

Educational Policies in the Face of Globalization: Whither the Nation State?

Martin Carnoy

The role of the national state in shaping national economic and social policy has, according to both academics and popular thinking, been sharply constrained by economic globalization (e.g. Castells 1997; Friedman 1999; Giddens 2002). Another line of argument is that globalization is producing “convergence” in norms and values (institutional culture) concerning human rights and social policies, such as equity, norms of social efficiency, and democracy (Meyer *et al.* 1992; 1997). Of particular interest to us is whether and how the constraints and influences imposed by economic globalization and ideological convergence apply to educational policy-making and the shape of educational systems themselves.

In this chapter, I restate an argument I made a number of years ago (Carnoy 2000) that economic globalization does indeed put new pressures on national states. I contend that competition generated by new rising economic players in the system and the specialized skills demanded by high value information technology, financial services, and organizational innovation services induce national states to expand their educational systems, particularly higher education.

Second, I argue that ideological convergence as developed in the world system approach to institutional change is partly the result of spreading elite notions of “modernity,” but that these elite notions of modernity develop and spread because they are functional to elite interests, including reproduction of elite power and specific economic interests. Particular reforms of educational systems are also promoted by international agencies representing those interests but also incorporating their own “non-profit” economic interests. That is, “convergence” may appear to emerge from the autonomous diffusion of institutional norms “caused” by increased interaction among individuals in an increasingly globalized and technologically

connected environment. Yet, the convergence that does occur is selective, and the selection is the one promoted by powerful global economic interests.

Finally, I make the case that even with all these economic and ideological pressures, there are a great variety of national approaches to educational policy, and these approaches are highly conditioned by how national societies define social efficiency and by the historical paths of national politics.

The National State, Globalization, and the Expansion of Education

Is the power of the national state diminished by globalization? Yes and no. Yes, because increasing global economic competition makes the national state focus on economic policies that improve global competitiveness, at the expense of policies that stabilize the current configuration of the domestic economy or possibly social cohesion (Castells 1997). Yes, because the national state is compelled to promote economic growth to assure its own legitimacy and therefore to make the national economy attractive for the mass of capital that moves globally choosing “winners” over “losers,” and that may mean a reduction of public spending and the introduction of monetary policy that favors financial interests rather than workers and consumers (Castells 1997).

But no, because ultimately national states still greatly influence the territorial and temporal space in which most people acquire their capacity to operate globally and where capital has to invest. National states are largely responsible for the political climate in which businesses conduct their activities and individuals organize their social lives. Some analysts have called this underlying context for social and economic interaction “social capital” (Putnam 2000). Others have focused on trust (Fukuyama 1995). National public policy has an enormous influence on social capital and trust. Even the World Bank, supposedly a global institution, has rediscovered the national state as crucial to national economic and social development (World Bank 1997). It makes a major difference to a nation’s economic possibilities when the national state is capable of formulating coherent economic and social policies and carrying them out. It makes a major difference if the national state can reduce corruption and establish trust, and it is difficult to imagine achieving greater social capital in most places without a well-organized state.

Ultimately, the state is concerned with its own reproduction. To reproduce its political power, the state bureaucracy seeks political legitimacy even when it is a non-democratic regime. In the past and now even more in a globalized knowledge economy, achieving political legitimacy includes not only stimulating economic growth, but also providing education to the mass of a nation’s population.

Increasing Demand for Education in a Globalized Environment

In a globalized environment, the pressure for states to engage with education has increased. Globalization means increased competition among nations in a more closely intertwined international economy, a competition that is continuously enhanced by more rapid communication and computer technology and by a way of business thinking that is increasingly global rather than regional or national. Globalization also means relatively free trade, rather unregulated movement of

finance capital, and the increased movement of innovative ideas (knowledge) and labor across national borders.

Major new players have emerged in the world economy, such as China, Korea, Taiwan, Brazil, and India. They are breaking the dominance of the USA, Europe, and Japan in manufacturing, although for the moment, firms (and universities) with their home base in the highly developed countries still have almost total control over the research and development of technical innovations.

One of the main outcomes of such competition and cross-border movements is a worldwide demand for certain kinds of skills – namely language, mathematics reasoning, scientific logic, and programming – associated with higher levels of education. Globalized science-based technology firms are increasingly using scientists and engineers trained at least partially in the emerging economies' universities to staff their innovation activities both in the developed countries and in the emerging economies themselves. At the same time, national states, particularly China, Korea, Taiwan, and Singapore, are increasing their scientific and technological higher education rapidly in the hope of capturing innovation rents as innovation continues to globalize. These forces tend to affect almost all countries in the global economy in the same way.

The tendency for the state in the new competitive global environment is to focus on education policies that enhance its economy's global competitiveness. An important influence of globalization is to increase the relative value of higher educated labor (or decrease the value of less educated labor). Thus, the private rates of return to higher education are rising in most countries and, in many, now exceed the payoff to lower levels of schooling (Carnoy *et al.* 2013). We need to remember that when the payoffs to higher education rise, this increases the demand not only for places in higher education, but also for lower levels of education and for increased *quality* of lower levels of schooling so students can better compete for university places. The state's legitimacy is entwined with its capacity to expand and improve the educational system as a whole.

More recently, state legitimacy includes improving the quality of mass education, particularly in terms of student scores on international and national assessments. Economists have tried to link higher educational attainment (Barro 1991; Krueger and Lindahl 2001) and educational quality (Hanushek *et al.* 2013) to economic growth. Such links help governments justify more investment in education, but even if those links prove to be rather vague, the increasing demand for expanding education forces governments to respond. This push for more education has also come to include demands for greatly expanding higher education and, in the larger economies, investing in a prime symbol of knowledge economy prestige, the "world class" university (Altbach *et al.* 2009).

There are other global economic forces that act similarly across countries. For example, constraints on public spending from aging populations limit educational expansion and attempts to improve educational quality. Increased competition in the global economy has made it more difficult for both developed and developing nations to raise revenue through increased taxation, particularly on corporate profits and individual income, because governments fear the flight of capital or not being able to attract capital investment. Further, many of the world's governments have low capacity to collect income taxes, so rely on excise taxes (value-added tax (VAT),

import tariffs, export taxes). Finally, governments are under pressure from international financial institutions, such as the International Monetary Fund (IMF) and the World Bank, to keep public spending low. A major part of the IMF package for countries preparing themselves for “sustained” economic growth is to reduce the size of public deficits and shift national resources from government control to the private sector. This, in turn, means keeping public spending low relative to the size of the private sector.

National Variation in Response to Global Pressures

Nevertheless, there is considerable variation in the way states respond to the growth of demand for higher skills and to the financial constraints imposed by highly mobile capital seeking the best “deal” in terms of low wages and low corporate and income taxes. This suggests that there is an important *national* component to how nations expand their systems and reform them. Two important factors in defining national approaches to education are (a) how much national societies value the social payoffs to education; and (b) how much societies value social equality and how much they view the state as the main force for equalizing opportunity and outcomes.

The social payoffs to education are the positive effects of an educated population on civil society, tolerance for dissenting views, political stability, strengthened democracy, treatment of women and minority groups, and overall economic productivity – more educated people tend to make their co-workers more productive as well. It is therefore generally agreed that primary and basic secondary education should be heavily subsidized if not altogether free, so that no child in the society would be prevented from accessing those levels. Even at the university level and even when university graduates generally belong to a privileged socioeconomic group, the case has been made politically for publicly financing such students to earn higher incomes at public expense. The contention is that high social class individuals increasing their human capital at public expense also increase everyone else’s well-being by becoming good doctors, good engineers, and good leaders. These large benefits, it could be claimed, accrue to the society as a whole, not just to the graduates themselves. One of the main arguments used for investing much larger amounts per student in elite or “world class” institutions is that their graduates and the research done there will have large “spillover” effects for society as a whole.

Social equality plays a role in the debate as well: lower social class families may face especially large financial, informational, or other barriers to entry into secondary and higher education. If a society values fairness and places social and political value on ensuring desired levels of equity of access and more equitable economic and social outcomes, the public aspect of education would include financing it in ways that remove such barriers. In addition, taxation and spending policies on public investments would tilt toward greater social equality. This equity/equality argument has been extended to make education as a whole – including higher education – a human right, situating it completely in the public space, available for all at public expense. Again, social preferences for equity/equality are mediated through the state. Depending on power relations in the state, it can interpret how education is to be financed as a public or private good.

Societies vary considerably in how they view the social value of education and social equity and equality. To the degree that states reflect these varying views and

are not able to maintain legitimacy by just imposing the views of the global elite, they are likely to vary in their responses to global forces.

Ideological Convergence

One of the most intensive lines of sociological research in the past four decades has revolved around the concept of global ideological convergence across a broad array of social values, including human rights, women's rights, universal primary education (mass schooling), and the importance of science and mathematics. The argument for mass schooling as a world model that infiltrated one nation state after another, rather than the result of local national responses to "solve problems of social order ... or to maintain dominance of elites," encapsulates the underlying concept of institutional convergence (Meyer *et al.* 1992).

The underlying theory of this ideological convergence is that elites implicitly came to agree upon a model of the nation state that had certain features, and one of those features was mass education. Thus, a converging ideological conception of the "modern" nation state was the driving force for defining educational change. Similarly, in the global information society, there is an emerging conception among global/national elites of the institutional nature of "modern" societies. In that sense, national states have "control" over their policies, but they are inexorably driven to "conform" to global institutional norms in order to meet a particular, global elite-defined conception of a "well-functioning, modern" state. State legitimacy in the eyes of global elites has real political meaning and, this theory claims, overrides the power of local economic, social, and ideological forces as an explanation for educational policies.

It is difficult to disagree that changing conceptions of the modern nation state have gradually diffused globally to influence national policies regarding educational expansion, gender equality, and, more recently, notions of educational quality, which include the spread of testing and measurement. To what degree diffusion is the outcome of the "autonomous" spread of ideology or of changing economic conditions that affect the functionality of these policies is an important question, not dealt with satisfactorily by the world system convergence theorists.

Ideological Convergence or Changes in Reproducing State Legitimacy?

In this section of the chapter, I address the interpretation of the ideological convergence argument, mainly to understand why national societal values and politics play such an important role in shaping the impact of these "global" ideologies on education policy. Three important expressions of so-called educational policy convergence in a globalized environment are the expansion of higher education through shifting the costs of that expansion to families through "privatization"; the increasing focus on educational "quality" as an important factor in economic growth and improving social equity; and increasing focus on educational technology (computers/internet) as a key tool for improving teaching and learning and for equalizing educational opportunity.

As noted, in the current era, globalization has increased pressure on many nation states to expand their higher educational systems for very functionalist reasons; that is, the increasing private economic payoff to higher levels of education. Those increasing

payoffs have also expanded the possibility for nation states to make families bear an increasing share of the cost of that expansion. This has characterized the expansion, particularly in developing countries, and has been viewed as an ideological shift in the view of higher education as a public to a private good (Altbach *et al.* 2009).

The focus on educational quality and the spread of testing and measurement connected with that focus is intimately connected to elite ideological “convergence” on conceptions of the role of education in economic growth, social mobility, and income inequality. Yet, this ideology also spreads for two types of functionalist reasons – direct reasons, namely the potential for private profits for test and test materials producers associated with the vast education industry; and indirect reasons, namely growing income inequality and the increasing concentration of capital. Would education be the centerpiece of reducing inequality in a globalizing world economy marked by decreasing rather than increasing inequality? Measuring educational quality and using those measurements to fault “bad” education for a host of ills in society is highly functional to maintaining the highly preferred position of the very elites who spread this ideology.

In a similar vein, the diffusion of computers and internet connections into schools as a “solution” to “low schooling quality” and to “achievement gaps” between low- and high social class students is an ideology that has spread rapidly in the past 15 years, much as did the educational television phase of technology-assisted instruction in the 1970s. The most recent manifestation of this ideology is the Massive Open Online Courses (MOOCs). These, again, are posed as a “solution” to providing high quality yet inexpensive teaching-learning opportunities on a global scale to augment (or even replace) localized university classes. Again, the spread of this ideology is situated in the context of its functionality to elite economic interests: large potential profits to hardware and software producers. And, as in the case of testing and measurement, it feeds off growing economic and social inequality and the convenience of seeking solutions to that ill through technology rather than addressing inequality directly.

Education as a Private versus Public Good

As noted by many analysts, there has been a tendency in the past 20 years for governments to shift the cost of higher education to students and their families (e.g. see Altbach and Levy 2005), both through promoting the expansion of fee charging private higher education institutions and the implementation of tuition fees (cost sharing) in public institutions. This has been characterized as a shift in ideology, specifically a change in treatment of higher education from a public to a private good, and also the result of hegemonic neo-liberal influences pushing for markets in education (Marginson and Ordorika 2011).

In assessing these views, it is important to consider that education inherently serves both private and public interests (Levin 1987; Marginson 2007). It serves private interests by enhancing the capacity of individuals to gain economic and social benefits. It also has public value because more highly educated individuals are likely to increase others’ productivity (Romer 1994) and to embrace the fundamental tenants of a tolerant democratic society, which benefits all citizens (Mill 1869). However, much of the value of externalities ultimately depends on ideology (what “society” defines as having social value), and ideology, in turn, depends on political power

relations. If the political decision process is truly democratic and pluralistic, and full information is equally available to all individuals, the value of externalities could closely reflect the sum of the values individuals living in a society place on them. But this democratic, full information political model is rarely realized. In most societies, economic power and state power are closely entwined. The state (the political system) places a value on externalities that reflect these highly unequal power relations and the asymmetric influence, even in a democracy, of economically powerful groups in defining the value of externalities associated with certain types of higher education.

In the context of our argument that globalization has changed the objective (functionalist) conditions for higher education – greatly increasing the demand for higher educated labor and the payoffs for those who complete university – we contend that such high (and rising) payoffs accentuate the value of higher education as serving private interests. This gives the state the option to shift higher education financing to (mainly elite and higher middle class) families without jeopardizing the state's political legitimacy. Social externalities associated with the expansion of higher education are still likely to be positive, and public pressure continues to keep higher education free. Yet, many national states under pressure to increase higher education access have opted to expand it rapidly through charging tuition in public institutions or allowing low-quality private institutions to take up this new demand with tuition-paying places rather than taking the slower route of free public education.

There could be global-level ideological dimensions to this choice, but the changing private value of higher education is a much more powerful explainer of state moves to directly charging families for the costs of higher education (Carnoy *et al.* 2013). At the same time, there is considerable variation in whether and how this move is implemented in practice, reflecting national political conditions and historical trends in higher education expansion. For example, Brazil's higher education system was already 60% private in 1970, well before globalization and the recent explosion of enrollment beginning in 1995. Even so, private enrollment grew again after 2000 to almost three-quarters of undergraduates by 2010 and public institutions remained tuition free. India also expanded enrollment mainly through the private higher education sector, but simultaneously implemented cost sharing in public colleges. China's and Russia's systems also expanded rapidly in the same period, but a significant part of the growth was financed by tuition in public institutions – in China's case for all students and in Russia's, only for half the students – those who scored lower on entrance tests. Significantly, China and Russia's states are less democratic and their university systems are more centrally controlled than Brazil's or India's, and the way that financing increased enrollment played out quite differently in part due to these differences.

Focusing on Educational Quality and Testing

Not many years ago, in the 20th century, educational attainment was the main focus of educational policy-makers concerned with economic growth and educational equity. As discussed earlier, the populations of most countries measure their and their children's academic success mainly by how far they go in school, not their scores on tests. For example, one of the ways that higher social class parents improve the success of their less academically able offspring is to make sure that they complete university.

One reason why many higher test-scoring lower social class students do not achieve social mobility is because they fail to continue their education as far as their higher social class counterparts. Logically, attainment and achievement are correlated, but as Samuel Bowles and Herbert Gintis pointed out years ago (Bowles and Gintis 1975), achievement is a far worse predictor of economic success than social class, in part because social class is a far more important predictor of attainment.

However, as average years of schooling expanded in almost every society, and as this did not decrease social and economic differences (although it may have contributed to economic growth), a subtle shift occurred in academic and policy-maker focus from educational attainment to educational quality. Education quality has long been a topic of discussion (see the debate on science education in the USA post-Sputnik), but the new ideological “convergence” on quality of education as an indicator of the wealth of nations, of the possibilities for economic growth, and of state legitimacy, has clearly gone beyond anything in the past.

The new emphasis on educational quality has been accompanied and promoted by the rapid spread of testing and measurement. Measuring and comparing school outcomes across countries and within countries has not occurred spontaneously. Rather, it has been pushed by international organizations such as the International Association for Evaluation of Educational Achievement (IEA) and the Organisation for Economic Co-operation and Development (OECD), by the World Bank, the Inter-American Bank, and the Asian Development Bank, by non-governmental organizations (NGOs) such as the Inter-American Dialogue, and by bilateral agencies such as the US Agency for International Development. All these organizations share a globalized view of education and efficiency, which includes a highly quantitative view of progress. They also share an explicit understanding that “better” education can be measured and that better education translates directly into higher economic and social productivity. With more intensive economic competition among nation states, the urgency of improving productivity is translated by these organizations into spreading the acceptance of inter- and intra-national comparisons on standardized tests of student knowledge (UNESCO 2005; OECD 2011; Hanushek and Kimko 2000; Hanushek and Woessmann 2008). The World Bank and other international and bilateral lenders have also pushed this new emphasis on test score measures of the quality of education through direct monetary incentives of additional foreign assistance for those developing countries that participate in international tests and develop national testing regimes (Kijima 2013).

Nations’ average international test performance is playing an increasing role in the way the public in those countries view themselves educationally. The two major players in the international testing universe are the IEA, which began testing internationally in the 1960s and now produces the Trends in International Mathematics and Science Survey (TIMSS), and the OECD, which runs the Programme for International Student Assessment (PISA). The impact of these international tests on national educational policy is steadily increasing, and so is the number of countries that participate in one or the other, or both.

Are testing and measurement and the focus on quality of education (achievement scores) over quantity of education (attainment) the new ideological symbols of national “modernity” in the globalized economy? Is that the reason that more national states are implementing national testing systems, participating in international tests,

and putting emphasis on raising those scores? Perhaps. Yet, it is just as likely that national adoption of these “symbols” fulfills two important functions, neither of which is nearly as benign as sending signals to the rest of the world that a nation state has joined a newly defined “global modernity club.”

The first of these functions is to reemphasize the role of the family and particularly of “better” schooling as the keys to solving the problems of poverty and social inequality. If it is widely believed that family effort and higher quality schooling can solve these problems, then other measures, such as changing the moral “norms” about how large income differences “should be” in a society and income redistribution through state taxation and spending policies become seen as unnecessary or even harmful to the overall national project of improving people’s well-being. The evidence that increasing student test scores per se addresses poverty and social inequality, or even that increasing test scores significantly increases economic growth, is limited to very questionable correlational results. However, the political effect of successfully shifting public consciousness to schooling as the solution to social ills is more believable.

The global movement toward increased educational testing is framed by a long tradition in educational reform dating back to the turn of the 20th century that greater efficiency and control (accountability) is the secret to higher quality. The movement is synonymous with expanding educational access for lower social class youth. As lower social class youth flooded into US urban schools in the later 19th century, reformers such as Ellwood Cubberley called for greater efficiency – a discussion similar to the Taylorism movement taking place in industry (see Cubberley 1910; on Taylorism, see Braverman 1974).

Although articulated and justified in terms of their potential contribution of making education more efficient in terms of improving education, international tests are not necessarily consistent with measures needed for improving schooling. PISA, for example, is not linked to national curriculum standards. Rather, it is a measure of knowledge that experts believe makes youth more functional economically and socially in the current knowledge environment. It is true that cross-nationally PISA results are highly correlated with other test results, but its mathematics portion, for example, would not serve well for writing a mathematics curriculum.

Furthermore, other ways of using testing are linked more directly to school improvement. In the best of cases, school personnel participate in designing and applying the tests, and the tests are directly linked to knowledge transmission goals set either at the national or regional level. Important aspects of school efficiency can certainly be understood through such tests, but efficiency here is less concerned with resource allocation per se than with process and use of resources. In Chile, for example, national testing of fourth and eighth grade students was originally, in the 1980s, used simply as a way to stimulate competition among private and public schools competing for students and the voucher funds attached to each student. Available evidence suggests that this use of tests had no positive effect on student achievement. However, in the 1990s, the use of national testing linked to central government school improvement programs did apparently increase test scores in lower-scoring schools catering to low-income students.

Global notions of efficiency and measurement can therefore have a positive effect on educational output, and improving educational quality may have an effect on economic productivity. For these links to play out, however, policy-makers first have

to pass notions of measurement through local filters and have as their specific purpose school improvement even if school improvement requires more resources, which is likely the case in most developing societies. The distinction between this type of application of measurement to raising efficiency and the use of testing to develop national policies for resource use with the intention of avoiding discussions of public resources available for education is subtle and is mainly rooted in how the state, rather than international organizations, interprets the role of measurement in conditioning educational change. In addition, higher test scores must be linked to an improved quality of life for students scoring higher on tests. Although we would all like to believe that better schools will result in better economic and social opportunities for graduates, this may not be the case in highly unequal societies that can only absorb a small percentage of these higher quality graduates into higher paying jobs. The success of any education policy in promoting economic growth and social mobility depends on national state economic and social policies.

One of the ironies of the efficiency movement in education is that test *makers* have a vested economic interest to have educational systems and schools change what they define as academic knowledge or even useful knowledge to fit the particular test they sell. There is big money in testing and in the associated materials related to the curriculum associated with tests, so much so that the test makers have a major incentive in trying to change national curricula to align with their tests.

Globalization and Information and Communications Technology (ICT)

The spread of computers and the internet globally is the most evident manifestation of the information and communications technology foundations of the new global economy. The driving force behind the incorporation of ICT into education is ostensibly to improve student learning and to prepare youth for a global economy in which education contributes to higher productivity. There are strong underlying economic growth motives here, fostered by increased competition in the global economy. Allegedly, nations that have higher scoring students will perform better economically. Nations with students versed in the use of computers and the internet will be more productive. There is a second type of economic driver for the use of ICT in education – one that also motivated the use of educational radio and television a generation earlier: with ICT, the argument goes, it is possible to deliver reasonably high quality teaching to large numbers of students at low cost.

Thus, a case can be made that ICT has an ideological component, particularly in education as a symbol of modernization. However, an important element of the incorporation of ICT into schools is functional to economic growth, potentially lowering costs of schooling (financial functionality), and is a source of profit for the firms that produce ICT – hardware, software, internet connections, advertising on the internet, and schooling itself (privately run distance education). The education industry is an immense source of business opportunity, as we have discussed in the privatization of higher education, the testing and measurement business, and, perhaps most of all, ICT.

It is well to remember, however, that “I” stands for information, and “C” for communications. There is no “L” for “learning” in ICT, and for good reason. Computers were designed to store, access, and process quickly massive amounts of information.

The internet was also designed to access information and communicate it worldwide in real time. Computers as learning devices have proved to be much less effective despite claims that the access and communication functions of computer software could be easily adapted to teaching-learning functions and that they could serve these functions at a lower cost than traditional face-to-face forms of teaching/learning. Indeed, there are many such adaptations. Yet, after many years and many attempts, the promised educational quality improvements and lower costs from computer applications have been elusive (see Carnoy 2012 for a summary).

Perhaps the most appealing use of ICT for teaching and learning and, simultaneously for integrating individuals into a unified conception of culture, is the newest form of virtual higher education and the most recent expression of the combined impact of globalization and ICT on education – the MOOC, or Massive Open Online Course. In theory, MOOCs could make available to a global student clientele courses taught by experts in particular subjects from the very best universities in the world using effective lecture techniques, high level curricula, and well organized evaluation activities (problem sets, tests, etc.). For students who are academically able and disciplined enough to work independently in such courses, they could create the possibility of much higher standards of knowledge transmission worldwide. It is argued that they could also boost the quality of second tier higher education institutions by giving students there the opportunity to study with the very best professors in the world at a distance. However, the main objective of using MOOCs in second tier institutions is likely to be to lower costs per student, not to raise quality. As we discuss below, states are under pressure to decrease the costs of higher education expansion. MOOCs could certainly play a role in accomplishing that goal without necessarily raising higher educational quality.

Is the widespread use of ICT and the increasingly generalized belief in ICTs as the expression of the information age version of modernized, “connected” society (or “network society,” in Castells’ (1997) terminology) the result of ideological convergence? Or is it functional to both state efforts to increase economic growth and state legitimacy, as well as simply functional to higher profits for computer and peripherals manufacturers?

It makes perfect sense to interpret the use of computers in schools as a product of ideological convergence, particularly since they seem to have little positive impact on children’s academic learning (Carnoy 2012). Computers in schools are symbols of the information society – schools with computers and internet connections are certainly viewed by parents as academically innovative, and this view is pushed hard by international agencies, such as the OECD (OECD 2013b, chapter 5).

On the other hand, if we delve carefully into what aspect of “modernization” computers symbolize to parents, it is likely to be the notion that by using “high technology” in schools and at home, their children learn skills that will serve them in the workplace – that is, to help them get better jobs. The use and intensity of use of ICT are positively correlated with gross domestic product, and within a country, with individuals’ social class. This correlation does not imply a causal relation between ICT use and higher income or productivity, even though a “semi-causal” study using US data shows a significant relation between hourly wages and computer use at work (Krueger 1993). But before getting too excited that this “proves” that computer use “causes” higher productivity, consider that yet another study using German data duplicated Krueger’s positive US results for computer use and hourly wages, but also

showed a significant positive relation between hourly wages and the use of pencils and calculators (DiNardo and Pischke 1997).

The public perception that computer skills can benefit young people directly in the form of higher wages is fairly pervasive, and likely it does represent economic reality. In that sense, it is much less the result of a spreading elite conception of modernization (in which computers in schools represent the new modernization) than the result of objective changes in the value assigned to specific skills in a globalized economy. The demand by parents for computers in schools is therefore a functional demand for enhancing their children's employment and wages in the information economy. Similarly, there is an important functionality to supplying more computers to schools. School districts and governments worldwide buy tens of millions of computers for schools. Much, if not most, of this hardware, are earlier years' models. Furthermore, millions of school internet connections are installed annually. This is a major business, along with the production and selling of software, repair and maintenance, and so forth. Even if ICT were never shown to improve academic achievement, parents would demand them and companies would push educational systems to buy them, for very functional reasons.

Despite good functional explanations for why ICT has entered education in such a massive way worldwide, it is marked by a major paradox; namely, that ICT in education is rarely used in the way private business employs it – that is, to manage the quality of output, to raise teacher (worker) productivity, or to reduce costs through analyzing spending and resource allocation.

Beginning in the 1970s, US school districts regularly used computers to store student and personnel data. With the advent of high-speed personal computers in the 1990s, computers became a permanent fixture in school offices. In many school districts in the USA, school administrators have access to data from district computers; in many schools, individual teachers are hooked up to central data files either in the school or district office. Educational administrative offices in most developed countries have ICT, and data collection in the developed world is universally computerized.

Bilateral assistance agencies and international banks put increasing emphasis in the 1980s and 1990s on using ICT to collect educational data and to improve the administration of educational systems in developing countries, particularly through decentralizing educational offices to regions, states, municipalities, and states themselves. As in developed countries, such ICT systems have been used mainly for collecting enrollment data, student attendance, basic information on teachers, and basic information on schools. In other words, ICT mainly helps administrators get a better idea of the size of the educational system, student dropout and repetition, and the number of students per teacher. Yet, ICT is very seldom used to increase student achievement through better allocation of teacher effort or more effective use of other school resources.

Why is ICT used so much less in educational management decision-making than in private business? One argument could be that it is not being used this way because it might be useful for increasing teacher and administrator productivity, and that teachers and school directors, the “production managers” in education, realize this and resist applying ICT to assessing student learning gains at the classroom and school level. If that is the case, this most “modern” of ICT uses is halted from spreading mainly because it is not “functional” to the needs of major actors in the system. The

ideology of modernization is not powerful enough to overcome functional rationality. Even as educational assessment reaches down into the most isolated corners of the world, the most common uses of computer technology are not able to implement that assessment to make education more productive and efficient.

National States, Global Convergence, and the Shape of Educational Change

Do the global trends we have described mean that changes in educational systems will converge and that educational improvements will tend to be shaped globally? Given the hype around OECD's PISA reports and the push to find the "common" elements in "excellent" educational systems (OECD 2013a), it seems that this might indeed be the future of education. Assessment, accountability, greater use of ICT for teaching in schools, and increased privatization of schooling, particularly in lower income countries, are all features of the educational system being spread by international agencies intent on "reforming" the delivery of education.

All of these effects of globalization on education are passed through the policy structures of national states, so it is these states that ultimately decide how globalization affects national education. There is much more political and even financial space for the national state to condition the way globalization is brought into education than is usually admitted. Testing and standards are a good example of this space, and ICT is another. States can provide schooling access more equally, improve the quality of education for the poor, and produce knowledge more effectively and more equally for all within a globalized economy.

We see considerable empirical evidence of this in the heterogeneity of approaches to higher educational expansion under resource constraints (Carnoy *et al.* 2013). Although we observe movement in many countries toward increasingly defining higher education as a private good, there is great variation in this movement, with many European countries maintaining their commitment to providing highly subsidized higher public universities and some nations, such as Chile, on the verge of retreating from extreme versions of university privatization. In each case, national political conditions and the functional driving force of state legitimacy are paramount to defining how the state interprets its reaction to the pressures of global elite ideologies. National educational policy is contested political terrain in most societies (Carnoy and Levin 1985). The current struggles over educational policy in both developed and developing countries suggest that national states are still the terrain on which educational policy is formed, and that attempts to homogenize approaches in the name of global values and norms confront the objective conditions of national educational system histories, and national economic and political conditions.

Despite the dominant global elite drive for greater efficiency and privatization in education, there are increasing examples of national efforts to shift resources to the poor and of making public educational systems more effective for everyone, even if this may appear to be less efficient. There is also evidence that the US educational system, several Latin American systems, and several European systems have improved quality substantially in the past ten years and that they have done so without more privatization (Carnoy and Rothstein 2013). Chile and California have recently shifted major resources to low-income schools, with Chile already showing positive

academic returns to that counter-global educational policy (Carrasco 2013). That many states choose to adopt globally induced education policies that lower costs without improving quality (particularly in higher levels of education) is at least partly the result of caving in to “pro-poor” politics in the face of new competitive pressures and new, globalized thinking. Although it is difficult to counter strong, worldwide ideological trends and, indeed, the objective reality of financial globalization, states can and do choose to emphasize more productive, more equal, and more effective public education even in the highly competitive global economic environment, if it is politically functional for them to do so. As Levin and I claimed almost three decades ago (Carnoy and Levin 1985), national educational policies are politically contested within the nation state, and educational policy is the result of how that political contest evolves at the national and local level.

A clear expression of such variation is subnational state and provincial educational policies in federal systems such as the USA, Brazil, Germany, and Mexico. In the USA, states are responsible for their educational policies and even largely for financing education with local and state taxes. Policies and spending levels vary greatly from state to state, and so do educational outcomes (see, for example, Rothstein and Carnoy 2013). Most interesting is the polarized directions that different groups of states are taking in their educational policies, with one the “red” (conservative-run) group pushing for more charter schools, vouchers, anti-teacher union policies, even reducing spending for education, and, in some cases, experimenting with teacher incentives, and the other, “blue” states (governed by left-of-center governors and legislatures), focusing more on improving public education, distributing more resources to lower-income districts and working more cooperatively with the teachers unions. Putting aside the question of which policies will turn out to be more effective, the variation suggests how local (even below nation state) political conditions can influence greatly how the public sector develops the educational system. All this variation suggests that governments have considerable control over how they react to global forces influencing educational policies. That said, globalization has clearly pushed most US states to adopt a common core curriculum and a common evaluation system of those core standards

References

- Altbach, P. and D. Levy (eds). 2005. *Private Higher Education: A Global Revolution*. Chestnut Hill: Center for International Higher Education, and Rotterdam: Sense Publishers.
- Altbach, P., L. Reisberg, and L. Rumbley. 2009. *Trends in Global Higher Education: Tracking an Academic Revolution*. Chestnut Hill: Boston College Center for International Higher Education.
- Barro, R. 1991. “Economic Growth in a Cross-Section of Countries.” *Quarterly Journal of Economics*, 106(2): 407–443.
- Bowles, S. and H. Gintis. 1975. *Schooling in Capitalist America*. New York: Free Press.
- Braverman, H. 1974. *Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century*. New York: Monthly Review Press.
- Carnoy, M. 2000. *Sustaining the New Economy: Work, Family, and Community in the Information Age*. Cambridge: Harvard University Press.
- Carnoy, M. 2012. “What Does More ICT in the World Economy and in Post-Industrial Societies Mean for Education?” Paper presented at the Foro Valparaiso, Universidad Catolica de Valparaiso, June.

- Carnoy, M. and H.M. Levin. 1985. *Schooling and Work in the Capitalist State*. Stanford: Stanford University Press.
- Carnoy, M., P. Loyalka, M. Dobryakova, R. Dossani, I. Froumin, K. Kuhns, J.B.G. Tilak, and R. Wang. 2013. *University Expansion in a Changing Global Economy: Triumph of the BRICs?* Stanford: Stanford University Press.
- Carnoy, M. and R. Rothstein. 2013. *What Do International Test Scores Really Show About U.S. Student Performance?* Washington, DC: Economic Policy Institute.
- Carrasco, R. 2014. "Leveling the Playing Field: How Can We Address Educational Inequalities?" Unpublished PhD dissertation, Stanford University.
- Castells, M. 1997. *The Network Society*. London: Blackwell.
- Cubberley, E. 1910. *Changing Conceptions of Education*. New York: Houghton Mifflin.
- DiNardo, J. and J.-S. Pischke. 1997. "The Returns to Computer Use Revisited: Have Pencils Changed the Wage Structure Too?" *Quarterly Journal of Economics*, 112(1): 291–303.
- Friedman, T. 1999. *The Lexus and the Olive Tree: Understanding Globalization*. New York: Farrar, Straus, and Giroux.
- Fukuyama, F. 1995. *Trust: The Social Virtues and the Creation of Prosperity*. New York: The Free Press.
- Giddens, A. 2002. *Runaway World: How Globalisation is Reshaping Our Lives*. London: Profile Books.
- Hanushek, E. and D. Kimko. 2000. "Schooling, Labor-Force Quality, and the Growth of Nations." *The American Economic Review*, 90(5): 1184–1208.
- Hanushek, E. and L. Woessmann. 2008. "The Role of Cognitive Skills in Economic Development." *Journal of Economic Literature*, 46(3): 607–668.
- Hanushek, E., P. Peterson, and L. Woessmann. 2013. *Endangering Prosperity*. Washington, DC: The Brookings Institution.
- Kijima, R. 2013. "The Politics of Cross-National Assessment: Global Trends and National Interests." Unpublished PhD dissertation, Stanford University.
- Krueger, A. 1993. "How Computers Have Changed the Wage Structure: Evidence from Microdata, 1984–1989." *Quarterly Journal of Economics*, 108(1): 33–60.
- Krueger, A. and M. Lindahl. 2001. "Education for Growth: Why and For Whom?" *Journal of Economic Literature*, 39(4): 1101–1136.
- Levin, H.M. 1987. "Education as a Public and Private Good." *Journal of Policy Analysis and Management*, 6(4): 628–641.
- Marginson, S. 2007. "The Public/Private Divide in Higher Education: A Global Revision." *Higher Education*, 53: 307–333.
- Marginson, S. and I. Ordorika. 2011. "'El Central Volumen de la Fuerza': The Hegemonic Global Pattern in the Reorganization of Elite Higher Education and Research," in *Knowledge Matters: The Public Mission of the Research University*, edited by Diana Rhoten and Craig Calhoun. New York: Columbia University Press.
- Meyer, J., F. Ramirez, and Y.N. Soysal. 1992. "World Expansion of Mass Education, 1870–1980." *Sociology of Education*, 65(2): 128–149.
- Meyer, J., J. Boli, G. Thomas, and F. Ramirez. 1997. "World Society and the Nation-State." *American Journal of Sociology*, 103(1): 144–181.
- Mill, J.S. 1869. *On Liberty*. London: Longman, Roberts, & Green.
- Putnam, R. 2000. *Bowling Alone*. New York: Simon and Schuster.
- Organisation for Economic Co-operation and Development (OECD). 2011. *Lessons from PISA for the United States, Strong Performers and Successful Reformers in Education*. Paris: OECD.
- Organisation for Economic Co-operation and Development (OECD). 2013a. *PISA 2012: Results in Focus*. Paris: OECD.
- Organisation for Economic Co-operation and Development (OECD). 2013b. *Trends Shaping Education*. Paris: OECD.
- Romer, P. 1994. "The Origins of Endogenous Growth." *Journal of Economic Perspectives*, 8(1): 3–22.

Rothstein, R. and M. Carnoy. 2013. “‘PISA Day’ – An Ideological and Hyperventilated Exercise.” Retrieved from: www.epi.org/blog/pisa-day-ideological-hyperventilated-exercise (accessed November 3, 2015).

UNESCO. 2005. *World Education Report 2005*. Paris: UNESCO.

World Bank. 1997. *World Development Report: The State in a Changing World*. New York: Oxford University Press and World Bank.