III. Globalization and the Goal of Education

Editor's Introduction

The journalist and social commentator Thomas L. Friedman asserts in *The Lexus and the Olive Tree* (2002) that "[G]lobalization involves . . . the inexorable integration of markets, nation-states, and technologies to a degree never witnessed before—in a way that is enabling individuals, corporations, and nation-states to reach around the world farther, faster, deeper, and cheaper than ever before." The integration to which Friedman refers is also creating challenges for educators, obliging them to rethink their practices. For example, teachers need to adjust their methods and their material to accommodate students in multicultural classrooms and to prepare their charges for the realities of a multicultural world. Meanwhile, schools, from the elementary to the university level, need to reevaluate their priorities as they try to find a balance between their traditional roles and the new responsibilities required of them by an increasingly dynamic and interconnected world.

The articles in this chapter explore the problems educators face in our changing world. In the first selection, "New Paradigms for 21st Century Education: An International Perspective," Victor Ordoñez and Siegfried Ramler argue that the economic and social changes brought about by globalization demand that we revolutionize our approach to education. Educational institutions, they assert, have followed the same model for centuries without concern for the distinct environments in which they are meant to function. However, the authors advise against simply replacing one approach to education with another. Rather, they call for the establishment of numerous models so that the specific needs of particular people and environments can be met.

In "College Goes Global," while not denying that the Western educational system is essentially conservative, William R. Brody counters the notion that schools, specifically universities, have been unaffected by globalization. For instance, he notes that the relationship of faculty and students to their universities has changed dramatically in recent years because of the breakdown of geographic, institutional, and disciplinary boundaries. These changes have the potential, he continues, to give rise to what he calls a megaversity, which he defines as "a research and education dynamo electronically linking the best faculty and the most capable students in a worldwide academic community." Brody ultimately rejects the idea that such a university will develop and theorizes that the strength of academic traditions, the social value colleges have for their home countries, and funding-related issues will ensure that the basic university model remains intact, even though it must continually adjust to maintain its relevance.

In "A World Transformed: How Other Countries Are Preparing Students for the Interconnected World of the 21st Century," Vivien Stewart considers how various countries are meeting the challenges of globalization, focusing specifi-

cally on how European, Australian, and Asian educators are attempting to mold their students into world, rather than just national, citizens. Stewart also examines what American educators are doing in this regard and complains that innovations in this country "are small in scale, lack the funding to reach significant numbers of students, and are not yet part of the assessment and teacher preparation systems."

The chapter concludes with Marcelo M. Suárez-Orozco's "Rethinking Education in the Global Era," in which he considers how shifting demographics and the cultural transformations that accompany them require educators to foster their students' "cognitive skills, interpersonal sensibilities, and cultural sophistication" so that they can navigate environments that are simultaneously local and transnational. "An education for the global era," he concludes, "must engender lifelong habits of body, mind, and heart. It must tend to the social and emotional sensibilities needed for cross-cultural work: empathy and learning with and from others who happen to differ in race; religion; national, linguistic, or social origin; values; and world view. They are all our brothers and sisters in the ever more diverse, interconnected, and global human family."

New Paradigms for 21st Century Education

An International Perspective

BY VICTOR ORDOÑEZ AND SIEGFRIED RAMLER
INDEPENDENT SCHOOL, SPRING 2004

When we consider priorities for the 21st century, education is at the very core of our concerns. The role of education is arguably the most critical variable in projecting a satisfactory and sustainable future for mankind. But do the present structures and approaches to education still respond to the needs and challenges of the 21st century? This question lies at the core of national and international efforts to deal with urgent issues such as universal access to education and the changed social and economic conditions prevailing in today's interconnected and globalized societies.

While our post-industrial world reflects quantum shifts in society and its fundamental institutions, education has been virtually exempt from this process of radical change. Despite the phenomenon of globalization, social, economic, and cultural gaps have become wider in most societies. Economics and technology have changed the way people live and work in advanced communities throughout the world, while vast other communities still live in cultural patterns unchanged over centuries, more deeply isolated and quagmired in poverty than ever before. And yet, for both the advantaged and the poor, the present structures for education, where it is available, remain basically the same: prescribed primary schooling of about six years, organized by age cohorts, and followed by secondary education focused on largely rigid academic subject classifications, with higher education available to a select minority. Critical problems of inequity and polarization have now far outpaced the efforts of education systems to reform themselves. These realities call for systemic changes in the approaches to education and a readiness to accept new paradigms to guide educational policy and practice. The search is not for a single new paradigm, but for as many new paradigms as are demanded by the diverse learning needs of vastly different communities and societies at different stages of development in different socio-cultural settings. The search for new paradigms does not imply rejection of the basic ethos of learning and schooling, as practiced over centuries, nor of the values of an educational process that nurtures intellectual growth and

creativity. It does recognize that much of the present structure of education and much that now occupies the time of the learner must be rethought in light of the demands of the 21st century.

Lifelong Learning

For today's learners, there is dissonance between what formal schooling offers and how they live, how they learn and acquire information, and how they prepare for work and careers. Today's learners face different life patterns. Rather than one lifelong career, they now face the probability of multiple and even simultaneous careers. The linear career pattern is replaced by a cyclical pattern where an individual may resume study to pursue another career or interest, often interchanging work, study, and rest periods several times in the life span. Even those who remain in their chosen fields find that their formal schooling did not prepare them for new workplace demands and must return for further education and training. A new paradigm for education must therefore assume a society of perpetual learning where individuals will continue to meet emerging learning needs throughout life. This calls for education that no longer takes place in a lockstep, assembly line process, depending on age clusters and a sequence of credentials, but rather for a setting where learners pick from a variety of education options at various periods in their lives. Currently, many independent education initiatives, outside of the structured school system, foreshadow a response to this challenge by offering alternatives. Home schooling has become an increasingly prevalent option for families with the commitment and skills to undertake this challenge. Other options include computer-based self-instruction, online courses, and distance learning for specific technical or even interpersonal skills. Thus, schools and universities can no longer regard themselves as the exclusive dispensers of knowledge and credentials, but must meet the challenge of finding their niche and relevance in a new environment.

Relational Skills

In the industrial society of the 19th and most of the 20th century, the workplace required a set of specific skills, largely unchanged during the work tenure of an employee. It was reasonable to assume that skills acquired and certified through schooling would fit the requirements of a given employer. In today's knowledge society, the rapid pace of change in the workplace requires flexibility, improvisation, and ability to adapt to changing needs. Rather than information for specific skills, the challenge for today's learning experience is capacity building. Rather than compartmentalized learning segments of specific subjects, a multifaceted integration of knowledge is essential to enable learners to function successfully. The development of relational skills is an essential ingredient, fostering cooperation in the planning and implementing of tasks. In many

professions, specific skills tend to be quickly outdated in the rapid pace of technological innovations. Thus, today's knowledge society places a high premium on the ability to project and to improvise. It is evident that the present system of formal schooling must explore an appropriate and realistic relationship between curriculum, study experiences, and the requirements of the workplace in the 21st century.

"Haves" and "Have-Nots"

On the other end of the socioeconomic spectrum, the vast educational needs in the disenfranchised areas of the world, not significantly affected by industrial and post-industrial development, require a new vision and new approaches to meet global challenges affecting huge populations. Millions of children lack access to basic education. In some countries children drop out of school even before completing primary education and are thus condemned to lives of poverty and illiteracy. The quality of schooling, where schooling is available, is often deficient and does not provide employable or income generating skills. In many instances, the unreached—whether they are ethnic minorities, refugees, street children, or those with special needs—remain so because they are expected to adjust and to adapt to the system, instead of the system adjusting and adapting to them. If the aim of education for ail is to be achieved, innovative ways of meeting these children's needs beyond traditional schooling will have to be found. The issue of providing access to education with limited resources demands flexibility in the provision of learning sites where needed, flexibility in providing and compensating instructors, and ways of motivating families to send children to school.

In some countries children drop out of school even before completing primary education and are thus condemned to lives of poverty and illiteracy.

For example, a response to the enormous problems of girls out of school in Rajastan, India, illustrates how emerging new paradigms represent fresh hope for combating intractable illiteracy. An NGO named Lok Jumbish established camps in various urban centers to house girls from 6 to 15 with a handful of motivated live-in teachers in a total learning environment for six months. Learning took place constantly in various forms, with girls grouped according to interest and capacity rather than by age cohort. At the end of six months, many adolescent girls who had never been to school were able to pass achievement tests to enable them to enter the fifth year of primary schooling.[1]

The provision of sufficient and competent teachers presents a huge challenge in the developing world, inadequately addressed by teacher training institutions. The response to that need requires a fresh approach and flexibility in the choice and placement of teachers where they are needed. Rather than bound by rigid methodology

and curriculum, teachers placed in regions of high need would focus on basic literacy and on the preparation of students to function adequately in their social and economic environment.

Needs of Indigenous Cultures

In facing the importance to preserve indigenous cultures through education, the example of Pacific Island communities represents a pertinent case study. Decades of education reforms have failed to provide the human resources needed to achieve social, cultural, and economic goals for these communities. Indeed, the more Western-based schooling young people in these communities receive, the less likely they are to remain in their village or on their island. Ideally, schools should help children grow intellectually and socially by expanding their understanding of their cultural heritage, so that they could discover better ways of managing their environment and their livelihood. For many postcolonial societies this has not been the case. The key challenge is to prepare young people to live successfully and productively in their own indigenous societies, if they so choose, rather than feel pressure to emigrate in search of a livelihood and opportunities elsewhere. Here the key is the provision of opportunity and choice, a provision related not only to education but also to economic conditions. Howard Gardner's call to educators to apply the concept of multiple intelligences in the teaching approach, beyond the verbal and mathematical/logical approaches underlying the present curriculum, furnishes one of the necessary responses to this challenge.[2] An approach that integrates the cultural and environmental characteristics of the society in the teaching and learning process, that nurtures environmental, artistic, and spatial intelligences particular to the society, and that builds self-esteem in the learner, represents a needed imperative for education everywhere, and particularly for indigenous communities.

Global Literacy

Life in the 21st century requires understanding, sensitivity, and skills to cope with the phenomena of globalization and global interdependence, linking the economic, political, and cultural dimensions of globalization to the process of education. Implicit in this phenomenon is the imperative at all stages of the educational process to reflect the need for individuals, communities, and nations to manage interdependence in peaceful, equitable, and sustainable ways.

Environmental awareness is an imperative that transcends national boundaries. This includes such concerns as the depletion of natural resources, the quality of the air we breathe, the quality of the world's oceans and rivers, the spread of infectious diseases, and the limits of industrial development. The environmental threat and the need for an environmental ethic represent crucial issues for education throughout the world and demand the attention of schools and curriculum developers. The implications of global interdependence for curriculum and teaching are evident. In an interconnected world, virtually every field of study, whether in the social or natural sciences, in the arts or in technology, in vocations or in recreation, has international dimensions.

As many nations come to terms with the plurality of their cultures and the artificiality of their borders, an education that ignores or downplays this diversity becomes a source of alienation and conflict. Education has not yet caught up to the realities of global interdependence and societal diversity, as evidenced by course structures, texts, and course descriptions that too often reflect a lack of integration and an outdated compartmentalization of educational experiences. The teaching of social studies furnishes a pertinent example. When history teaching and history texts are focused primarily on one's own country, placing other nations and societies into the periphery, the consequence, whether or not intended, is a deficient understanding of global linkages impacting the past, present, and future. A design of a fresh conceptual framework for curriculum, which builds on global interdependence and which places teaching and learning approaches into a global context, represents a needed first step for a paradigmatic shift.

Education has not yet caught up to the realities of global interdependence and societal diversity.

In-Service Training

Currently, teachers throughout the world receive the bulk of their professional education before they enter the profession. Their pre-service training then dominates their classroom practice for the duration of their tenure in teaching. In-service training, when it is available, tends to be sporadic and rarely involves fundamental innovations. Under these circumstances, teachers are ill equipped to master and implement the needed changes in teaching content and practice. Given the rapid pace of societal change, the current system produces a built-in obsolescence of the profession to the detriment of learners. For teacher-training institutions and the teaching profession, new paradigms imply a fundamental shift in what is taught, when it is taught, how it is taught, and what measure of success is used for evaluating the learning experience. For example, since learners tend to use only a small fraction of their formal studies of mathematics in their daily lives and careers, is the age and content sequence of mathematics teaching from basic numeracy to advanced algebra still appropriate for current needs? Are there alternative pathways for learning of different kinds of information and skills? How can the traditional structures of schooling be revised to build in the educational flexibility and content required in the 21st century? In the year 2000, The UNESCO Commission on Education for the 21st Century produced a report that summarized the mission of

education in four key pillars: learning to know, learning to do, learning to be, and learning to live together.[3] Past and current paradigms of education are skewed in favor of the first pillar—learning to know, the acquisition of information. The current ills of society—ethnic conflicts, war, environmental degradation—are the price being paid for the neglect of the other three pillars, and particularly the fourth pillar—learning to live together.

The exploration of new paradigms for education must be an internationally collaborative undertaking, calling for the commitment and efforts of visionaries in the educational arena and for a blend of idealism and pragmatism to deal with the wide range of challenges that confront us.

Education and World Change

This article grew out of a meeting of 13 key researchers, writers, and practitioners in education from the Asia-Pacific region, Europe, and the United States, who gathered in Honolulu at the invitation of the East-West Center to consider the extent to which education is meeting or failing to meet the demands and needs of global society. Discussions were based on a shared premise that existing educational systems and practices have not kept pace with quantum transformations in society, including fundamental social, economic, and technological manifestations throughout the world. Furthermore, growing interdependence among individuals, communities, and nations, an expanding poverty gap, the impact of unstable global financial systems, and global environmental and health crises represent challenges to educators to rethink the processes through which learning takes place.

Notes

1. The Lok Jumbish Project: Volume 13 of *Making it Work: Education for All* Innovation Series (UNESCO Principal Regional Office in Asia and the Pacific, Bangkok, 1999).
2. Gardner, Howard. *Multiple Intelligences*. Basic Books, Harper Collins Publishers, Inc. 1993.
3. *Learning the Treasure Within: Report of the International Commission on Education for the Twenty-First Century*, Jacques Delors, Chairman (UNESCO Publishing, Paris, 1998).

College Goes Global

The Coming Test

BY WILLIAM R. BRODY
FOREIGN AFFAIRS, MARCH/APRIL 2007

In June, students of Shengda College, in Xinzheng, China, staged one of the most disruptive and violent protests since pro-democracy demonstrators took to Beijing's Tiananmen Square in 1989. Riot police were called in, the campus was locked down, and the college headmaster eventually resigned. The students rioted because they had received diplomas imprinted with the name of Shengda College rather than ones with the name of the more prestigious Zhengzhou University, the college's nominal mother school, which they claimed had been promised to them. They felt cheated after having paid five times the tuition that Zhengzhou University students pay, and they worried that getting the lesser degree would shut them out of China's economic future.

The unusual cause of this rampage reveals much about the role of higher education in today's global marketplace. Implicit in the incident is the recognition that a college degree is an indispensable passport to the globalized knowledge economy of the twenty-first century. Higher education, once the rarefied province of the elite, is now viewed by most nations as an indispensable strategic tool for shaping, directing, and promoting economic growth. There was, of course, an explicit message in the Shengda students' actions as well: a diploma from the "right" university is incomparably more valuable than just any old degree. Meritocracy be damned: pedigree counts.

Both of these messages would seem to bode well for U.S. universities. Since the end of World War II, the United States has been recognized as the world leader in higher education. It has more colleges and universities, enrolls and graduates more students, and spends more on advanced education and research than any other nation. Each year, more than half a million foreigners come to the United States to study. A widely cited article written by researchers at Shanghai Jiao Tong University that looked at the academic ranking of universities worldwide based on faculty quality and research output found that more than half of the top 100 universities in the world—and 17 of the top 20—were in the United States.

It would also seem that higher education is a market ripe for globalization and that U.S. universities—by right of their acknowledged achievements, outstanding reputations, and considerable

advantages in size and wealth—are predestined to take on the world in the way that Boeing, IBM, Intel, and Microsoft have done within their respective industries. But as the president of a U.S. university that has operated one campus in China for two decades and another campus in Italy for more than half a century, I can say that consolidating U.S. dominance in international education will not be as easy or as likely as it seems.

The evolution of the global higher-education market, and the United States' predominant role in the field, is of great and increasing consequence both in the United States and abroad. How should U.S. institutions of higher learning—and, in particular, the United States' world-renowned system of private and public research universities—adapt to this changing environment? Is this field, like so many others in the past, destined to see the emergence of a handful of global players—educational powerhouses—that come to dominate and define it? Will the twenty-first century be the era of the "Global U"?

Trains, Planes, and Universities

When Johns Hopkins University was established in 1876, its founders hoped to depart from existing models. They took the highly unusual step of recruiting Daniel Coit Gilman, from the University of California, Berkeley, as the university's founding president. This choice was no small departure from established norms: to recruit in California from Maryland just seven years after the completion of the transcontinental railroad was an adventurous undertaking (at a time when trains averaged speeds between 25 and 35 miles per hour).

In those days, most scholars, and most people, were not freely mobile. This limitation had an important implication for faculty. If you were to become a scholar in Mesopotamian history at Johns Hopkins, for example, and you knew more than any other scholar between Washington, D.C., and New York City, you would have been in a good position to become a tenured professor. Even if you were not particularly accurate in your knowledge of the subject, your shortcomings would go undiscovered for months or even years. The diffusion of knowledge was slow, and, as a result, expertise was assessed within a local or regional context.

Today, knowledge is disseminated in seconds, and flawed information is quickly exposed. This is the effect of the "IT-IT phenomenon": cheap international travel and ubiquitous information technology combine to disassociate expertise from place. Speeches and papers appear on the Internet as soon as they are delivered or published. Theories are proved or disproved through an international network of scholars who have immediate access to the latest discoveries. Physicists in Ukraine, for example, debunked the "discovery" of cold fusion within days of the announcement in 1989. Since international air travel has become relatively affordable, the experts who generate such knowledge are also mobile.

As a result of this IT-IT phenomenon, expertise is now measured on a global rather than a local scale. It is no longer possible to depend solely on local experts for knowledge. Only if the local expert is also a globally recognized expert can you rely on your faculty colleague down the hall. On a trip to Singapore (where my university has partnered with the National University of Singapore to create a musical conservatory and where we also have a medical clinic and in-patient cancer facility), I found myself on the same plane as three Johns Hopkins faculty members: one teaches mathematics during the winter semester in Singapore, the other two were doing collaborative research with faculty at the National University. Their paychecks may state that they are employees of Johns Hopkins, but that is not what is important to their students and colleagues in Singapore—it is their world-class expertise that matters most.

Global expertise commands a premium—an academic version of the Michael Jordan phenomenon.

Global expertise commands a premium—an academic version of the Michael Jordan phenomenon. Jordan was making $33 million a year when playing basketball for the Chicago Bulls, whereas the person sitting on the bench next to him, although a very good player in his own right, was making hundreds of thousands. Why? Because Jordan was truly the world authority of basketball and was able to command a global audience. The journeyman guard playing next to him may have been fine for the local crowds in Chicago, but he was not going to have the same drawing power on a worldwide ESPN broadcast.

This new emphasis on world-class expertise fuels a global search for talent that favors universities with access to the most resources. As in other spheres of life, in education, the rich will tend to get richer and the poor increasingly will struggle to catch up. As of June 30, 2005, Harvard's endowment was more than $25 billion; Yale, Stanford, Princeton, and the University of Texas system had each reported endowments over $10 billion; 24 U.S. colleges and universities had endowments of $2 billion or more; and nearly 60 had at least $1 billion in income-generating assets. By contrast, a 2003 British study on higher education noted that just five British universities had endowments worth at least $200 million, compared with 207 universities in the United States. Only Oxford and Cambridge—with more than $4 billion each—would come in the top 150 in the world (tied at number 15). Outside the United States, only countries with rapidly growing economies, such as China and Singapore, can afford to invest heavily in making their universities world-class research institutions. In countries with slower economic growth, universities increasingly depend on nongovernmental sources of revenue, chiefly endowment income.

Like faculty, students—particularly graduate students—are drawn from a global pool. The best professors need access to the best students, and so the talent search has moved to the international arena. This explains why in U.S. universities today, roughly a third of all graduate students in science and engineering and more than half of all postdoctoral students are foreign nationals.

School Daze

Just as geographic boundaries have become less distinct in higher education, the walls between academic disciplines within universities are being torn down as well. The frontiers of research, whether in the sciences, engineering, or the humanities, are increasingly those places where teams of experts from multiple disciplines work together. For decades, the life and physical sciences were separated by impermeable barriers. Today, if barriers exist at all, they are highly porous. Contemporary advances in medical science, for instance, often cannot proceed without significant contributions from robotics, information sciences, engineering, and the physical sciences. Even problems in biochemistry, a relatively narrow field, can no longer be dealt with by the biochemist alone: you also need a molecular biologist, a biophysicist, and a physiologist.

Just as geographic boundaries have become less distinct in higher education, the walls between academic disciplines within universities are being torn down as well.

Universities must therefore develop the ability to assemble multi-disciplinary expertise. As recently as 1985, most research grants in a Johns Hopkins academic department involved that department alone or a single faculty member. A decade later, grants were often going to groups of faculty members from multiple disciplines, but for the most part still within the university. Today, very few grants are given to just a single faculty member, and about a fifth of our grants involve one or more faculty investigators not at Hopkins. For example, we received a prestigious National Science Foundation grant for robotic surgery research that involved not just a number of divisions at Hopkins, including the Applied Physics Laboratory and the School of Engineering, but also faculty members from Carnegie Mellon, the Massachusetts Institute of Technology, and Harvard Medical School.

The use of discipline-based departments has many advantages for teaching and quality assurance, but in many cases it also serves as an impediment to interdisciplinary research. Whether the barrier is geographic, financial, or bureaucratic, universities are being challenged by the need to quickly assemble interdisciplinary research teams to react to new frontiers.

The New York Times columnist Thomas Friedman might say that the academic world has gone flat. Hierarchical structures that contain expertise in divisions and departments and are under the supervision of a chair or dean apply less and less. This can perhaps

be best understood through a "quantum physics model" of the university. In the classical model of the atom, a central sphere—the nucleus—has electrons circling around it in fixed orbits. In much the same way, in the classical model of the university, faculty and students orbit around the campus, held together by commitment and tenure. Although loyal to their discipline, professors have at least as great a commitment to their institutions. Students are present all the time and feel a strong sense of loyalty to the university.

But the classical model of the university has given way to a different reality, akin to the quantum model of the atom, which has electrons acting as waves as well as particles and consequently occupying positions that cannot be pinned down with absolute precision. Today, research universities have multiple campuses—in fact, more of a cloudlike collection of sites. Johns Hopkins, for instance, has more than a dozen sites in the United States, operates research projects in 80 countries, and will probably have even more campuses in the future. Nor is Johns Hopkins unusual in this regard. The University of Maryland has a business school with programs in nine locations on four continents, including campuses in Beijing and Shanghai. Yale University celebrated its tercentenary by declaring its intent to become, in the words of its president, Richard Levin, "a truly global university" and published a comprehensive plan to achieve that goal. Carnegie Mellon has a campus in Qatar. Temple University has a presence in Japan. MIT is one of several universities with programs in Singapore. According to Newsweek International, in the past six years the number of U.S. universities with campuses abroad has doubled to about 80, and new ventures continue to arise, especially in Asia, where the thirst for higher education seems unquenchable.

But the classical model of the university has given way to a different reality, akin to the quantum model of the atom.

Faculty members are no longer in a tight orbit around a campus; they are loosely bound to their institutions. This is not without reason: the faculty has to be a collection of international experts. Professors are loyal not only to their disciplines but also to their research, and they need to work with others with the same focus. This association is natural and is now made possible through electronic connections and physical travel.

The loosening of the affiliation between faculty and universities is an inevitable consequence of the globalization of knowledge. In the quantum physics model, faculty obey a kind of uncertainty principle: you may know where a professor is at any given time or you may know his institutional affiliation. But the more you try to ascertain the former, the less sure you may be about the latter, and vice versa. This phenomenon prompted the former president of Boston University, John Silber, to actually propose taking roll call to see whether faculty members were on campus. But such a measure

would go against the grain of how knowledge is generated and diffused in today's information-sharing environment, and Silber's proposal unsurprisingly has come to nothing.

One consequence of these changes is that the relationship between faculty and universities has become more and more one-sided. Tenure provides a lifetime, no-cut contract for faculty. But professors' and researchers' allegiance is linked to their research, and they have no requirement to stay until retirement with the university that granted them tenure. At the same time, faculty whose field of study becomes obsolete or is no longer within the primary purview of the university's mission cannot be removed. This is a potential Achilles' heel for world-class universities bent on remaining relevant in an environment that places a premium on research and development and evolves at a rapid pace.

Already, increasing numbers of teaching slots at colleges and universities large and small are being filled with adjunct, part-time, and non-tenure-track faculty. But tenure remains a core value for professors, and the best and the brightest will continue to look for it. For the foreseeable future, it will remain up to universities themselves to award their lifetime contracts with great prudence and keep a watchful eye on future academic needs and evolving disciplines.

A Megaversity for the World?

All these forces at work in higher education today suggest the arrival of an entirely new institution: the "megaversity," a research and education dynamo electronically linking the best faculty and the most capable students in a worldwide academic community. Will a cartel of the richest and most aggressive schools come to embody and define the global university?

At the end of the twentieth century, the economist Peter Drucker told Forbes that the traditional university model was dead, predicting that big university campuses would be relics in 30 years. More recently, the Princeton economics professor Alan Blinder predicted in these pages ("Offshoring: The Next Industrial Revolution?" March/April 2006) that any service capable of being transmitted through a wire—especially higher education—would eventually migrate from high-cost to low-cost regions: "As college tuition grows ever more expensive, cheap electronic delivery will start looking more and more sensible, if not imperative." Drucker's and Blinder's ideas suggest that the coming changes in higher education will resemble the experience of the manufacturing sector in the first half of the twentieth century. The Ford Motor Company's state-of-the-art River Rouge Plant, for instance, employed over 100,000 workers in the 1930s, making it the world's largest integrated manufacturing facility at the time. But it has since given way to a constellation of manufacturing facilities and independent suppliers scattered around the globe. A similar development in higher education would result in radically decentralized teaching institutions consisting of loose confederations of campuses (and electronic "virtual campuses") located in different regions and countries.

In spite of these forecasts, however, the era of the global megaversity may not be at hand. Three factors, in particular, suggest a somewhat different future. First, there is the weight of tradition, and the important but hard-to-quantify value that matriculating at prestigious schools brings. Going to college or university is a means of advancing one's education through the attainment of specialized knowledge, culminating in the bestowing of a formal credential. But more than that, it is an important rite of passage as well. College students traditionally inhabit a fuzzy time between youth and adulthood; there is an enormous appeal to—and probably some good social reasons for—spending this time of discovery, of choices, and of meeting future associates and lifelong partners in such a setting. Connecting all these young men and women through a wire would not be the same thing.

The second issue that will ultimately prevent the creation of the Global U is the problem of national boundaries.

This environment is important to faculty as well. Colleges around the world may vary considerably in their layout and architecture, but almost every campus is a place apart. The term "ivory tower"—now largely understood in a pejorative sense—was originally meant to recognize and celebrate the essential separateness of the life of the mind. An ivory tower was a place of noble purity. Plato's champions reportedly raised 3,000 drachmas to buy a sacred olive grove outside the walls of Athens as the site of the Academy, home to many of the great thinkers of the Hellenic world. An essential feature of the university since its inception has been this sense of its being an exclusive and selective place apart. Pity the modern megaversity president who, to improve economic efficiency, has to inform her Nobel Prize–winning faculty member that the campus is being broken up and dispersed to countries with lower labor costs—or, worse yet, disbanded entirely

The second issue that will ultimately prevent the creation of the Global U is the problem of national boundaries. Drucker, Friedman, and others may have observed that the power of the nation-state has withered, but by no means has it disappeared. Universities and the nations they call home exist in an extremely close and elaborately constructed symbiosis. Every nation in one way or another makes significant financial contributions to its resident universities and demands considerable returns in exchange—both in numbers of qualified graduates and in terms of the economic benefits that the education and research carried out by the universities provide. Also, credentialing—always a vitally important part of the educational

process—is exclusively defined and controlled by the host nation, and it would behoove the soothsayers to remember that few nations are willing to adopt a laissez-faire attitude toward the teaching, beliefs, and activities on their campuses..

Finally, as is so often the case, the advent of the Global U really comes down to a question of money. Plato would not have had his Academy but for the generosity of friends who helped him buy the land it was built on. It was supported, according to a medieval account, by rich men who "from time to time bequeathed in their wills, to the members of the school, the means of living a life of philosophic leisure." That model of the university survives to this day. The only thing that may have changed is the question of degree. Ancient and medieval universities were expensive hobbies of the rich and the royal; today's modern research universities are several orders of magnitude more costly to run and sustain. Virtually every great university today depends on government funding, student tuitions (each of which covers only a portion of the cost of an education), alumni support, and the outstanding generosity of philanthropists to make ends meet. Even so, financing is always a struggle, and the price of a university education in the United States has marched determinedly ahead of the rate of inflation for decades now. To be successful—and even to stay in business—a global university would somehow have to garner consistent and dependable financial support from many different nations simultaneously.

So far, it has been those countries with especially deep pockets (some of the smaller Persian Gulf states), an especially profound commitment to higher education (Singapore), or unusually high growth potential (China and India) that have successfully marketed a combination of available land, government accreditation, and financial incentives to lure foreign universities to their shores. But most of this activity is brand new—especially when considered in light of the thousand-year tradition of higher education in Western civilization—and it remains to be seen whether these ventures will be viable long-term relationships or temporary accommodations born of an era of good feeling.

Think Global

Universities, like houses of worship, are among the few institutions that have survived fundamentally unchanged for centuries. Empires will rise and fall, and countless other social arrangements have, over the years, given way to political, geographic, and environmental forces. By their design, however, universities are slow, if not sometimes unable, to change. This inertia has been their intrinsic advantage. Yet today they are subject to the same forces and stresses created by globalization that confront all other aspects of society.

Increasingly, there are serious disputes revolving around who should own the rights to the intellectual property generated by faculty, the increasing mobility of professors and researchers, and the responsibilities of universities to their tenured staff. The productive faculty of today may be rendered less relevant to the research agendas of tomorrow as the pace of discovery quickens. Ultimately, the ability of universities to reconfigure their educational and research efforts will depend on the agility of their faculty and the porousness of their traditional boundaries.

For nearly three-quarters of a century, scientific research was largely the province of the United States and Europe. Now, emerging countries—especially in Asia—increasingly are significant contributors to science and technology, and this trend is likely to continue for the next half century or more. Existing research universities are liable to lose their leading role unless they are able to form, or join, worldwide networks of researchers working at the frontiers of knowledge.

The United States' oft-cited head start in universalizing higher education is also dwindling. Whereas Americans used to clearly lead the world in areas such as college participation rates and the breadth and diversity of higher education, the rest of the world has been catching up. Higher-education enrollment has increased by more than 30 percent in the United Kingdom in the last two decades and in France by an astounding 72 percent. China quintupled its number of college graduates in the past seven years alone. And for the first time since the late 1800s, the United States no longer has the world's highest rate of young students going on to postsecondary institutions. That honor now goes to Canada, with the United States and Japan close behind.

At first blush, it seems hard to imagine two less similar entities than a multinational oil company and a prestigious regional research university. Yet they are very similar in this one respect: both must ultimately respond to the fundamental need to go where the resources are. Almost 70 years ago, the Standard Oil Company of California discovered oil in Dammam, Saudi Arabia, after four years of unsuccessful drilling. A similar dynamic is increasingly under way in research and higher education today, propelled in no small part by open borders, jet transportation, instantaneous communications, and over one billion English speakers—the same factors that are fundamentally reshaping international commerce and the creation and distribution of wealth. Universities must prospect for the best brains, skills, and talent. In recent years, it has increasingly become evident that they will have to go far beyond their traditional borders to find those resources.

A World Transformed

How Other Countries Are Preparing Students for the Interconnected World of the 21st Century

BY VIVIEN STEWART
PHI DELTA KAPPAN, NOVEMBER 2005

Globalization is the central feature of our time. As global networks expand, countries in every corner of the Earth are affected. Major forces are driving change at an accelerated pace, creating new challenges for education systems worldwide. The globalization of economies has meant that an increasing proportion of jobs is tied to international trade. New discoveries in science and the rapid spread of new technologies are "flattening the world" and organizing work in virtual, not just physical, communities.[1] Demographic movements are increasing student diversity in schools in many nations worldwide. Changing opportunities—such as increasing access to education and health services for all—and changing threats to human security—ranging from environmental degradation and climate change to global diseases, terrorism, and weapons proliferation—are driving international cooperation across a wider range of occupations than ever before.

Do American students have the knowledge and skills to function effectively and be leaders in this increasingly interconnected world? Last year, Harvard University released the report of its first major review of the undergraduate curriculum in almost 30 years. The study concluded that, in a fast-changing world, students urgently need a deeper understanding of the principles of science and a far greater grasp of international affairs. It recommended significant reforms of the undergraduate curriculum to ensure more substantial international knowledge and experience and stronger foreign language skills for graduates, who will need to be "globally competent."[2]

However, while U.S. higher education is moving to internationalize its curriculum, K–12 education trails far behind. Studies by the Asia Society and the National Geographic Society have identified a huge gap in most American students' knowledge about Asia and other regions of the world that are vital to our nation's economic prosperity and national security. When compared to students in

eight other industrial countries, young Americans are next to last in their knowledge of geography and current affairs.[3] And the U.S. has very little capacity in Asian languages.

How are other countries addressing the need for "global competence and global citizenship"? Of the many approaches to teaching about the world, world geography, world history, foreign languages, citizenship education, and global or development education are the most common. However, science, literature, and the arts can all incorporate international content and perspectives. Unlike other, more traditional areas of educational discourse—literacy, math, and science, for example—there is very little systematic research on this emerging issue. No comprehensive account of what other countries are doing exists, nor is there even agreement on definitions. However, I will highlight here some trends and innovative efforts from around the world and the different forces that are driving them.

Europe

According to a recent study by the IEA (International Association for the Evaluation of Educational Achievement), rapid economic and political change in Europe—the transition to market economies and democratic structures in Eastern Europe and the creation of a new supranational structure, the European Union—is focusing educators' attention on preparing students for changing political and economic realities.[4] At the same time, there are efforts to align education with the economic development and international relations goals of governments—goals which have grown increasingly global.

In the United Kingdom, for example, the Department of Education and Skills has set out a vision: "The people of the U.K. should have the knowledge, skills, and understanding they need to live in and contribute effectively to a global society and to work in a competitive global economy."[5] This vision includes incorporating a global dimension into the learning experiences of all children; beginning foreign language instruction earlier (age 7) and ensuring that, by 2010, all students will have the chance to learn at least one other language; establishing an International School Award program to encourage schools to integrate international content into their curriculum; and creating partnerships with schools in other countries through the Global Gateway website. Simultaneously, the U.K. Department for International Development is encouraging education about economic development by disseminating and providing teacher training for a curriculum that focuses on the Millennium Development Goals of the U.N.

Sweden, Finland, and Holland, all countries with strong education systems as measured by international assessments, are increasing their emphasis on development/global education, languages, and world geography. In France and Italy, world geography and world history are mandatory subjects of study, beginning in the early

grades. Of great importance, most European countries start a first foreign language in the elementary grades, and many are raising their requirements for second foreign languages. Another recent initiative is the European Strategy Framework for Improving Global Education, which was created at a conference in Maastricht, Netherlands, in 2002, under the auspices of the Council of Europe.[6] As in the U.K., global/development education is promoted primarily by international development agencies (both governmental and nongovernmental) and is not yet in the mainstream of education. In Eastern Europe and the former Soviet Union, on the other hand, the dominant focus has been on introducing international economics education and Western approaches to social science.

Australia

In the early 1990s, the Australian government decided to engage more deeply with Asia for economic, demographic, and security reasons. In an examination of their system, Australian educators found that the schools' instruction on Asia was very basic and shot through with exotic stereotypes. Accordingly, the government established and funded the Asia Education Foundation as a national organization to promote the study of Asia and Asian languages in Australian schools. Over a 10-year period, the foundation produced materials to help teachers infuse the study of Asia into different curriculum areas, provided professional development to 100,000 teachers, helped 900 teachers take postgraduate programs in teaching Asian studies, and enabled 2,000 teachers to participate in study tours in the region.

Today, about half of Australian schools teach about Asia in a sustained and systematic way, and another quarter do it somewhat superficially. In addition, between 1994 and 2000, the learning of Asian languages increased significantly, and 23% of students now study one of the four languages identified as priorities—Japanese, Bahasa-Indonesian, Chinese, and Korean.[7] Increasing students' ability to navigate the thriving Asian economies clearly will provide economic benefits to Australia, and growing numbers of Asian students also see Australia as an attractive alternative to the U.S. for university study.

Asia

As part of the dramatic modernization of its education system, the People's Republic of China is developing an increasingly international focus in its schools. English is now the second language of China and will be taught to all students from third grade on. China's schools are teaching world history and world geography, and the Project on Education for International Understanding is updating textbooks through the addition of more international content. Schools are encouraged to host visiting international teachers, especially from English-speaking countries. Teachers are encouraged to study abroad, and schools are strongly encouraged to form sister-school partnerships with schools in other countries. While these changes have not yet extended to its vast rural areas, where basic education is still underdeveloped, China's intention is clearly to prepare young people to be able to function in an increasingly complex and interconnected world.

After World War II, the education system in Japan was changed dramatically to include the teaching of English and an emphasis on international exchange. In the 1980s and 1990s, corporations pressed for more international curricula to keep the country globally competitive. Multicultural and human-rights education were also popular, partly in response to the increasing numbers of Koreans living in Japan. And Mandarin is now being introduced as an important language of study. However, as in most countries around the world, schooling is still seen as a major force in the building of national loyalties, despite the addition of some international elements described above.

After World War II, the education system in Japan was changed dramatically include the teaching o English and a emphasis o internationa exchange.

South Korea, Singapore, and Taiwan have focused on the adoption of master plans to put high-speed computers in schools as a means of connecting their students to world knowledge. In this way, these nations are also encouraging more student-directed work to supplement the traditional teacher-directed approaches.

Media, Technology, and International Exchange

In addition to updating and "internationalizing" their school curricula, countries can take advantage of the vast new media and information-technology resources to teach their students about the world. Since studies of children's television use in more than 23 countries have found that 12-year-olds tend to watch about three hours of television a day no matter where they live, and since access to computer and information technology is rapidly increasing around the world, it is arguably the case that these are the most significant instruments of international education in most countries. Unfortunately, the content of television leaves much to be desired for such purposes, although there are outstanding examples of explicit use of "edutainment" to promote cross-cultural understanding and overcome past hatreds.[8]

Information technology is increasingly being harnessed by educators in many countries to teach about the world. Whether by accessing newspapers from different countries, taking part in global data-collection projects in science, or linking classrooms for language or cultural exchange purposes, schools in many countries are being encouraged to use technology to help students learn "with" and not just "about" their peers in other nations. Although there are no systematic data on the numbers of such "virtual" school-linkage

projects, data from iEARN, one of the largest organizations facilitating such linkages, suggest that, despite the scale of technology available in U.S. schools, only 1,500 of the more than 20,000 classrooms participating in iEARN projects are in the U.S.[9]

With international travel far easier than ever before, there is an increasing emphasis on studying abroad as a means of exposing students in a powerful way to other cultures. The number of U.S. students who study abroad is increasing but remains low compared with the figures for other countries. Less than 0.5% of U.S. students studied abroad in 2000, compared with 3% for France and China, 16% for Ireland, and 30% for Singapore.

How Does the U.S. Compare with Other Countries?

In the U.S. there is considerable ferment with regard to these issues. As the November 2004 special section of the *Kappan* pointed out, local schools have launched hundreds of grassroots efforts to try to prepare students for a more global world.[10] States are taking steps to prepare a more globally sophisticated work force through creating new policy frameworks and new curricular and professional development initiatives, using distance education and online courses, encouraging partnerships with schools in other countries, and creating internationally themed schools as part of their high school redesign efforts. There is also clear and growing interest among students in more international content and in opportunities to learn world languages, especially Chinese.

However, these innovations are small in scale, lack the funding to reach significant numbers of students, and are not yet part of the assessment and teacher preparation systems. Moreover, despite persistent calls from the U.S. State Department, the U.S. Defense Department, and the business community to expand the nation's capacity in a wider range of major world languages, there has been no significant national initiative to address the issue. While there are vehicles for structured interaction between countries on such subjects as science, math, and technology, there is also a need for more systematic research on the effectiveness of different approaches to global education and for cross-national sharing of best practices as educators strive to give their students new international skills for a new Global Age."[11]

1. Thomas L. Friedman, *The World Is Flat: A Brief History of the Twenty-First Century* (New York: Farrar, Straus & Giroux, 2005).
2. *A Report of the Harvard College Curricular Review* (Cambridge, Mass.: Harvard University Faculty of Arts and Sciences, April 2004).
3. National Commission on Asia in the Schools, *Asia in the Schools: Preparing Young Americans for Today's Interconnected World* (New York: Asia Society, 2001); and "National Geographic/Roper 2002 Global Geographic Literacy Survey," November 2002, www.nationalgeographic.com (search on the title).

4. Judith Torney-Purta et al., *Citizenship and Education in Twenty-Eight Countries: Civic Knowledge and Engagement at Age Fourteen* (Amsterdam: IEA, 2001).
5. *Putting the World into World-Class Education* (London: Department for Education and Skills, 2004), p. 1.
6. Ida McDonnell, Henri-Bernard Solignac Lecomte, and Liam Wegimont, *Public Opinion Research, Global Education and Development Cooperation Reform: In Search of a Virtuous Circle* (Maastricht: Europe-Wide Global Education Congress, 15–17 November 2002).
7. *States Institute on International Education in the Schools Report* (New York: Asia Society, 2003), p. 26.
8. Ellen Wartella and Gary E. Knell, "Raising a World-Wise Child and the Power of Media," *Phi Delta Kappan*, November 2004, pp. 222–24.
9. Linda G. Roberts, "Harnessing Information Technology for International Education," *Phi Delta Kappan*, November 2004, pp. 225–28.
10. Emily Sachar, *Schools for the Global Age* (New York: Asia Society, 2004).
11. Kenneth A. Tye, *Global Education: A Worldwide Movement* (Orange, Calif.: Interdependence Press, 1999); and *Building National Capacity in Chinese* (New York: Asia Society, 2005).

Rethinking Education in the Global Era

BY MARCELO M. SUÁREZ-OROZCO
PHI DELTA KAPPAN, NOVEMBER 2005

Human societies, in all their breathtaking differences, face a common task: transferring a range of skills, competencies, values, and sensibilities from one generation to the next. The socialization of the young is culturally defined, highly varied, and constantly evolving. If societies are to succeed, parents and guardians need to enable the next generation to carry on with the work of culture. I argue here that socializing youths to carry on with the work of culture in a global era means preparing them to engage with a world of ever growing diversity and complexity.[1]

Globalization

There are many debates about globalization. The term itself is a bit of a Rorschach test, for it can be quite ambiguous, polymorphous, and mean very different things to different folks. For some it is a panacea; for others, a curse. For some it is radically new; for others, merely old wine in a new bottle.

Some aspects of globalization are clear and beyond dispute. Globalization is about flow: mobile capital; the mobile production, distribution, and consumption of goods and services; mobile populations; and mobile cultures. The rate of change today is of an order never seen before.[2] In addition to ever more affordable international transportation, the high-octane fuel that gives globalization its speed comes in the form of new information, communication, and media technologies that connect people, ideas, and data across the world instantaneously. These communication innovations, especially high-speed, low-cost connections and the digitalization of data, put a premium on knowledge-intensive work and have made possible the de-territorialization of certain jobs. Jobs that are rules-based and easily broken down into constituent units can now be done from anywhere in the world. For example, data for a tax company based in Boston can be entered in Bangalore, or x-rays for a hospital in Brussels can be read and analyzed in Buenos Aires. And both services can be rendered at a fraction of what they would cost in the home countries. In colloquial American speech, this is known as the "outsourcing" of high-end jobs.[3]

Globalization, in John Coatsworth's words, is "what happens when the movement of people, goods, or ideas among countries and regions accelerates."[4] It is relevant to education because it will increasingly define the contexts in which young people growing up today will live, learn, love, and work. In the 21st century, the fortunes, identities, opportunities, and constraints of children and youths growing up in Marrakech, Melbourne, Memphis, Monterrey, Montreal, or Montevideo will be linked to processes in economy, society, and culture that are increasingly global in scope. Globalization will affect schooling worldwide because of a general convergence: by de-territorializing the competencies and sensibilities that are rewarded, it generates powerful centripetal forces on what students the world over need to learn to emerge as productive, engaged, and critical citizens of tomorrow.

With global migrations come new demographic realities and cultural formations.

Demographics and Culture

But globalization should not be reduced to global competition in economy and work; it is also about demographic and cultural transformations. Because of globalization, nearly all regions of the world are deeply involved in growing migratory flows, as countries send emigrants to new destinations, as countries receive large numbers of immigrants, or as countries serve as way stations for these transfers.

With global migrations come new demographic realities and cultural formations. The children of immigrants are now the fastest-growing sector of the population of young people in a number of advanced post-industrial nations such as Canada, the United States, Sweden, Germany, and France. But other regions of the world are also experiencing massive population movements because of globalization. The insertion of China into the global economy has led to one of the largest migrations in human history: over 150 million human souls are now migrants from the rural hinterlands of the country into its great coastal cities.[5]

The work of education will henceforth be tending to the cognitive skills, interpersonal sensibilities, and cultural sophistication of young people whose lives will be engaged in local contexts yet suffused with larger transnational realities. An education that is neither anachronistic nor irrelevant to the new world will need to focus on the two domains that define the global era: *difference* and *complexity*.

Global Classroom

There are few models of what schooling might look like if it is to be in synch with the new global dynamics. Earlier this year I had the opportunity to spend time at the Tensta Gymnasium, an experimental high school outside Stockholm—next to Kista, which is known in Sweden as "Europe's Silicon Valley." The students in the biology class I observed came from Iran, Iraq, Somalia, Ethiopia, the former Yugoslavia, and Chile, and there were even a few from Swedish homes. More than 80% of the students in the school were of immigrant and refugee origin; approximately 40% of all students in Stockholm schools are foreign-born or children of foreign-born parents.

The school had been struggling with declining enrollments (Sweden is an all-voucher system), an epidemic of student boredom, and a dropout problem. An ambitious new program, modeled on the Ross School in East Hampton, New York, was put in place two years prior to my visit. The Ross School approach is based on the idea of lifelong engagement in learning and well-being. Its integrated cultural history curriculum facilitates in-depth mastery of disciplinary subjects as well as interdisciplinary habits of mind. The Tensta administrators introduced a number of curricular, pedagogical, and architectural innovations designed to enhance student engagement. These included a series of new, integrated units, a new cafeteria serving balanced meals, and a shift to team-teaching. Intensive teacher training was provided, and the teachers became part of newly formed interdisciplinary teams assigned to jointly teach groups of students.

There are few models of what schooling might look like if it is to be in synch with the new global dynamics.

The students at this school all spoke some English, in addition to their own home languages and Swedish. They all had wireless PCs and were quite involved in an Internet-based research project, visiting sites in multiple languages and e-mailing peers across the aisles and around the world.

The teacher of the class I observed worked to integrate the biology unit with materials from culture and geography relating to the origins of agriculture in Mesopotamia—the area of the world where many of the students originated. What struck me about this classroom was how an experienced teacher, working in a media-rich environment, enabled a highly heterogeneous group of students to sustain a deep engagement with complex interdisciplinary materials. A student from Chile, who was working closely with a classmate from the former Yugoslavia and a young woman from Iran, was excited to showed me how she had found important data for their joint research project that they had not been able to find on Swedish-language sites. Where? On a Spanish-language website.

During my visit, the teacher encouraged the students to work in teams and creatively scaffolded their knowledge to achieve a higher-order understanding of the problem at hand. She also encouraged the students to reflect on their own learning by subtly suggesting how they could apply what they had learned in other units to the new problem, thus nurturing their metacognitive abilities.

Toward the end of my visit, I asked some of the students what they thought about the new program at Tensta. The laptops, they said, were a great idea, certainly at the top of their list, along with the better food in the cafeteria and the fact that teachers now had to work in teams. A student from Somalia said, "Now we learn better because we go over similar problems from many different perspectives." By the end of the third year, word of mouth was that Tensta had become a "hot" school with an innovative program. Enrollment was up, and teachers and students seemed to agree that the changes had succeeded in engaging a highly diverse group of students in ways not seen before. I asked a teacher how she knew that her students were more engaged now, and her answer said it all: "They stay working on their project during recess."

Classrooms such as those at Tensta will become increasingly common in the world's global cities. The dynamics at work there encompass the main forces that define globalization in education today: increasing diversity, increasing complexity, the premium on collaboration, the need to take multiple perspectives on problems, and the premium on moving across language and cultural boundaries.

Working with Difference

Globalization is changing the ways we experience national identity and cultural belonging. Identity and belonging are now complicated by the increasingly fluid political and cultural borders that once separated nation-states and the people within them. Managing difference—and the friction it creates—is becoming one of the central functions of the modern nation-state. From England to Sweden, Brazil to Bolivia, Indonesia to Malaysia, Iraq to Turkey, working with difference calls forth a new educational agenda.[6]

Children growing up today are more likely than in any previous generation to face a life of working, networking, loving, and living with others from different national, linguistic, religious, and racial backgrounds. The Tensta classroom is a microcosm of the classroom of tomorrow. Students are challenged to engage and work through competing and contrasting cultural models and social practices, adjusting to and accommodating differences in such areas as kinship, gender, language, and the complicated interrelationships of race, ethnicity, and inequality. Transcultural communication,

understanding, empathy, and collaboration are no longer abstract ideals. It is not as simple as the one-way assimilation and accommodation of ethnic, racial, linguistic, and religious minorities learning the codes of the majority society in order to get along and get ahead. Much more is needed: majority children too will benefit by mastering the sensibilities and codes of other cultures.[7]

The pandemic of boredom among children and youths in European and U.S. schools stems from the redundancy in much of today's schooling.

The friction that meaningful cultural contact and incommensurable difference generate can be a threat if mismanaged—as intergroup violence and anomie in multicultural cities suggest. But friction can also generate constructive energy. When contrasting cultural models and social practices come together in multicultural schools, they can be put to good use to nourish the cognitive and metacognitive skills required to examine and work through problems from multiple perspectives. When intercultural difference interrupts "thinking as usual"—the taken-for-granted understandings and world views that shape cognitive and metacognitive styles and practices—it can do the most for youths growing up today. Freely, fully, and respectfully arguing within a framework of difference is good preparation for dealing with the complexities of the future.[8]

Working with Complexity

Globalization engenders complexity. It is generating more intricate demographies, economies, politics, environmental choices, scientific realities, technology and media, cultural facts and artifacts, and identities.[9] Entire continents are undergoing intense cultural transformations. Economies likewise must adapt to the new, complex forces brought about by global capital. Local politics, too, will be stretched in new ways, as "absentee citizens" in the diaspora exercise political power in the communities they leave behind.[10]

An intellectually curious, cognitively autonomous, socially responsible, democratically engaged, productive, and globally conscious member of the human family in the 21st century cannot be educated in the 20th-century factory model of education. The regimented mastery, internalization, and mechanical regurgitation of compartmentalized facts and rules that served the Industrial Age are anachronisms. The pandemic of boredom among children and youths in European and U.S. schools stems from the redundancy in much of today's schooling—surely the elephant in the classroom in the rich societies of the North.[11] Even more alarming than boredom is the widely acknowledged failure in these societies to properly engage, educate, and integrate large and growing numbers of racial and ethnic minorities, including immigrant and refugee-origin

youths. "Homegrown" terrorist attacks, as the subway bombings in London in July 2005 appear to be, represent a failure to educate and engage large and growing populations of racial and ethnic minorities.[12]

Engaging the World

An education for the global era is an education for lifelong cognitive, behavioral, and relational engagement with the world.[13] The skills and competencies needed for identifying, analyzing, and mobilizing to solve problems from multiple perspectives will require individuals who are intellectually curious and cognitively flexible, tolerant of ambiguity, able to synthesize knowledge within and across disciplines, culturally sophisticated, and able to work collaboratively in groups made up of individuals from diverse backgrounds.[14] An education for globalization should aim for nothing more—and nothing less—than to educate "the whole child for the whole world," the words used by George Lakoff to describe the Ross School, a school that takes the new global reality seriously.

An education for the global era must engender lifelong habits of body, mind, and heart. It must tend to the social and emotional sensibilities needed for cross-cultural work: empathy and learning with and from others who happen to differ in race; religion; national, linguistic, or social origin; values; and world view. They are all our brothers and sisters in the ever more diverse, interconnected, and global human family.

1. See, for example, Marcelo M. Suárez-Orozco and Desirée Qin-Hilliard, eds., *Globalization: Culture and Education in the New Millennium* (Berkeley: University of California Press, 2004). See also John Arnett, "The Psychology of Globalization," *American Psychologist*, vol. 57, 2002, pp. 774–83. For the socialization of culturally privileged skills and sensibilities, see Robert A. Levine et al., *Child Care and Culture: Lessons from Africa* (Cambridge: Cambridge University Press, 1994).
2. Anthony Giddens, *Runaway World: How Globalization Is Reshaping Our Lives* (New York: Routledge, 2000).
3. For a scholarly account of this process, see Frank Levy and Richard J. Murnane, "How Computerized Work and Globalization Shape Human Skill Demands," paper presented at the First International Conference on Globalization and Learning, Stockholm, 17–18 March 2005. For a journalistic account, see Thomas L. Friedman, *The World Is Flat: A Brief History of the Twenty-First Century* (New York: Farrar, Straus & Giroux, 2005).
4. John Coatsworth, "Globalization, Growth, and Welfare in History," in Suárez-Orozco and Qin-Hilliard, p. 38.
5. See Rachel Murphy, *How Migrant Labor Is Changing Rural China* (Cambridge: Cambridge University Press, 2002). See also Huang Ping and Zhan Shaohua, "Internal Migration in China: Linking It with Development," paper presented at the IOM-DFID-CASS Regional Conference on Migration and Development in Asia, Lanzhou, China, March 2005.
6. See Marcelo M. Suárez-Orozco, "Globalization: Culture and Education in the New Millenium," in Suárez-Orozco and Qin-Hilliard, pp. 1–37. For an examination of the cultural frictions generated by globalization, see Richard Shweder, Martha Minor, and Hazel R. Markus, *Engaging Cultural Differences: The Mul-*

ticultural Challenge in Liberal Democracies (New York: Russell Sage Foundation, 2002).

7. See Doris Sommer, "American Projections," in Marcelo M. Suárez-Orozco and Mariela Páez, eds., *Latinos: Remaking America* (Berkeley: University of California Press, 2002), pp. 387–96.
8. Ibid.
9. See, for example, Arjun Appadurai, *Modernity at Large: Cultural Dimensions of Globalization* (Minneapolis: University of Minnesota Press, 1996); and Néstor García Canclini, *Hybrid Cultures: Strategies for Entering and Leaving Modernity*, trans. Christopher L. Chippari and Silvia L. López (Minneapolis: University of Minnesota Press, 1995).
10. See Peggy Levitt, *The Transnational Villagers* (Berkeley: University of California Press, 2001).
11. See Carola Suárez-Orozco and Marcelo Suárez-Orozco, *Transformations: Immigration, Family Life, and Achievement Motivation Among Latino Adolescents* (Stanford, Calif.: Stanford University Press, 1994).
12. See Carola Suárez-Orozco and Marcelo Suárez-Orozco, *Children of Immigration* (Cambridge, Mass.: Harvard University Press, 2001). See also Rita Sussmuth, "Globalization and Learning," keynote address, First International Conference on Globalization and Learning, Stockholm, 17–18 March 2005. For a journalistic account of the schooling of immigrant and refugee-origin youth in Germany, see Erik W. Robelen, "The Great Divide," *Education Week*, 11 May 2005, pp. 31–35.
13. See Carola Suárez-Orozco and Marcelo Suárez-Orozco, *Moving Studies: Immigrant Youth Adapt to Change* (Cambridge, Mass.: Harvard University Press, forthcoming).
14. See Howard Gardner, "How Education Changes: Considerations of History, Science, and Values," in Suárez-Orozco and Qin-Hilliard, pp. 235–58; and *The Definition and Selection of Key Competencies: Executive Summary* (Paris: Organisation for Economic Co-operation and Development, 2005).