technology and methodology to serve a nation's curriculum objectives.

But will nations open their markets to international education providers? Or more accurately, which nations will be among the first to lower their barriers to free trade in education? It is likely that the nations which do lower educational restrictions to trade may well have an advantage over others in the provision of educational quality.

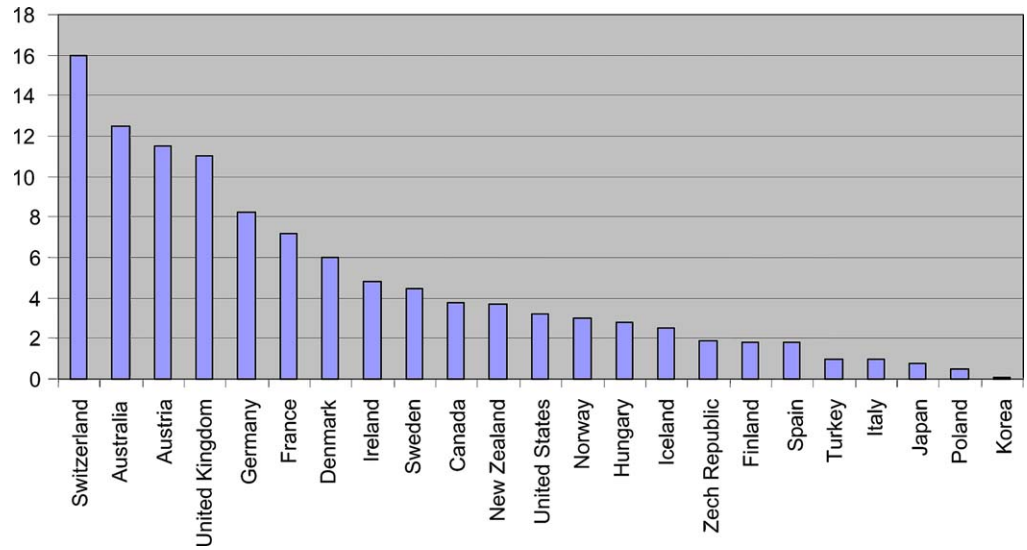

Fig. 8. Percentage of tertiary students enrolled who are not citizens of the country of study (1998). Source: OECD (2001).

5. Summary

In the 1970s it was unclear to the academic community whether public investments in education were likely to lead to proportional benefits for the less privileged. Those disagreements have been settled, at least in the realm of public policy. No one would seriously argue against making educational investments on grounds that homes and family background are also important factors which influence what students learn.

Current issues which predominate education quality debates concern the degree to which nations are differentiated not by educational access but by quality. High income nations are able to invest per student about 300 times more than low income nations. Investments in educational quality are growing throughout the world, with the exception of sub-Saharan Africa. However, it cannot be assumed that educational efficiency is strongly associated with educational expenditure. In many instances, school systems in middle income nations exhibit higher rates of efficiency than school systems in high income nations. The search for explanations will be a preoccupation well into the future.

But new issues will come to dominate future discussions. These will include the quality of higher education and the questions surrounding the lowering of tariff barriers to the international trade in educational goods, services and programs. There will likely be a continuing debate over the degree to which nations should 'protect' their educational systems from foreign competition. However this debate is settled, it is likely that nations which open their economies to international providers of may have an advantage over those who do not.

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