Introduction—World-class basic education

Don Adams

Published online: 25 August 2012
© UNESCO IBE 2012

Abstract Borrowing educational institutions and ideas from the past and from other contemporary education systems is a significant part of the educational history of many nations. Many of the current nations continue to probe the past for pleasure or insights, while some nations seek to erase much of their educational past. Further, an increasing number of contemporary governments and educational leaders actively seek to improve or redesign their educational programmes by borrowing current educational ideas, programmes, and institutions from other countries. This Introduction recognizes the legitimacy of multiple definitions of the term “world-class” but limits discussion to basic education. Thus, the focus here is on pre-university schooling. Attention will be given to the measurement of quality as an integral component of world-class education, approaches to its planning, and discussions of relevant contemporary issues and trends.

Keywords World-class education · Basic education · Educational borrowing · Education quality · Educational achievement · PISA · TIMSS · Decentralization · School choice

Measuring world-class basic education

The introduction of international tests of educational achievement has greatly facilitated the borrowing and exchanging of educational content and education standards. The term “world-class education” has become widely associated with comparative results on international tests, which purport to measure certain aspects of educational quality. Indeed, the term is frequently used by those organizations, which have generated and presented the results of these tests.

Nations and sub-national political units, as well as international bodies, have created a number of instruments to measure the quality of their programmes. Two sets of tests, particularly PISA (Programme for International Student Assessment) and TIMSS (Trends

---

D. Adams (✉)
School of Education, University of Pittsburgh, Pittsburgh, PA, USA
e-mail: PakDAdams@aol.com

in International Mathematics and Science Study), have received wide international attention, highlighted national and international comparisons, and generated much educational debate. To a dramatic extent, these tests are redefining the meaning of quality of educational systems. Low or high PISA or TIMSS scores have not only led to analyses within the education sector, but have also stimulated political scrutiny and political debate. Scores on international tests and positive or negative comparisons with those of other countries have become the global substance for newspaper headlines, radio and television programmes, and internet exchanges. In little more than one decade, the interpretation of information, particularly that acquired from PISA and TIMSS, has resulted in significant impacts on the education dialogue and educational policies of many countries.

Primary characteristics of two of the most widely used international assessments (PISA and TIMSS) and one national assessment (NAEP—National Assessment of Educational Progress) are listed in Table 1.

World-class education as measured by PISA scores

Table 2 is a reproduction of the table summarizing key data from the OECD's 2009 PISA database (<http://pisa2009.acer.edu.au>). It presents average scores for 15-year-olds in each of the 65 OECD member countries and partner countries or economies that participated in the survey. These participants represent 90% of the world economy. Scores are presented for reading, math, and science, as well as scores on the subscales that were used to measure reading skills. Lightly shaded cells indicate values above the OECD average. Medium shaded cells indicate values below the OECD average. Darker shaded cells indicate values that are not statistically different from the OECD average.

Table 3 identifies the 10 highest and 10 lowest scoring participants in each of the three areas assessed: reading, math, and science.

Extensive data, in the form of summaries and of detailed tables and charts, are presented in the five volumes that comprise the 2009 PISA reports. For example, Korea and Finland, the countries with the highest overall reading performance on PISA 2009, as well as the partner economies, Hong Kong-China and Shanghai-China, also have some of the lowest variations in student scores.

The ten countries with the lowest scores are in the poorest parts of the world; however, the highest performing country and economy, Korea and Shanghai-China, respectively, both have per-capita GDPs below the OECD country average. There is a positive relationship between GDP per capita and educational performance; however, this predicts only 6% of the differences in average student performance across countries (OECD 2010a).

Gender differences in performance

PISA scores in 2009 show that the gender differences in reading performance were most pronounced: girls scored higher than boys on the reading scale in every participating country and economy. Across OECD countries, the difference was approximately the equivalent of an average school year's progress. Northern European countries (except Denmark) showed above-average gender gaps. In East Asian countries and economies, the gap tended to be slightly below the northern European average. In both Northern Europe and East Asia, the countries with the highest or second highest mean overall achievement score were also the countries with the widest gender gaps. Among countries with lower overall achievement scores, there was no pattern in terms of the gender gap (OECD 2010a).

Table 1 Assessments of quality education

Name of exam	National Assessment of Educational Progress (NAEP)	Trends in International Mathematics and Science Study (TIMSS)	Program for International Student Assessment (PISA)
Purpose	To assess U.S. students' specific knowledge, skills, and concepts in various subjects	To measure students' specific knowledge, skills, and concepts in mathematics and science	To evaluate educational systems based on assessment of "literacy" in reading, mathematics, and science
Distribution of testing	United States (national and state)	International	International
Grade/age of tested students	4 th , 8 th , and 12 th grade	4 th grade/year 5, 8 th grade/year 9	15 years
Year first administered	1969	1995	2000
Frequency of administration	Every other year (since 2003)	Every four years	Every three years
Method of administration	Paper and pencil	Paper and pencil	Paper and pencil
Subjects tested	Reading, mathematics, science, U.S. history, writing, civics, geography	Mathematics, science	Reading, mathematics, science with a different focus each cycle (i.e., reading 2000, math 2003; science 2006, reading 2009)
Type of questions asked	Demographic, multiple-choice, structured response	Demographic, multiple-choice, structured response	Demographic, multiple-choice, structured response
Developed/sponsored by	U.S. Department of Education	International Association for the Evaluation of Educational Achievement	Organization for Economic Co-operation and Development

Table 2 2009 PISA scores

	On the overall reading scale	On the reading subscales					On the mathematics scale	On the science scale
		Access and retrieve	Integrate and interpret	Reflect and evaluate	Continuous texts	Non-continuous texts		
Shanghai-China	556	549	558	557	564	539	600	575
Korea	539	542	541	542	538	542	546	538
Finland	536	532	538	536	535	535	541	554
Hong Kong-China	533	530		540	538	522	555	549
Singapore	526	526	525	529	522	539	562	542
Canada	524	517	522	535	524	527	527	529
New Zealand	521	521	517	531	518	532	519	532
Japan	520	530	520	521	520	518	529	539
Australia	515	513	513	523	513	524	514	527
Netherlands	508	519	504	510	506	514	526	522
Belgium	506	513	504	505	504	511	515	507
Norway	503	512	502	505	505	498	498	500
Estonia	501	503	500	503	497	512	512	528
Switzerland	501	505	502	497	498	505	534	517
Poland	500	500	503	498	502	496	495	508
Iceland	500	507	503	496	501	499	507	496
United States	500	492	495	512	500	503	487	502
Liechtenstein	499	508	498	498	495	506	536	520
Sweden	497	505	494	502	499	498	494	495
Germany	497	501	501	491	496	497	513	520
Ireland	496	498	494	502	497	496	487	508
France	496	492	497	495	492	498	497	498
Chinese Taipei	495	496	499	493	496	500	543	520
Denmark	495	502	492	493	496	493	503	499
United Kingdom	494	491	491	503	492	506	492	514
Hungary	494	501	496	489	497	487	490	503
Portugal	489	488	487	496	492	488	487	493
Macao-China	487	493	488	481	488	481	525	511
Italy	486	482	490	482	489	476	483	489
Latvia	484	476	484	492	484	487	482	494
Slovenia	483	489	489	470	484	476	501	512
Greece	483	468	484	489	487	472	466	470
Spain	481	480	481	483	484	473	483	488
Czech Republic	478	479	488	462	479	474	493	500
Slovak Republic	477	491	481	466	479	471	497	490
Croatia	476	492	472	471	478	472	460	486
Israel	474	463	473	483	477	467	447	455
Luxembourg	472	471	475	471	471	472	489	484
Austria	470	477	471	463	470	472	496	494
Lithuania	468	476	469	463	470	462	477	491
Turkey	464	467	459	473	466	461	445	454
Dubai (UAE)	459	458	457	466	461	460	453	466
Russian Federation	459	469	467	441	461	452	468	478
Chile	449	444	452	452	453	444	421	447
Serbia	442	449	445	430	444	438	442	443
Bulgaria	429	430	436	417	433	421	428	439
Uruguay	426	424	423	436	429	421	427	427
Mexico	425	433	418	432	426	424	419	416
Romania	424	423	425	426	423	424	427	428
Thailand	421	431	416	420	423	423	419	425
Trinidad and Tobago	416	413	419	413	418	417	414	410
Colombia	413	404	411	422	415	409	381	402
Brazil	412	407	406	424	414	408	386	405
Montenegro	408	408	420	383	411	398	403	401
Jordan	405	394	410	407	417	387	387	415
Tunisia	404	393	393	427	408	393	371	401
Indonesia	402	399	397	409	405	399	371	383
Argentina	398	394	398	402	400	391	388	401
Kazakhstan	390	397	397	373	399	371	405	400
Albania	385	380	393	376	392	366	377	391
Qatar	372	354	379	376	375	361	368	379
Panama	371	363	372	377	373	359	360	376
Peru	370	364	371	368	374	356	365	369
Azerbaijan	362	361	373	335	362	351	431	373
Kyrgyzstan	314	299	327	300	319	293	331	330

Statistically significantly above the OECD average
 Not statistically significantly different from the OECD average

Statistically significantly below the OECD average

Source: OECD PISA 2009 database

Table 3 Countries/economies with highest and lowest scores on the 2009 PISA

Top 10: Reading		Top 10: Math		Top 10: Science	
Shanghai-China	556	Shanghai-China	600	Shanghai-China	575
Korea	539	Singapore	562	Finland	554
Finland	536	Hong Kong-China	555	Hong Kong-China	549
Hong Kong-China	533	Korea	546	Singapore	542
Singapore	526	Chinese Taipei	543	Japan	539
Canada	524	Finland	541	Korea	538
New Zealand	521	Liechtenstein	536	New Zealand	532
Japan	520	Switzerland	534	Canada	529
Australia	515	Japan	529	Estonia	528
Netherlands	508	Canada	527	Australia	527
Lowest 10: Reading		Lowest 10: Math		Lowest 10: Science	
Tunisia	404	Argentina	388	Colombia	402
Indonesia	402	Jordan	387	Montenegro, Tunisia, Argentina (tie)	401
Argentina	398	Brazil	386	Kazakhstan	400
Kazakhstan	390	Colombia	381	Albania	391
Alb Albania	385	Albania	377	Indonesia	383
Qatar	372	Indonesia, Tunisia (tie)	371	Qatar	379
Panama	371	Qatar	368	Panama	376
Peru	370	Peru	365	Azerbaijan	373
Azerbaijan	362	Panama	360	Peru	369
Kyrgyzstan	314	Kyrgyzstan	331	Kyrgyzstan	330

Source: Adapted from OECD (2010a), p. 15

In mathematics, boys generally outperformed girls. Of all the 65 participating countries and economies, 35 showed an advantage for boys and 5 showed an advantage for girls. “For the countries with an advantage for boys on the mathematics scale, gender differences vary widely, even if they tend to be much smaller than corresponding gender differences observed on the reading scale” (OECD 2010a, p. 137). In science, gender differences tend to be small, “both in absolute terms and when compared with the large gender gap in reading performance and the more moderate gender differences in mathematics. In most countries, differences in the average score for boys and girls are not statistically significant” (OECD 2010a, p. 154).

According to the OECD, “higher achievement in PISA plays a role in predicting transition from and to education, work and inactivity. Notably, high PISA scores made a substantial contribution to completion of secondary school and participation in at least some post-secondary education even after taking other student background characteristics into account”. Furthermore, “access to and persistence in post-secondary education and choice of field of study at university are strongly related with higher PISA achievement and some student background characteristics” (OECD 2010b, p. 12).

Perspectives on PISA

As might be expected, the body of analyses and criticism of PISA results is extensive and continues to grow. Scholars from many countries have recognized the value of the

assessment but have also voiced many criticisms and cautions for those who refer to PISA findings.

Dohn (2007) and Bodin (2005) argue that PISA does not measure what it purports to measure, due to basic conceptual or methodological issues.

Drawing from a review of a number of criticisms of PISA focusing on the 2000–2006 assessments, Mortimore (2009) identifies a number of methodological issues. In particular, he cites Goldstein (2004), who questions the reliance on cross-sectional, rather than longitudinal, sampling and the inference of causality from the findings. Sampling also has been criticized for possible lack of representation, with some countries even attempting to increase the proportion of more able students taking the test. However, the larger issue is students with learning difficulties or students who are not fluent in the native language not being represented (Hörmann 2009).

Cultural and translation issues offer a challenge since students from different cultural backgrounds may not interpret common testing questions in the same way. Furthermore, ideas will need to be translated differently into different languages; moreover, some students may not be tested in their native language either because there is more than one language of instruction or because they are immigrants (Mortimore 2009). However, it should be noted that improvements have been made across the methodological spectrum in each successive wave of PISA.

The lack of involvement of teachers in the assessment process has been criticized. OECD has not collected data from teachers in tandem with the administration of PISA, although data have been collected from principal, student, and parent questionnaires. In addition, in 2008, OECD initiated the Teaching and Learning International Survey (TALIS), as “the first internationally comparative perspective on the conditions of teaching and learning” (OECD 2009, p. 3). Although this survey does not involve teachers directly in PISA, it does signify recognition of their performance. However, the lack of direct involvement of teachers in PISA continues to be questioned.

Extensive attention has been focused on the use that has been made of the PISA findings. The priorities given to a limited number of skills, e.g., reading, mathematics, and science, have been said to resemble OECD’s priorities—sciences, technology, and market liberalism—and encouraged governments to adopt an overly economic approach (Avenstrup 2005).

The focus on a limited number of skills also may lead to dividing the curriculum into “core” subjects and other subjects that consequently may or may not be important. Sahlberg (2011) comments that international tests “focus on areas too narrow to capture the whole spectrum of school education, and thus ignore social skills, moral development, creativity, or digital literacy as important outcomes of public education” (p. 9).

Levin, in his discussion of the importance of non-cognitive skills later in this issue, suggests that PISA tests are useful but limited and could be significantly improved. He argues that schools play a far more important role than just what is measured by international test scores.

Finally, a continuing concern is that the results are often used by media, politicians, and educators merely in terms of “rank ordering” countries rather than as a basis for policy dialogue and a better understanding of the causes of observed differences in performance. The extensive materials presented in the complete report are largely ignored, rather than being used as a basis for policy dialogue and a better understanding of the causes of observed differences in performance. Figazzolo (2009) argues that the emphasis on the league tables often leads to the use of national testing systems similar to PISA, to more scrutiny of teaching procedures, and to linking teachers’ performance and pay to students’

test scores. This trend is dangerous because it changes teaching and learning and the overall meaning of education. Ravitch (2012) points out that rewarding teachers for high student scores and simultaneously urging them not to “teach to the test” are contradictory.

A distinction may be made between the professional task of test construction and the interpretations of its usage and value. It is possible, for example, to admire the former and despair at the latter. Challenging questions persist. How well have these new data been integrated into planning and decision processes? What continues or has emerged as the defining nature of the current public and professional educational discourse on quality and world-class basic education?

Planning and implementing world-class basic education

Given the development of international tests which claim to measure the ability of youth to cope with many of life’s challenges, some countries or sub-national administrative units that are dissatisfied with the quality of their own national test scores are examining various pathways to educational reform. One approach has been to seek models among the countries with high scores on PISA or other appropriate tests. Thus, educational reforms or a major component of the reforms may focus essentially on a process of using educational standards borrowed from countries with high PISA scores. One example is provided in this issue by Gottlieb, who describes in detail how international test scores have become a central focus in the development of a comprehensive plan to develop a world-class education system for the U.S. state of Ohio.

Traditionally, most national education policies and plans have been established by ministries of education or other empowered national units. This tradition is continued in many countries. However, especially in democratic societies, there also has been general movement toward decentralization of decision making in a range of policies including those directly associated with education. The trend has been encouraged by various international bodies, including the United Nations.

Issues and questions persist: Will the establishment of national educational testing strengthen or reverse this trend? Who decides how the information provided by PISA and other tests is to be used? Who decides? Who decides who decides? Should politicians, national-level administrators, and experts be the only ones who make significant decisions choosing the plans and processes of implementation? Who should have a voice in deciding on acceptable standards, benchmarks, and indicators: the state, the province, or the community? What should be the involvement of local administrators, teachers, and parents?

Decentralization and local participation

The new data from international tests and their aggressive use in decisions may appear to provide a clear and simple path to educational improvement. General categories of reasons commonly given for decentralization and greater local participation may include: (1) to enhance efficiency; and (2) to promote democratic decision-making. This approach contrasts with externally defined models of development with their reliance on external experts, and may be viewed as a move toward a new paradigm of planning and change, which is less positivistic, less reductionist, and less top-down. Local knowledge and local action are expected to promote accountability and efficiency in using local resources. Thus,

in principle, this model becomes the key to democratic decision making through empowering teachers, administrators, parents, and other citizens.

Nevertheless, participation is a core element of democratic society. Participation may mean various processes, e.g., doing, thinking, talking, feeling, belonging; it implies membership in social communities and active involvement in social enterprise. Participation, at least by its advocates, has been frequently linked to good governance and social development. Callon, Lascoumes, and Yannick (2009) argue that “[...] delegating the production of knowledge to specialists, who are granted an almost exclusive monopoly, [...] purges political debate of all uncertainty regarding possible states of the world”. Furthermore, [...] “experts are practiced in evasive answers” (p. 17).

Dialogue helps individuals extend their understanding of the planning and decision processes. However, do officials, who may have already had expert advice, really want further advice or recommendations? At issue, Callon et al. conclude, is that technical subjects (presumably including those associated with many educational reforms) cannot be left only to political institutions. Their recommendation is to build hybrid forums, e.g., consensus conferences, to ensure that non-specialists can give their views on all subjects.

More typically, in developing and implementing new education policies, actions are taken by bureaucrats to inform citizens rather than to involve them. Policy makers and senior bureaucrats from the center may be highly successful in informing the lower echelon administrators and the public of the goals and plans for the educational reforms being initiated. They have a wide range of communication technologies for this task. They may have had less experience and less inclination to generate debate. Involving, informing, and learning from local citizens is a greater challenge—and often a challenge not undertaken.

Planning knowledge is shaped by the priorities, resources, and preferences of beneficiaries. The persons who expect to gain or lose by localized decision-making may be capable of affecting the outcomes of new policies and programmes. In addition, using educational and pedagogical data and information on schools, pupils, and teachers, as well as examining and understanding the environmental and organizational contexts of schooling and non-formal educational and training efforts, may be at the core of strategic and comprehensive educational planning.

Communities and villages may become focal points for improvements in quality and equity in planning and implementing change in education. Globalization, some argue, by reducing the power of central governments, may further enhance the power of local communities. Additionally, the current focus of bilateral and multilateral agencies on poverty reduction and social inclusion may give further attention and vitality to community-driven development.

Localized participation in decision processes, even with the imprimatur of powerful international agencies such as the World Bank and certain expressed popularity by governments of many industrialized countries, may encounter severe constraints in practice. The accomplishments and speed of planned educational change depend on the readiness for change. Readiness, in turn, depends on answers to such questions as these:

- Which organizations and actors accept the efficacy of participation?
- Can local participatory actions coexist with local power structures?
- What are the organizational capabilities for the sustained empowerment of marginalized groups?

A realistic and politically more acceptable model of educational planning is likely to have aspects of both centralization and decentralization. Through policies, laws, and allocation of resources, central governments establish, monitor, and assess national

systems of education. Local planning and management teams generate local knowledge and information, and coordinate the educational involvement of local organizations. Outcomes of the planning process should include a clear decision process for reviewing and building consensus about major educational innovations and interventions, and flexible multi-year educational plans which provide incentives for initiating innovations.

An effective localized management system of education is probably more difficult to develop and sustain than a good and efficient centralized system. Even if national policy makers, international aid actors, and local leaders can broker local consensuses on educational priorities to utilize participatory approaches, such agreements may conceal a variety of aspirations and frustrations. However, citizens and experts have demonstrated that they can learn to plan together to develop workable, effective change.

Taking an independent path to high achievement

Several countries have succeeded in developing basic education programmes worthy of the label “world-class”. One is South Korea. The truly remarkable educational and economic progress achieved by South Korea in a few decades is described by Chong Jae Lee and his colleagues later in this issue.

Table 4 describes the independent path Finland took to attain a highly respected educational system; it compares key elements of what Pasi Sahlberg calls the Global Educational Reform Movement (GERM) with Finnish educational policies. Finland provides an example of an educational system which appears to have largely acted independently, with no particular external model, but has achieved well by its own standards and on PISA scores. Sahlberg (2011) attributes much of Finland’s education success to the teachers. He concludes: “Finland is perhaps the only nation that is able to select its primary school teacher-students from the top quintile of all high school graduates year after year” (p. 76).

Continuing concerns

Other issues could be raised. For example, the popular but vague notion that higher test scores (particularly in math and science) lead directly to the kind of workforce needed globally in the 21st century is currently little more than a hypothesis. The future paths from school to work are as yet uncharted. The future could well see a wide variety of collaborative relationships between the school, other learning opportunities, and the evolving workplace.

Is power now being recentralized and defended as necessary for attaining quality? Is this trend a rejection of a localized, participatory model of educational planning and decision making? Is the centralized, rationalistic, bureaucratic model returning to favour?

National and international tests have their advocates and their critics. Even as the instruments improve, some differences of opinion as to their validity and utility are likely to continue. There are questions and issues which need to be addressed by educators, parents, and other citizens in their efforts to plan, monitor, and improve education quality. However, there are few indisputable facts in making many major education decisions. In education, and perhaps in much of social sciences, we innovate, we monitor our effort, we choose, and we perpetuate the cycle.

Table 4 Comparison of key elements of GERM with Finnish education policies since the early 1990s

Global Education Reform Movement (GERM)	The Finnish Way
<i>Standardizing teaching and learning</i> Setting clear, high, and centrally prescribed performance expectations for all schools, teachers, and students to improve the quality and equity of outcomes. Standardizing teaching and curriculum in order to have coherence and common criteria for measurement and data.	<i>Customizing teaching and learning</i> Setting clear but flexible national framework for school-based curriculum planning. Encouraging local and individual solutions to national goals in order to find best ways to create optimal learning and teaching opportunities for all. Offering personal learning plans for those who have special educational needs.
<i>Focus on literacy and numeracy</i> Basic knowledge and skills in reading, writing, mathematics, and the natural sciences serve as prime targets of education reform. Normally the instruction time for these subjects is increased.	<i>Focus on creative learning</i> Teaching and learning focus on deep, broad learning, giving equal value to all aspects of the growth of an individual's personality, moral character, creativity, knowledge, and skills.
<i>Teaching prescribed curriculum</i> Reaching higher standards as a criterion for success and good performance. Outcomes of teaching are predictable and prescribed in a uniform way. Results are often judged by standardized and externally administrated tests.	<i>Encouraging risk-taking</i> School-based and teacher-owned curricula facilitate finding novel approaches to teaching and learning, and encourage risk-taking and uncertainty in leadership, teaching, and learning.
<i>Borrowing market-oriented reform ideas</i> Sources of educational change are management/administration models brought to schools from the corporate world though legislation or national programmes. Such borrowing leads to aligning schools and local education systems to the operational logic of private corporations.	<i>Learning from the past and owning innovations</i> Teaching honors traditional pedagogical values, such as teachers' professional roles and relationships with students. Main sources of school improvement are proven good education practices from the past.

The current discourse

It is paradoxical that at a time when so much emphasis is placed on inclusive schooling and the so-called “inclusive society”, social exclusion appears to be more the norm than social inclusion. (Magalhães and Stoer 2009, p. 257)

Globalization has happened before: it is neither only new nor only old. It does not fully exist, it is still developing. (Walby 2009, p. 44)

The search for higher education quality has become increasingly popular for many nations as they try to further develop the institutions necessary to participate in globalized societies and to compete in a knowledge-based economy. The search may be driven by a belief that such status is required for national economic growth, and for the creation, duplication, and utilization of new technologies. However, the possible bases for choices go well beyond attaining high scores on international tests. The meaning of world-class as excellence could, of course, be viewed in terms of a variety of broader educational goals and outcomes. Further, it may include persons of all ages.

Globalization and the demands of the knowledge economy

Before venturing further into the analysis of global meanings for basic education, some caution should be expressed about many of the global generalizations. First, we learn from

Cohen and Easterly (2009) that some of the “big” pictures painted by economists may be suspect. Referring to the popular discussion of national and global economic growth, they conclude that “...there is no consensus on ‘what works’ for growth and development [...] and that ‘thinking big’ on development and growth is in crisis. The ‘big’ triggers for economic growth have not been shown to work, either because they in fact did not work or because it was impossible to demonstrate their impact persuasively. The ultimate goal of development research, i.e., a plausible demonstration of what has worked in the past and what might work in the future, remains elusive” (p. 1).

This is strong language, considering the sizeable body of publications referring to the many global efforts at economic growth and the continuous proposed interventions to identify the necessary policies (including educational policies) to realize economic goals. Could a similar statement be made in reference to what works for globalized education? An education meeting global standards would seem to promise great national and individual rewards. However, in the global search for education quality, questions persist. In considering educational decisions, can we think both big and small? Should our education research agendas be reviewed?

What are the education demands of the knowledge economy?

In much of today’s literature, globalization refers to the disappearance of borders in terms of the transmission of information, goods, and services. Thus, the current discussions of knowledge and skills needed are related to the ability to become or remain competitive in a globalized economy. It seems that we are continually being told, both in the professional literature and the mass media, that we must hasten to build a world-class educational system to meet the demands of an evolving knowledge economy.

Based on the perspective that the production of human capital through education is a major contributor to the economy, Walby (2009) identifies three kinds of knowledge economy:

First is high-technology manufacturing, including aerospace, computers, electronics-communication, pharmaceuticals, biotechnology, and scientific instruments. Second are the knowledge-intensive services, including water and air transport, post and telecommunications, financial intermediations, real estate, computer services, research and development services, education, health and social work, recreational, cultural, and sporting activities. A third kind lies in between and is associated with information, including publishing, printing and the reproduction of recorded media, post and telecommunications, computing-related activities including software, and recreational, cultural and sporting activities. (p. 126)

The first kind of knowledge—high-technology manufacturing—emphasizes science and technology and is based on machines processing knowledge (“a machine-based conception of innovation”) and employs a very small percentage of the work force (2% in the UK). The second type, knowledge-intensive services, is based on people (rather than machines) possessing knowledge and employs a very large percentage of the population (42% in the UK). The third type, e.g., information, has elements of both knowledge-intensive and machine-based knowledge, and also employs a small percentage of the population (4% in the UK). Walby argues that the information sector (third type) is usually taken as the emblem of the knowledge economy. Are the proponents of “world-class” education thinking only of this third version of knowledge economy? This type of knowledge economy employs very few workers. The distinction would seem to be critical for the

people and institutions making educational decisions. Perhaps our current assumptions about the composition of the work force and educational demand in global economies need to be reexamined.

Making the most effective use of technology in education

Technology in the past has left a trail of unfulfilled promises. Is it possible to think both small and big? New technologies suggest great potential not only for the creation of a few elite world-class universities and for small subgroups of populations, but also for the provision of new learning opportunities in basic education for global populations. Such a goal remains far from being attained. Beyond devotion to the current uses of technology for educational change there is an increasing interest in both thinking big and thinking small. Of course, certain populations and individuals will still seek to separate themselves from the masses by building elite educational programmes and institutions. The wealthy will continue to seek to control those institutions that separate them from the rest of the population. However, at minimum, the challenge of national educational policy is to maintain both modest global educational success and to extend at the national and local levels major efforts toward positive global change.

What must be sacrificed? How can we make the most effective use of technology to support teachers? With only the available information, how can parents learn to make more relevant choices related to education? In the evaluation of educational systems and programmes which, if any, of the available tests should be used? How can local and national education decisions be better coordinated? Is there a vision of world-class basic education that can be appropriate for all children and youth? Who knows the future? Some of the difficulties and uncertainties in the processes of educational change are well known; many are yet to be discovered.

Choices in provision of education in globalizing societies

School choice suggests the introduction of market mechanisms in education. Conceptually, school choice is often linked historically to “The Role of Government in Education”, a seminal article by the economist Milton Friedman (1955). Its proponents argue that school choice programmes, with a need to be competitive, offer higher quality and more individualized instruction. The remarkable global growth of school choice programmes extends to two-thirds of OECD countries. Pauline Musset (2012) offers an introduction to the large body of literature on school choice. Table 5 summarizes some of the research.

The research summarized in Table 5 suggests that, when given school choice, parents may consider a number of factors. Further, they either do not recognize standard measures of quality or they find other criteria more appealing. Bast and Walberg (2004) found that the majority of parents were incorrect in their assessment of schools’ academic quality: only 44% were satisfied with the highest performing schools and 15% were highly satisfied with the worst schools. A study in Chile also found that parents have tenuous sources of information and are largely incorrect when asked to identify high-quality and low-quality schools (Gauri 1999). In New Zealand, Woodfield and Gunby (2003) concluded that the parents’ assessments of “high quality” were probably based on the socio-economic characteristics of the students, rather than an actual academic quality.

Parents seek what they assume to be the best education for their children. Included in this choice could be a variety of educational, economic, and social reasons. The reasons vary between individuals and over time but may include religious views, linkages to

Table 5 Overview of existing research on the impact of increased parental choice on segregation by ability, socio-economic status (SES), and ethnicity

Study	Country studied	School choice configuration	Scope	Methodology	Findings
Ladd, Fiske, and Ruijs (2011)	Netherlands	Open enrolment	Examines patterns and trends of segregation of immigrant students between 1997 and 2005 in primary schools in 27 cities.	Isolation index (measure of the extent to which disadvantaged immigrant students are in schools with other students like themselves), dissimilarity index (measure of the extent to which immigrant students are unevenly distributed across schools), and segregation index (a gap-based measure of segregation that measures the extent to which schools are unbalanced).	Migrant students are highly segregated by schools, and this segregation has increased over the 9-year period, despite little or no increase in the proportion of migrants. Close to 80% of migrant students are in schools where migrants constitute over 50% of the student body.
Watson and Ryan (2009)	Australia	Universal voucher system	Study of two cohorts of students (from 1975 and 1998), from two national longitudinal surveys.	Examines data on the socio-economic background of private school students in the mid-1970 s and the late 1990 s; assesses the impact of changed enrolment patterns on schools in public and private sectors.	Since the voucher system was introduced, segregation by income level between public and private schools has increased: public schools have a higher share of low-SES students than private schools, compared to the 1970 s, as students who transferred from public to private schools tended to be from the top half of the SES distribution.
Ladd and Fiske (2001)	New Zealand	Open enrolment	Study of the distributional effects of parental choice in Auckland, Wellington, and Christchurch, using data from 1991 to 1997.	Regression analysis of government data on the composition of schools to measure the sorting of students by ethnic and socioeconomic status.	Stratification by minority status and by SES level increased over the period. Parents are moving their children from schools where the majority of the student body is from lower-SES and ethnic minority origins, to schools with more advantaged student composition.

Table 5 continued

Study	Country studied	School choice configuration	Scope	Methodology	Findings
Woodfield and Gunby (2003)	New Zealand	Open enrolment	Examine the results of Ladd and Fiske (2001).	Focus on the impact of open enrolment on student achievement and sorting of students.	No evidence that the overall student achievement level has improved; the dispersion of performance across schools has increased.
Hsieh and Urquiola (2006)	Chile	Universal voucher system	Panel data for about 150 municipalities, from 1982 to 1988.	Regression analysis to measure the effects of school choice on educational outcomes, particularly on school productivity and sorting by ability.	No evidence that choice improved average educational outcomes. However, evidence that the voucher programme led to increased sorting, as the most successful public school students left for private schools.
Elacqua (2009)	Chile	Universal voucher system	Analysis of dataset from the Chilean Ministry of Education, with student level characteristics for public and voucher schools.	Regression analysis to see what determines the percentage of disadvantaged students in a school, and to study the segregation among public and private schools, and also among private schools.	Public schools are more likely to serve disadvantaged students than private schools, and private voucher schools “cream skim” off high-income and high-ability children from public schools, as parents seek schools in which their children’s peers are of similar SES.
Söderström and Uusitalo (2005)	Sweden	Open enrolment	Database from the Institute for Labor Market Policy Evaluation that covers all students; it included information on students’ gender, age, immigrant status, residence, grades, parental income, and education.	Longitudinal analysis of 4 cohorts of students (1998 to 2001) to study the distribution of students over schools as a consequence of the introduction of open enrolment in Stockholm. Segregation is measured before and after 2000 through a dissimilarity index, along three dimensions: ability, immigrant status, and family background.	The composition of students across schools has changed, as children are now much more segregated by ability. Also, segregation between migrant and native students has increased since 2000.

Table 5 continued

Study	Country studied	School choice configuration	Scope	Methodology	Findings
Böhlmark and Lindahl (2007)	Sweden	Universal voucher system	Longitudinal panel of students, from 1988 to 2003, with student and parental characteristics.	Differences-in-differences econometric approach, to assess the impact of the 1992 reform and to study the impact of school choice on segregation between schools along poverty and ethnic lines.	More segregation for migrant students since the reform, as parents with more education tend to choose private schools for their children.
Burgess et al. (2005)	England	Inter-district school choice	Used the Pupil Level Annual School Census dataset, part of the National Pupil Dataset. Analysed the cohort which transferred to secondary school in 1997 and took its final exams in 2002.	Dissimilarity index to examine the different degree of sorting of students across schools relative to their sorting across neighbourhoods. Student sorting is characterized across three dimensions: ability, ethnicity, and disadvantage.	Relatively low segregation by ability and poverty, but high ethnic segregation. The more schools available in a neighbourhood, the more segregated schools are.
Jacott and Maldonado (2006)	Spain	Government-dependent private schools	Country-wide statistical information about student enrolment by type of school.	Statistical analysis to see if the presence of government-dependent private schools has increased the segregation of migrant students in schools.	Increasing polarization between the student body composition of public schools and <i>centros concertados</i> (CCs): 82% of immigrant students in Spain attend public schools and only 18% attend CCs; in 2003, CCs educated 31.3% of all Spanish students.
Zimmer et al. (2009)	United States	Charter schools	Longitudinal, student-level data from Chicago, San Diego, Philadelphia, Denver, Milwaukee, Ohio, Texas, and Florida.	Examined the population of students who are transferring to charter schools, to provide evidence on the effects of such schools on ethnic stratification. Compared the composition of the sending (traditional public) and the receiving charter school of those students transferring to charters.	Transfers to charter schools tend to increase ethnic segregation in Philadelphia and in Texas, when compared to the student body composition of the traditional public schools of the area; in Chicago, they reduce it.

Table 5 continued

Study	Country studied	School choice configuration	Scope	Methodology	Findings
Riedel et al. (2009)	Germany	Public denominational schools	2007 data from Wuppertal, in North-Rhine-Westphalia.	Statistical analysis, using individual-level data from schools, on their student body and the neighbourhood. Probit regression to determine the characteristics of students who choose a different school than their local one.	As disadvantaged families tend to send their children to their local school, more advantaged parents make a segregating choice, and send their children to a denominational school. Result: high level of segregation in schools, exceeding the level of residential segregation.
Schindler (2007)	Denmark	Open enrolment	Data from each of the 50 municipalities of the Copenhagen region.	Calculated index of dissimilarity for each migrant group, across municipalities and across schools.	Copenhagen combines a moderate residential segregation with high level of school ethnic segregation. Conclusion: school choice, particularly private school choice, leads to these high levels of polarization.

Source: Musset (2012)

community, and the socio-economic status of the other students. Research also shows that parents prefer schools serving families with values similar to their own. For example, in the United States, when families move to a new area, they often try to choose a home located in a community that has a good reputation for its schools.

The flight of higher-SES students from schools with students of lower SES or higher concentrations of migrants can have a negative effect on equity. As disadvantaged families tend to send their children to their local school, more advantaged families make segregating choices; as a result, the level of segregation in schools may be high and may exceed the level of residential segregation.

Enhanced school choice has been justified as a strategy for improving educational opportunities. This is based on the idea that disadvantaged parents are trapped by circumstances in bad schools, so that providing them a way out of these schools, for example, through voucher schemes or open enrolment, can provide them chances to put their children into better schools. But substantial empirical evidence shows that this is not the case in practice, even in the case of school choice programmes that were explicitly designed to remedy inequalities. The parents who exercise choice are the ones who are relatively more educated, and, within the low-income category, those who have relatively higher incomes. These parents are more involved in their children's schooling than the parents who do not participate in these programmes. Two of the most important tasks related to school choice are to: (1) study the impact of choice on the sorting and stratification of students across schools; and (2) assess how students allocate themselves among schools when allowed to choose schools freely.

The concern for school choice is demonstrated politically in several countries. In many democratic societies, there are two general policy choices, or categories of policy choices, which are sometimes labeled (1) choice and competition; or (2) equity and cooperation. A discourse over these options can be found by examining various countries. These choices tend to be viewed as general policy alternatives. The significance of this choice has been well demonstrated in the recent Korean educational history. In Korea, the Roh Moo-hyun administration (2002–2007), referred to as a “participatory government”, proposed several educational initiatives to strengthen public education, including the implementation of after-school programmes. The subsequent Lee Myung-bak government also declared its own educational initiatives to enhance public education, including the development of a diversified high school system and a plan to increase autonomy in the college admissions system.

The Lee government states that its governing principles for education are choice and competition. This approach emphasizes autonomy, accountability, and diversity in education, in contrast to the Roh government, which placed greater emphases on equity in education under the control of the center and local governments (Lee 2012).

The importance of teachers

No subgroup of the population has a monopoly of control or influence on children or adults. However, in seeking high quality basic education the crucial importance of teachers is being recognized. With parental, administrative, and community support, talented teachers can create a learning environment that maximizes the educational opportunity of each student. Creating and rebuilding this combination over time is a continuing challenge, yet one that is coming to the forefront in many countries seeking to participate successfully in a globalized environment.

One of the positive effects of the attention to PISA scores has been to bring a focus on the importance of teachers and their role in the creation of world-class basic education systems. Those education systems with high PISA scores that are often identified as “world-class” may differ in some respects. However, they are similar in the attention they give to the importance of their teaching force in attaining high quality (Adams 2010; Lee 2012; Sahlberg 2011). The OECD’s (2010a) report on the 2009 PISA concludes that “[...] the quality of an education system cannot exceed the quality of its teachers and principals, since student learning is ultimately the product of what goes on in classrooms” (p. 6). The report further suggests that education systems, like corporations, need to pay attention to five factors: (1) the pool from which they recruit; (2) how they recruit; (3) the kind of initial training their new teachers receive; (4) what kind of mentoring and ongoing professional development they receive; and (5) how their compensation and rewards are structured.

As noted earlier, the development of TALIS is a response by OECD to the increased recognition on national and international policy agendas of the importance of teachers and teaching. “Effective teaching and teachers are key to producing high performing students” (OECD 2011, p. 5). Findings from the 2008 survey are now being used in several countries, including Norway and Australia, in programmes directed toward professional development and improvement of teaching quality (OECD 2011). In addition, the survey scheduled for 2013 will provide participants with the opportunity to conduct TALIS in schools that also participated in PISA 2012.

Developing and maintaining an effective teaching force for basic education is a challenging task. Much debate continues. What are the qualifications for a good teacher? Are competence in subject matter and teaching methods sufficient? Do qualities such as motivation, and dedication to teaching and to the profession count? How can teachers be made more effective?

Later in this issue, Chong Jae Lee and his colleagues point out that in Korea nearly all families are deeply concerned about the quality of the education their sons and daughters receive. Further, for several years, the Korean government has supported national research and development institutes focused on a wide range of issues related to education quality. Pasi Sahlberg (2011) has described teachers as the key to Finland’s significant educational achievements.

The classrooms and other school-sponsored activities, in addition to helping students learn the core cognitive skills, may also provide students with opportunities to learn those non-cognitive skills so important for social and work environments. Further, talented teachers may help students learn metacognitive skills.

Metacognition has been described as a self-learning process, or learning how to learn. For example, talented math and science students learn to recognize typical problems. This recognition leads to a method of problem solution. Flavell (1976) offers this definition of metacognition:

Metacognition refers to one’s knowledge concerning one’s own cognitive processes or anything related to them, e.g., the learning-relevant properties of information or data. For example, I am engaging in metacognition if I notice I am having more trouble learning A than B; if it strikes me that I should double check C before accepting it as fact. (p. 232)

Beyond the concern for international test scores

In many developing countries, seeking world-class or merely high quality basic education may be seen as unattainable. Not so long ago, “primary schooling for all” was but a dream

in many countries. Extensions of schooling have allowed many girls and boys now to consider secondary and even possibly higher education. However, although UNESCO has long recommended “education for all”, that goal has yet to be fulfilled.

Narayan and Petesch (2002) examine the educational needs of poor populations in several countries and report that large populations continue to remain outside of positive change. The conditions, frustrations, and hopes of the vast global population of the poor have only begun to be documented. Their work, and that of their research teams, offer new important insights into the lives and educational opportunities of the large populations of poor people. Such new understandings may further lead to a range of fruitful new strategies.

Their research describes the world as poor people experience it. They tend to view the state as self-serving, with pervasive corruption. They may seek education for their children but tell of the long distances to schools, the poor quality of school buildings, lack of equipment, and overcrowded conditions. They further suggest that, even when some schooling is available, it is unattainable because of “unaffordable fees and bribes associated with keeping children in school” (p. 100).

Is the school still the central socializing institution and legitimating educational narrative? Not in the schools where Narayan and Petesch went. The decades-long entry of new technologies, which has led to great expectations for major effects on hard-to-reach populations, has been generally disappointing thus far. However, the application of the new communication technologies suggests potential for provision of new learning opportunities to global populations. A range of new strategies may follow. However, a consensus seems to be building that much of the answer is already known to this question: How can you develop world-class basic education? Technology has the potential for significant support. Most fundamental, however, for developing and maintaining quality education, are talented and committed teachers, a supporting family, and a larger supporting environment.

Also, for some countries, several education programmes which are outside the reach of PISA might be worth considering. “Alternative schools” represent a different model of learning and have demonstrated considerable success. These schools usually follow the prescribed national curriculum but often use non-traditional pedagogy. Such schools tend to have close relationships with the community and make extensive use of local or community resources. Findings from long-term research studies indicate that alternative schools do well in terms of such indicators of quality as retention and completion, as well as in academic achievement as measured by tests. (See, for example, Farrell and Hartwell 2008; Farrell and Mundy 2008).

A broader perspective on globalization and the needed knowledge and skills could mean that an important component of globalization is the disappearance of borders in terms of issues related to poverty, environment, disease, and security. Is the education that is needed to address these issues assumed to be embedded in that which is appropriate for a global economy? Perhaps viewing world-class education or quality education only in terms of the requisites of a knowledge-based economy is too limited a way of thinking about knowledge. What kinds of knowledge do we need to generate both economic security and solidarity? Should world-class or quality education support only a knowledge economy or should it support a knowledge society? Or both?

Finally, the current discourse revolves around questions such as these: Who is involved in advocating the key role for testing in constructing quality education? Whose voices are being heard? Whose are not? Whose discourse is it that results in particular standards, benchmarks, and indicators?

Given the current views of the complexity of the future, how would we design basic education? What basic inputs would we consider? How would we distinguish levels of the system? Would the system look like the current system of Finland? Or Korea? Or a new model as yet unknown? Would the UN, the OECD, or another international body focus on educational networks? Would we evaluate it using one metric and not a set of international goals? The new technologies and insights will not only impact elite higher education but may also impact all levels of education. Dare we at least consider world-class basic education for all?

References

- Adams, D. (2010). A comparative perspective on the development of Korean education. In C. J. Lee, S. Kim, & D. Adams (Eds.), *Sixty years of Korean education*. Seoul: Seoul National University Press.
- Avenstrup, R. (2005, June). *Retrospect and prospect for constructivist research in educational technology*. Paper presented at the International Conference on Curriculum Reform and Implementation in the 21st Century, Istanbul.
- Bast, J. L., & Walberg, H. J. (2004). Can parents choose the best schools for their children? *Economics of Education Review*, 23(4), 431–440.
- Bodin, A. (2005, October). *What does PISA really assess? What does it not? A French view*. Paper presented at the joint Finnish-French conference, Teaching Mathematics: Beyond the PISA Survey, Paris.
- Böhlmark, A., & Lindahl, M. (2007). *The impact of school choice on pupil achievement. Segregation and costs: Swedish evidence*, Discussion Paper No. 2786, Bonn: The Institute for the Study of Labor (IZA).
- Burgess, S., et al. (2005). *The impact of school choice on sorting by ability and socio-economic factors in English secondary education*. Working Paper, University of Bristol.
- Callon, M., Lascoumes, P., & Yannick, B. (2009). *Acting in an uncertain world: An essay on technical democracy* (G. Burchell, trans.). Cambridge, MA: MIT Press.
- Cohen, J., & Easterly, W. (Eds.). (2009). *What works in development: Thinking big and thinking small*. Washington, DC: Brookings Institution Press.
- Dohn, N. B. (2007). Knowledge and skills for PISA: Assessing the assessment. *Journal of Philosophy of Education*, 41(1), 1–16.
- Elacqua, G. (2009). *The impact of school choice and public policy on segregation: Evidence from Chile*. Centro de Políticas Comparadas de Educación: Universidad Diego Portales, Santiago, Chile.
- Farrell, J., & Hartwell, A. (2008). *Planning for successful forms of alternative schooling: A possible route to success in achieving EFA*. Paris: UNESCO International Institute for Educational Planning.
- Farrell, J., & Mundy, K. (2008). International indicators and assessments: Issues for teachers. In K. Mundy, K. Bickmore, R. Hayhoe, M. Madden, & K. Madjidi (Eds.), *Comparative and international education: Issues for teachers*. Toronto and New York: Canadian Scholars Press International and Teachers College Press.
- Figazzolo, L. (2009, March). PISA: Is testing dangerous? *Worlds of Education*, 29.
- Flavell, J. H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Ed.), *The nature of intelligence* (pp. 231–236). Hillsdale, NJ: Erlbaum.
- Friedman, M. (1955). The role of government in education. In R. Solo (Ed.), *Economics and the public interest*. New Brunswick, NJ: Rutgers University Press.
- Gauri, V. (1999). *School choice in Chile: Two decades of educational reform*. Pittsburgh, PA: University of Pittsburgh Press.
- Goldstein, H. (2004). International comparisons of student attainment: Some issues arising from the PISA study. *Assessment in Education*, 11(3), 319–330.
- Hörmann, B. (2009). Disappearing students: PISA and students with disability. In S. T. Hopmann, G. Brinek, & M. Retzl (Eds.), *PISA zufolge PISA—PISA according to PISA* (pp. 157–174). Vienna: LIT Verlag.
- Hsieh, C., & Urquiola M. (2006). The effects of generalized school choice on achievement and stratification: Evidence from Chile's voucher program. *Journal of Public Economics*, 90 (8–9).
- Jacott, L., & Maldonado, A. (2006). The Centros Concertados in Spain, parental demand and implications for equity. *European Journal of Education*, 41(1), 97–111.
- Ladd, H., & Fiske, E. (2001). The uneven playing field of school choice: Evidence from New Zealand. *Journal of Policy Analysis and Management*, 20(1), 43–64.

- Ladd, H., Fiske, E., & Ruijs, N. (2011). Does parental choice foster segregated schools? Insights from the Netherlands. In M. Berends, M. Cannata, & E. Goldring (Eds.), *School choice and school improvement*. Cambridge, MA: Harvard Education Press.
- Lee, C. J. (2012). A new government's policy initiative: School reform in Korea. In C. Acedo, D. Adams, & S. Popa (Eds.), *Quality and qualities: Tensions in education reforms*. Rotterdam: Sense Publishers.
- Magalhães, A., & Stoer, S. (2009). Performance, citizenship and the knowledge society: A new mandate for European education policy. In R. Dale & S. Robertson (Eds.), *Globalisation and Europeanisation in education* (pp. 233–260). Oxford: Symposium Books.
- Mortimore, P. (2009). *Alternative models for analyzing and representing countries' performance in PISA*. Paper commissioned by Education International Research Institute, Brussels. <http://download.ei-ie.org/Docs/WebDepot/Alternative%20Models%20in%20PISA.pdf>
- Musset, P. (2012). *School choice and equity: Current policies in OECD countries and a literature review*. OECD Education Working Papers, No. 66, OECD Publishing. <http://dx.doi.org/10.1787/5k9fq23507vc-en>
- Narayan, D., & Petesch, P. (Eds.). (2002). *Voices of the poor from many lands*. Washington, DC: World Bank.
- OECD [Organisation for Economic Cooperation and Development] (2009). *Creating effective teaching and learning environments: First results from TALIS*. <http://www.oecd.org/dataoecd/17/51/43023606.pdf>
- OECD [Organisation for Economic Cooperation and Development] (2010a). *PISA 2009 results: What students know and can do—student performance in reading, mathematics and science* (Volume I). <http://dx.doi.org/10.1787/9789264091450-en>
- OECD [Organisation for Economic Cooperation and Development] (2010b). *Pathways to success: How knowledge and skills at age 15 shape future lives in Canada*. www.oecd.org/dataoecd/59/35/44574748.pdf
- OECD [Organisation for Economic Cooperation and Development] (2011). *Teaching and learning international survey: TALIS 2013*. www.oecd.org/talis.
- Ravitch, D. (2012, March 22). How, and how not, to improve the schools. *The New York Review of Books*. <http://www.nybooks.com/articles>.
- Riedel, A., et al. (2009). *School choice in German primary schools: How binding are school districts?*. Schumpeter Discussion Papers: University of Wuppertal.
- Sahlberg, P. (2011). *Finnish lessons: What can the world learn from educational change in Finland?* New York & London: Teachers College Press.
- Schindler, B. (2007). Living and learning separately? Ethnic segregation of school children in Copenhagen. *Urban Studies*, 44 (7).
- Söderström, M., & Uusitalo R. (2005). *School choice and segregation: Evidence from an admission reform*. Working Paper Series, Uppsala: Institute for Labour Market Policy Evaluation (IFAU).
- Walby, S. (2009). *Globalization and inequalities: Complexity and contested modernities*. London: Sage.
- Watson, L., & Ryan, C. (2009). *Choice, vouchers and the consequences for public high schools: Lessons from Australia*. NCSPE Research Paper No. 181, National Center for the Study of Privatization in Education, Columbia University, Teachers College.
- Woodfield, A., & Gunby, P. (2003). The marketization of New Zealand schools: Assessing Fiske and Ladd. *Journal of Economic Literature*, 41(3), 863–884.
- Zimmer, R., et al. (2009). *Charter schools in eight states: Effects on achievement, attainment, integration and competition*. Santa Monica, CA: RAND Corporation.

Author Biography

Don Adams (United States) is emeritus professor of education at the University of Pittsburgh. His research interests include educational planning and policy making in developing countries.