Global Change and Educational Reform in Ontario and Canada

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Canadian education has been responding to global change for many decades. Over the last 30 years, two global paradigms have dominated debates about education in Ontario and in Canada. The first paradigm, global economic competitiveness, maintains that knowledge has become the competitive advantage of industrial nations in the global economy and that utilitarian principles should guide our educational reforms. The second paradigm, global interdependence, holds that we should acknowledge our interdependent global needs and responsibilities and that this should guide our educational reforms. I argue that to prepare students for the global challenges of the new century, excellence in education should be defined as meeting the requirements of both paradigms and as including the study of all major global change — economic and technological — as well as the study of world cultures, politics, ecology, and humanitarian issues.

In some respects Canadian education has been responding to global change for more than a century. In recent times, two global paradigms have influenced the course of educational reforms in Ontario and Canada. The first maintains that knowledge has become the competitive asset and advantage of industrial nations in the global economy and that a core curriculum of subjects such as math, science, technology, and language proficiency should be at the centre of educational reforms. This paradigm of global economic competitiveness asserts that knowledge is a commodity and that Canadians have national interests to protect in a common global future. In contrast, the second paradigm argues that we should acknowledge our interdependent global needs and responsibilities and that this is what should guide educational goals and reforms. This paradigm
acknowledges the realities of technology and the global economy but goes further, also valuing study of both the interdependence of global politics, culture, and ecology and the ethical issues we must confront in our common global future. These two conflicting paradigms for education, global economic competitiveness and global interdependence, have dominated educational debate in Ontario and in Canada, especially in the last 30 years.

The paradigm of global economic competitiveness prevailed in the last decade of the 20th century, but it was just as pervasive at the beginning of that century. In 1907, the Canadian Manufacturers’ Association declared, “The competition of the world has become so strong that we cannot afford to fall behind in the race for efficiency. . . . Technical education must come . . . we must educate our people towards efficiency” (p. 844). This fear of falling behind in the global economy continued to preoccupy Canadians for the rest of the century. After World War II, educational reforms were justified as essential to maintaining Canada’s position as a front-rank defender of the free world, and, in the case of the Robarts reorganization of education in Ontario of 1962, as a way to meet the complex educational requirements of a highly industrialized society (Fleming, 1972).

The second paradigm, education about global interdependence, emerged at the end of the 1960s with the convergence of three factors: unprecedented global advances in mass media, great economic prosperity in industrial nations, and a large, well-educated population of youth. Students and educators of that time were exposed to global reports such as the Club of Rome’s Limits to Growth (Meadows, Meadows, Randers, & Behrens, 1972) and later those of Brandt (1980) and Brundtland (1987). These reports demonstrated that humanity shared many interdependent global problems and responsibilities, and this perspective became a benchmark for educational reform for a new generation of students and educators.

THE HALL-DENNIS REPORT AND THE PARADIGM OF GLOBAL INTERDEPENDENCE

In the late 1960s, people believed strongly in education’s ability to reconstruct the world and create a just society. Ontario’s Hall-Dennis report (Ontario Department of Education, 1968) was an eloquent statement of those times and of an education about global interdependence. Written just after Canada’s centennial year and submitted a year before Neil Armstrong was to walk on the moon, the report declared:

We stand today in the dawn of our second century and assess the field of future education . . . we must not lose sight of the human needs that the new dawn brings . . . we have in our hands the means of change for human betterment . . . for the people of Ontario . . . for all Canadians, and hopefully . . . [for] all mankind. (p. 9)
The report was deliberately global in its references, asserting that education should promote understanding, tolerance, and friendship among all nations and further the activities of the United Nations. It also claimed that schools had a significant mandate to educate students about such issues as the threat of nuclear war, the role of Canada in world affairs, air and water pollution, and the expansion of the world’s population (p. 67).

Although the Hall-Dennis report often alluded to the importance of a paradigm devoted to global education and international understanding, it did not provide specific and structural recommendations for operationalizing this kind of global paradigm in the Ontario curriculum or its educational goals. The report unfortunately placed most of the responsibility for curriculum development on school staffs and school boards. Now, more than 30 years later, it may be argued that this failure to help implement a paradigm of global interdependence and international understanding was the report’s great lost opportunity. It left underdeveloped, for over a quarter-century, a curricular tradition that could successfully challenge the paradigm of global economic competitiveness.

GLOBAL UNCERTAINTY AND THE DEBATE ABOUT EDUCATIONAL STANDARDS

By the early 1970s, global developments such as high unemployment, the OPEC crisis, and the rise of Japan in world trade made Ontarians take more seriously the link between education and continued prosperity. However, their best and rather uncritical solution to these challenges was a demand, by such groups as the Canadian Manufacturers’ Association and the Chamber of Commerce (Curtis, Livingstone, & Smaller, 1992), for education that went “back to the basics” and ensured employability. Ontario gradually increased the number of mandatory credits in its high school diploma: to 6 in 1974, 7 in 1977, 9 in 1979, and 16 in 1984. Furthermore, the Ministry of Education released more than 150 curriculum guidelines for the Intermediate and Senior Division and, in 1976, announced that it would revise Ontario’s curriculum guidelines to get a firmer grip on their content, making them more prescriptive and more practical.

The Ontario public seemed to believe that the best response to global change was not a serious investigation of the causes of such change in economics, technology, ecology, society, and politics—and the inclusion of these in its educational reforms—but rather the implementation of standards and rigour. In effect, neither global paradigm guided Ontario’s educational reforms.

RECONSIDERING A PARADIGM OF GLOBAL INTERDEPENDENCE FOR ONTARIO

Although the global paradigm eluded the public at large, it did not elude Ministry officials or the education community in Ontario. In January 1980, the Ministry of Education and the Ministry of Colleges and Universities drew together senior
staff to form a Strategic Planning Task Group (SPTG) whose mandate was to deal with strategic issues that would affect education in Ontario for the next 5–20 years. The SPTG conducted environmental scans about some 80 important concerns, consolidating its work in the report *Towards the Year 2000* (Ontario Ministry of Education, 1984). It argued that education must, as a system, prepare itself and its students to anticipate and to adapt to global change, and that to do so would require renegotiating the goals of Ontario education. It recognized that global conditions, such as cultural and demographic changes, environmental changes, new employability skills, and the changed roles of women in society, should influence Ontario’s education policy. The report added that the government should improve its scanning and analysis infrastructure to anticipate future long-range strategic issues for education. Despite this report’s comprehensive plan for reforming Ontario education and despite its general acknowledgement of an educational paradigm of global interdependence, *Towards the Year 2000* was out of step with an Ontario public that had become quite narrowly utilitarian about its expectations for education.

A survey of public attitudes towards education in Ontario, conducted by the Ontario Institute for Studies in Education, found that the public ranked its first and second priorities for high school education as job training and career preparation (Livingstone & Hart, 1981), and that it highly valued computer education, followed by science, then by business and vocational education (Livingstone, Hart, & Davie, 1985). The ROSE report, as *The Renewal of Secondary Education in Ontario* (Ontario Ministry of Education, 1982) came to be known, generally reflected these views: “The public expects the schools to provide students with a useful basic education that prepares them for direct entry into employment or for post-secondary education . . . [with] more demanding standards of achievement and discipline” (pp. 4, 5).

**RADWANSKI AND THE NEW GLOBAL BENCHMARK FOR ONTARIO EDUCATION**

The Radwanski report (*Ontario Study of the Relevance of Education and the Issue of Dropouts*; Radwanski, 1987) became the first major policy document to articulate successfully to Ontarians the province’s need for a paradigm of global economic competitiveness for education. Citing the findings of a previous study (the 1986 *Ontario Study of the Service Sector*) in which Radwanski had also been involved, it argued that “to compete effectively in a new knowledge-intensive global economy. . . excellence in educating our workforce is our single most important strategic weapon” (p. 11).

Radwanski’s report was no doubt shaped by the perspectives he brought to the study as a journalist and influenced by several contemporary reports on education: *A Nation at Risk* (U.S., National Commission on Excellence in Education, 1983), *A Nation Prepared* (Carnegie Forum on Education and the Economy,
1986), and *Making Technology Work* (Economic Council of Canada, 1987). All three underscored the importance of a highly educated workforce for success in the global economy. The significant legacy of the Radwanski report was that, for the first time, the Ontario public’s long-standing curricular priority of career education and job preparation was turned into a global concern. In effect, since Radwanski (1987), the public has demanded that the paradigm of global economic competitiveness be the new standard of reference for Ontario education. Although Radwanski proposed that education also include the study of the history and geography of Canada and the world because “we live in an increasingly interdependent world” (pp. 47, 52), his main argument was that Ontarians had economic interests to protect in a common global future.

The year after the Radwanski report appeared, the Ontario Premier’s Council issued *Competing in the New Global Economy* (1988); two years later came the Council’s subsequent report, *People and Skills in the New Global Economy* (1990). The first report emphasized the importance of science and technology for international competitiveness in industry and education; the second underscored the link between education and global competitiveness.

**A NATIONAL EDUCATION DEBATE ABOUT GLOBAL COMPETITIVENESS**

Ontario’s calls for educational reform in the late 1980s and early 1990s were part of a larger global trend in industrial nations, that of asserting that globalization had brought about a crisis in education. Reforms of education systems in other nations—the United Kingdom (*The Education Reform Act, 1988*), the United States (*America 2000; Goals 2000*), France (*Loi d’orientation sur l’éducation, 1989*) and Japan (*The Fourth and Final Report on Educational Reform, 1987*)—were enacted in response to the restructuring of the global economy in the late 1980s and early 1990s. In Canada, major employers such as CN Rail, Dofasco, Imperial Oil, and IBM Canada cut their workforces significantly. Moreover, new knowledge-intensive industries in computers and semiconductors, health and medical care, and telecommunications made new educational demands of the workforce (Beck, 1992).

The debate about reforming Canada’s education system became even more intense in 1991 with the release of two Government of Canada discussion papers, *Learning Well . . . Living Well* (Canada, Prosperity Secretariat, 1991a) and *Prosperity Through Competitiveness* (Canada, Prosperity Secretariat, 1991b). The former proposed national learning targets for Canada: that 90% of Canadians obtain a high school diploma; that the number of post-secondary graduates in science, engineering, and technology double; that Canada become a world leader at all levels in math and science; and that there be increased representation of women in math, science, and technology programs. Not surprisingly, these education targets were very similar to U.S. President George Bush’s national
education plan released the previous year. *Prosperity Through Competitiveness* was critical of Canada’s school-to-work transition; it found schools effectively unconnected to the world of work, and it favoured a consensus to establish Canada-wide goals for education and training. Even colleges and universities were not exempt from this debate. Reports by the Canadian Chamber of Commerce (1993), *The National Direction for Learning*, and by the Economic Council of Canada (1992), *A Lot to Learn*, argued for greater emphasis on science, math, and engineering education to enable Canada to compete in the global economy and for greater congruence between education and employers’ needs. “Market responsiveness” became the magic phrase for universities, advocated by such groups as the Fraser Institute, the C. D. Howe Institute, the Conference Board of Canada, and the Canadian Manufacturers’ Association and in the media (Emberley, 1996, p. 154).

These calls for education devoted to global economic competitiveness were not based on critical analysis of the presumed link between education and the economy. Rather than investigating the impact of trade and tariff policies, the role of research and development, or the merits of enhanced industrial training in the workforce, many groups uncritically assumed that education alone drove Canada’s global prosperity.

GLOBAL ECONOMIC COMPETITIVENESS VERSUS GLOBAL INTERDEPENDENCE

By the early 1990s, it was apparent that two distinct paradigms were competing for control of the educational reform agenda: education for global economic competitiveness and education for global interdependence.

Groups advocating a paradigm of education for global economic competitiveness included the former Economic Council of Canada, the Business Council on National Issues, the Canadian Chamber of Commerce, the Conference Board of Canada, the Prosperity Secretariat of the federal Government, and the Premier’s Council of the Government of Ontario. They called for substantial business involvement in educational reform and identified areas such as math, science, literacy, and technology as important priorities in new curricular reforms. The Conference Board of Canada’s *Employability Skills Profile* (1992) focused on almost exactly the skills listed up by the U.S. Department of Labor and U.S. business groups. Harvard professor Michael Porter’s study *Canada at the Crossroads* (1991) argued that Canada’s prosperity depended on Canadian business’s forging closer ties with educational institutions, including having more direct influence on curriculum at universities, colleges, and technical institutes and on the establishment, by government, of national standards for education. The final report of Canada’s Prosperity Secretariat, *Inventing Our Future* (1992), called for a national forum on education; advocated increased interest in mathematics,
Groups that advocated the opposing paradigm, global interdependence, included the Canadian International Development Agency (CIDA) and the Roundtables on the Environment and the Economy. In Ontario, education for global interdependence was also supported by the Ontario Teachers’ Federation (OTF) and some universities’ graduate education faculties. Educators for global interdependence were motivated by the concern that students were unaware of the complex nature of global issues and trends (Roche, 1989). By 1991, CIDA had funded global education offices in eight Canadian provinces to promote relevant teacher education and curriculum development. In explaining its mandate, the Ontario OTF/CIDA global education project asserted that education must include preparation for the unprecedented rate of change in the modern world and that global concepts of social justice, peace, human rights, development, and the environment belong in the curriculum (Lyons, 1992). In April 1992, the OTF Board of Governors passed a resolution supporting education for a global perspective in the Ontario school system.

The movement favouring education for global interdependence arose from a growing conviction that education needed to prepare students for more than simply economic concerns about the global economy. Tye (1990), Hanvey (1982), Kennedy (1993), Brown (1994), and O’Sullivan (1999) have demonstrated that a wide array of global concerns—economic, technological, ecological, political, cultural, and humanitarian—should be dealt with in our educational reforms. As well, traditional standards of progress and excellence in industrial nations are being challenged in a world of global change (Berry, 1990; Daly & Cobb, 1989). Educators have had to reconsider their definitions of excellence in education and to acknowledge that a relevant curriculum must take into consideration all major global challenges. However, support for a paradigm of global interdependence was not going to figure prominently in the national education debates in Canada.

THE CMEC AND THE NATIONAL EDUCATION DEBATE

In April 1993, the federal government announced a strategy that would give it the authority to set national targets to improve education, to investigate redirecting federal tax dollars to fulfil such goals, and to mobilize public-sector and private-sector activities in support of a learning culture in Canada. The group that felt the most intense pressure to act in the wake of this federal pronouncement was the Council of Ministers of Education of Canada (CMEC). In its Victoria Declaration of September 1993, the CMEC asserted its right to act as Canada’s national voice in educational matters and committed itself to an action plan
centred on national curriculum compatibility, national testing, and a national approach to dealing with globalization of the economy. It is worth noting that the CMEC’s draft of its mission statement earlier that year included references to the importance of the environment, equity, and sustainable development—but these were not the priorities stated in the Victoria Declaration.

The CMEC’s School Achievement Indicators Program (SAIP) was its main strategy in pursuit of national educational standards. In April 1993, the SAIP assessment in math and problem solving was administered across Canada to 28,000 13-year-olds and 27,000 16-year-olds; the CMEC conducted further SAIP tests in literacy in 1994, in science in 1996, in math again in 1997, and in literacy again in 1998. Pan-Canadian education conferences, mentioned in the CMEC Victoria Declaration, were soon underway in Montreal in 1994 and in Edmonton in May 1996. By autumn 1997, the CMEC was completing a framework for a national science curriculum. That same year, it announced that it had conducted important talks with national corporations in banking, telecommunications, and high-level technology to identify the kinds of knowledge and employability skills needed in Canada’s school system (Robertson, 1998). The connectedness of national achievement to global economic competitiveness continues to be an important priority for the CMEC in Canada’s national education debates.

THE RAE GOVERNMENT AND THE COMMON CURRICULUM

Against this backdrop of national initiatives in education, some controversial developments occurred in Ontario when the NDP government under Bob Rae came to power. In January 1992, Education Minister Tony Silipo announced a major restructuring initiative for Grades 7–9 in Ontario schools that would prepare children for “an ever-changing world” and take education from an industrial society to a post-industrial world. According to Emberley and Newell (1994), much inspiration for this initiative came from the task force report of the Carnegie Council on Adolescent Development, Turning Points: Preparing American Youth for the 21st Century. In September 1992, the government announced that by September 1993, Grade 9 courses would no longer be streamed into advanced, general, and basic course levels. In addition, the Grade 9 curriculum would be converted from credit courses to integrated studies in the four core program areas: language; the arts; self and society; and mathematics, sciences, and technology. These reforms, dubbed the three “D’s” (de-labelling, de-streaming, de-coursing), were strongly criticized by parent groups and business interests. Perhaps in response to this criticism, the government announced in its 1993 Throne speech that it planned have the entire school system reviewed by a Royal Commission on Learning co-chaired by Gerald Caplan and Monique Bégin. Launched in May 1993, the Commission had a very broad mandate to examine the purpose and direction of Ontario’s school system.
The government reforms and their projected outcomes for Ontario education (Grades 1–9) were eventually detailed in several versions of the Common Curriculum, the first of which appeared in 1993 (Ontario Ministry of Education and Training, 1993). The Common Curriculum recognized the importance of global influences on education and society as well as the impact of rapidly changing technology on education in Ontario. Its final version, released in 1995 (Ontario Ministry of Education and Training, 1995), established specific outcomes for Grades 3, 6, and 9 and articulated 10 essential cross-curricular learning outcomes for Ontario, of which 3 were explicitly global. This document explicitly recognized the great importance of both global economic competitiveness and education for global interdependence. Missing from the final version was reference to a student commitment to peace, social justice, and protection of the environment. However, the document continued to draw some groups’ ire for several reasons. The Coalition for Education Reform, an educational lobby group, was generally critical of outcome-based education because it believed the system lacked any means of measuring students’ achievement in core curriculum subjects. Others thought the essential cross-curricular outcomes in the Common Curriculum depended too heavily on the Conference Board of Canada’s Employability Skills profile and were a concession to business advocacy groups (Emberley & Newell, 1994, p. 39). As one journalist noted (Lewington, 1994), the struggle to set out curricular objectives for Ontario students had been a gruelling exercise in which success eluded governments led by all three parties over the previous decade (the 1980s).

Moreover, the report of Ontario’s Royal Commission on Learning (1994) provided little investigation or analysis of the global forces affecting Ontario education. Although the Rae government made some efforts to balance the two global paradigms in its policy reforms for Ontario education—similar to the efforts of governments during the Hall-Dennis era—these efforts were insufficient to implement the new reforms in curricula or new education initiatives. In 1995, Rae’s NDP government entered a provincial election promising to act on several of the Royal Commission’s recommendations and to devise a new provincial curriculum. With the government’s defeat, any such pursuit of global goals for Ontario education as part of government policy also ended.

THE HARRIS GOVERNMENT AND THE TWO GLOBAL PARADIGMS

The election of the Harris government in Ontario in 1995 shifted the debate about educational reform from concerns over the two global paradigms to one about “rigour” in education and about cutting a billion dollars from the provincial education budget. It soon became apparent that the Harris government aimed to achieve neither global paradigm. Rather, its goal was to centralize its power over provincial education by reducing the authority of school boards and teacher
federations and to assert more control over provincial curriculum, report cards, and provincial testing. Although the Harris government did not specifically articulate a position on either global paradigm for education, it pursued the kinds of global structural adjustments typical of business corporations in the 1990s: namely, it downsized its bureaucracy, outsourced its work, privatized its workforce, centralized its operational authority, and made deep budget cuts.

The Harris government substantially cut the budget for education and made no promises that these funds would ever be reinvested in the education system. The exact magnitude of cuts is debatable, but Mackenzie (1999) argues that the Harris government cut more than $525 million prior to enacting Bill 160 (The Education Quality Improvement Act) and a further $672 million in ongoing cuts based on the Bill 160 funding formula. Bill 160 further centralized provincial control over school board funding and teachers’ working conditions, and in its earlier proposals even sought to allow uncertified teachers into the profession. The Harris government’s plan in Bill 160 to centralize its provincial authority led 126,000 Ontario teachers to strike for two weeks in the autumn of 1997. The combined result of Bill 160 and Bill 104 (The Fewer School Boards Act) was effectively to end the independence of local school boards. Bill 160 relieved municipalities of about $5.4 billion spent on schools (Middlestaedt & Rusk, 1997) and gave the provincial cabinet unprecedented power over future education tax rate increases without requiring legislative approval (Mackie, 1997).

The new provincial control over the elementary school curriculum began in September 1997 with the implementation of new Grade 1–8 Math and Language curricula containing detailed lists of mandatory expectations (followed by course outlines in other subjects). Gone were references to equity and antiracism, key concepts in the NDP’s Common Curriculum (Small, 1997). The high school reform agenda, which began in September 1999, has few links to either global paradigm. It centres on minor changes to the Ontario diploma requirements, streamed Grades 9 and 10 courses, a standardized provincial report card, proposed teacher mentors, annual education plans for students, having students perform 40 hours of community service, and the implemention of a Grade 10 literacy test.

Its failure to provide a new high school curriculum after almost three years in office was problematic for the Harris government. In January 1998, in a dramatic departure from past practice, the government announced that it would outsource the provincial curriculum on the basis of competitive bids from the private sector. This action was consistent with patterns observed by authors such as Winner (1999), who has argued that many global forces which have transformed corporate structures in the economy now promise also to alter education at all levels (leading to, for example, downsizing, outsourcing, and more part-time permanent employment). That groups or individuals wishing to bid on one of the 13 Ontario subject areas had to download the bid documents from MERX, an electronic online service (Small, 1998), provoked considerable controversy,
especially because the bidding was open to U.S. companies. Subsequent approval, in June 1998, allowing U.S textbook companies to compete for the $100 million fund for textbook sales to Ontario schools also upset Canadian publishers (Girard, 1998).

The resulting Grades 9 and 10 curriculum documents were published and distributed to Ontario schools in March 1999. They make passing reference in their introductions to the importance of their subjects in a global context (such as, in French, “to enhance tolerance and respect for other cultures” and, in the Arts, “to gain insight into the human condition”), and they include topics of global importance. However, because of the haste to provide these documents to the public before the 1999 provincial election, there was no serious debate about the overall goals and purpose of Ontario education in a global context. Perhaps the most telling absence of global goals appears in the major governance document for Ontario secondary schools, Ontario Secondary Schools Grades 9–12: Program and Diploma Requirements, 1999 (Ontario Ministry of Education and Training, 1999). Its introduction states simply that the Ontario secondary school program is “designed” to equip students with the knowledge and skills needed to lead “satisfying and productive lives in the twenty-first century” (p. 6).

CONCLUSION: EDUCATION, GLOBALIZATION, AND THE PUBLIC GOOD

For the last 30 years, Ontarians and Canadians have had pragmatic expectations for education. In continuing to support a narrow utilitarian view of education, the public’s priorities for reform remain mostly technical: instituting provincial and national assessment (SAIP), subscribing to national learning targets in education, and centralizing educational governance and power. Highly public reform agendas from other nations — in particular, U.S. thinking about educational reform and the global economy — have consistently influenced Ontario educational reforms since Radwanski.

The paradigm of global economic competitiveness has dominated educational reforms, yet there has been little debate about the problems posed by this kind of globalization. First, although students are encouraged to take challenging courses to prepare them to be part of tomorrow’s workforce, Fortune 500 companies shed more than 583,000 high-technology workers in 1993 and economic trends point to an abundance of low-wage, low-technology jobs (Boutwell, 1997). Similar Canadian studies anticipate the same low-wage job expansion (Livingstone, 1997; Paquette, 1995). As Rifkin (1997) points out, knowledge workers will never be needed in large numbers because theirs is an elite labour force in this Information Age. Second, when Canada’s global leadership is put to the test, be it by peacekeeping in Kosovo or by participating at the Kyoto environmental summit, students need global skills beyond simply an education about economic competitiveness. Third, globalization also challenges the broader public good. As Kaplan (1997) argues, the concentration of power in some 500 large corporations...
that account for 70% of the world’s trade raises new challenges for democracy and the maintenance of an informed citizenry. McQuaig (1999) argues that “good globalization” of the 1940s to the 1970s—characterized by strong national governments that exerted control over investor capital and created policies aimed at full employment and strong social programs—is today under siege and that a strong political will is required to protect the public good. As Taylor (1998) argues, in an era of globalization, the democratic nation state must remain strong because its citizens have no other instrument of democratic control to modify the ill effects of globalization. It is important that these aspects of economic globalization be understood—not only to clarify global economic trends but also to better inform debates about the goals of education in the context of globalization so as to ensure protection of the public good.

It is by no means easy to negotiate the goals of education in a global context. In doing so, one must ultimately consider the purpose of education in a global era and what constitutes a relevant curriculum in the midst of globalization. Powerful economic groups argue that the crisis before us is about success in the global economy, but this has been a clarion call from government and business since the start of the 20th century. Although preparing for the global economy is a worthwhile task for schools, an education that disregards the study of other significant global change is an incomplete education for the 21st century. To establish educational goals relevant in this era of globalization, educational reforms should include the study of all aspects of global change—changes not only in economies and technologies but also in world cultures, politics, ecology, and humanitarian issues—and of the extent to which they are all profoundly interdependent.

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