GOALS OF UNIVERSAL BASIC

AND SECONDARY EDUCATION

Joel E. Cohen

Introduction

What should be the goals of basic and secondary education of high quality? Which, if any, of these goals should be universal? What does ''universal'' mean? What happens when educational goals conflict? Who decides these questions, and by what process do they decide? How should the quality of decisions about educational goals be evaluated?

Attention to educational goals is intrinsic to achieving educational quality. Knowing where one wants education to go, ultimately or incrementally, facilitates deciding whether one is getting there effectively. The international movement toward universal primary education in the final decades of the 20th century largely sidestepped trying to define goals, perhaps because of the difficulty of arriving at an internationally acceptable consensus or clarity on points of disagreement. Yet the same international community promoted educational assessments as a means to improve educational quality. Such assessments are most useful if they measure what education is trying to accomplish.

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The project on Universal Basic and Secondary Education (UBASE), based at the American Academy of Arts and Sciences in the United States, recognized a lack of consensus or even discussion on the desired content and aims of basic and secondary education and on who should decide content and aims. Acting on the conviction that questions of educational goals were too important to leave without discussion, the project invited individuals from different geographic, cultural, professional, and religious backgrounds to address these questions. Their written responses, which will be published in a separate volume referred to here as the UBASE Goals volume, propose a great diversity of educational goals. They illustrate the challenges the international community will face in trying to set educational goals as part of efforts to improve the quality of education. Although the proposals vary with their authors' political, economic, social and religious contexts, they provide valuable material for an informed international discussion of the goals of education. Such a conversation is necessary for effective educational policy.

This essay, extracted from the Introduction to that UBASE Goals volume, discusses educational goals for universal basic and secondary education. It suggests some of the difficulties that may explain the great diversity of educational goals. The purposes of this essay are to stimulate attention to educational goals on the part of individuals, families, educational professionals, community leaders in business, religion, and politics, local governments, national governments, and international organizations, and to provide some starting points for future discussions.

This essay has several major themes. Rich countries and poor should devote more attention to the goals of basic and secondary education. At least three broad kinds of educational goals are important: political (or civic), economic, and individual; and these categories are not mutually exclusive. The goals of basic and secondary education should support making a bigger pie (better technology), bringing fewer forks to the table (lower fertility, rational consumption), and practicing better manners (less violence, less corruption, fewer barriers to economic rationality, more equity within and between societies, more acceptance of other societies and cultures). Basic and secondary education that supports a bigger pie, fewer forks, and better manners will need to recognize explicitly the importance and complementarity of developing both the intellectual and the emotional capacities of all children. This essay leaves major questions unanswered, but will have succeeded if it contributes to broadening and deepening conversations about the goals of education.

Historical and recent perspectives on the goals of education

People have been worrying about the purposes of education for at least 2500 years in most cultures with a written record, ranging from Confucius in the east to Socrates in the west. Beliefs about these purposes influenced the educational models people developed, as well as the range of people to whom education was offered.

During the two millennia up to the middle of the 20th century, the goals of education in the Western world shifted gradually and incompletely from a focus on elites to a focus

on all citizens (initially narrowly defined by gender and race), and then nominally to all children. The major changes were, not surprisingly, driven by changes outside of educational systems: the rise of nation states in Europe, the rise of democracy in North America, the widespread demand for skilled labour associated with the Industrial Revolution, and the availability of cheap books and newspapers as a result of the invention and diffusion of printing. As the need to educate more people grew in the United States and Europe, the institutional model of education by means of scheduled and graded classes largely locked into nationally or locally prescribed curricula triumphed over earlier models as the best suited to modern needs. The dominance of political and economic interests in education ensured that the goals of education usually reflected those political and economic interests.

In the second half of the 20th century, the rise of international institutions that took primary and secondary education into their purview led to confrontations between Western educational thinking and the goals and values of some non-Western societies. The results were sometimes friction at points of contact and sometimes reluctance to engage in contact where friction would be expected to follow, especially in international institutions governed by consensus. These cross-cultural contacts stimulated some people to want education to prepare people to deal with cross-cultural contacts and conflicts.

When international institutions did espouse educational goals, the goals were sometimes stated at a level of abstraction insufficient to guide action. The role of education in promoting cross-cultural understanding was stressed above others in the Convention on the Rights of the Child (1990), which entered into force (in United Nations' language) in 1990. All countries of the world have adopted the Convention by ratification, accession or succession, except two (Somalia and the United States of America, which signed but had not ratified it as of 9 June 2004) (Office of the United Nations High Commissioner for Human Rights, 2004). The Convention proposed educational obligations in Article 28 and educational goals in Article 29. The Convention called for universal primary education and encouraged the development of "different forms of secondary education, including general and vocational education." It detailed the aims of education to which participating states agreed (Article 29):

- The development of the child's personality, talents, and mental and physical abilities to their fullest potential;
- The development of respect for human rights and fundamental freedoms, and for the principles enshrined in the Charter of the United Nations;
- The development of respect for the child's parents, his or her own cultural identity, language and values, for the national values of the country in which the child is living, the country from which he or she may originate, and for civilizations different from his or her own;
- The preparation of the child for responsible life in a free society, in the spirit of understanding, peace, tolerance, equality of sexes, and friendship among all peoples, ethnic, national and religious groups and persons of indigenous origin;
- The development of respect for the natural environment.

The operational effect of these aims has been unclear sometimes. John Daniel, then head of the Education Sector at UNESCO and former rector of the Open University, put it

bluntly (Daniel, 2002): "If declarations and exhortations alone could produce textbooks that are suffused with respect for human rights, universal values and fundamental freedoms[,] we should have got there a long time ago. Sadly, ... Respect for human dignity and difference is in short supply in many parts of the world. UNESCO is frequently asked to prevent textbooks being vehicles for intolerance and hatred." Textbooks in many countries present views of in-groups and out-groups that are controversial for some in-groups and some out-groups. Recent examples may be drawn from, among many others, Japan (International Movement Against All Forms of Discrimination and Racism Japan Committee, 2001; Onishi, 2006), Bosnia and Herzegovina (Low-Beer, 2001), Pakistan (Ansari, 2004; Sarwar, 2004), Croatia (Kovac, 2002), and Saudi Arabia (Ackerman, 2006; Center for Religious Freedom, 2006; Shea, 2006).

Like the Convention on the Rights of the Child, the report to UNESCO of the International Commission on Education for the 21st Century, *Learning: The Treasure Within* (henceforth the Delors report) (Delors et al., 1996), affirmed the role that education should play in promoting cross-cultural understanding: "We must be guided by the Utopian aim of steering the world towards greater mutual understanding, a greater sense of responsibility and greater solidarity, through acceptance of our spiritual and cultural differences. Education, by providing access to knowledge for all, has precisely this universal task of helping people to understand the world and to understand others" (Delors et al., 1996). The report described "four pillars of learning":
- learning to know, including learning to learn throughout life;
- learning to do, to deal with many situations and work in teams;
- learning to live with others, to understand other people, appreciate interdependence, and manage conflicts with respect for pluralism and peace;
- learning to be, to develop one's personality, and to act with autonomy, judgment and personal responsibility.

The Convention on the Rights of the Child and the Delors report indicated an international consensus that education could serve international political purposes, a belief shared by some scholars of education (e.g. Nussbaum, 1997, 2005).

William K. Cummings, Professor of International Education and International Affairs at the Elliott School of International Affairs of the George Washington University, noted in the UBASE Goals volume that because education on the recent Western model (with school buildings, teachers, textbooks and other equipment) has become increasingly expensive and because transnational entities failed sufficiently to share the costs of the educational models they asked the developing countries to emulate, the willingness of developing countries to accept the Western educational model with all its expenses declined while the educational ambitions of developing countries increased. A comparison of national educational plans in 2001 with those of 1982 shows that governments now want to eradicate illiteracy rather than merely extend literacy, want education to reduce specific inequalities (gender, regional, rural–urban, poverty, and historical injustices), view technology both as an asset for learning and as a means for social development, and emphasize promoting values through education such as democracy, religiosity, and tolerance – but also national unity and the need to counter extremism and terrorism.

The following section reviews some of the ideas about the goals of basic and secondary education proposed by others in the UBASE Goals volume, and the section after that presents some of my own ideas.

Perspectives on the goals of education from the Universal Basic and Secondary Education (UBASE) Project

The essays in the UBASE Goals volume were commissioned to address the questions "What should be the goals of basic and secondary education of high quality? Which, if any, of these goals should be universal?" from the diverse perspectives of authors of different professions, cultures and geographical origins – including African, Arab, Asian, European, and Latin American. These essays suggest three kinds of aims for education: political or civic aims, economic or work-related aims, and aims related to individual capacities. Few of these essays formulate goals of education so narrowly that they fit neatly into just one of these three broad categories.

EDUCATION FOR POLITICAL AND CIVIC AIMS

Most of the essays that promote political goals for primary and secondary education encourage increased attention to enabling students to establish intellectual and empathic connections with cultures other than their own.

Mohamed Charfi, former Minister of Education of Tunisia and leader of significant educational reforms there, and his colleague Hamadi Redissi at the law school at the University of Tunis, describe the struggle over educational goals in the Arab-Muslim world. In balancing secular versus religious values in the curriculum, they argue that it is essential for education in the Arab world to get people to read not only the sacred texts but also the texts of Freud and Darwin. Education should instill the capacity to think critically about the texts and the history of one's own culture, so as to be able to incorporate into one's own worldview the worldviews of others and initiate a conversation. They write that if a society is going to coexist with other societies, critical thinking about one's own and other cultures is necessary. They ask that students become citizens of their own culture and of the world.

In a similar vein, Fernando Reimers, Ford Foundation Professor of International Education at Harvard University, argues that schools should teach global civility to tolerate and appreciate individual and cultural diversity and to settle conflicts through peaceful negotiation. For Reimers, global civility competes with three other pretenders to be the principal goal of education: economic competitiveness, nationalism, and local relevance (religious, cultural, or political). Global civility renders its adherents vulnerable to those who are more belligerent and aggressive, unless global civility is promoted universally or nearly so. Hence the cooperation of an appropriate transnational organization would facilitate the widespread simultaneous adoption of global civility as a goal. UNESCO, originally chartered to promote the teaching of global civility, instead devoted its energies to promoting literacy and access to school. The World Bank's agenda

for education is to promote economic competitiveness and reduce poverty, not to promote global civility. A promising avenue is to scale up successful local efforts that now educate children for global civility. By building sufficient grassroots support among individuals and institutions, it may eventually be possible to engage the support of governments and international institutions.

Many commentators agree that a principal aim of primary and secondary education is to promote international peace and understanding by enabling students to bridge cultures. Kishore Mahbubani, formerly ambassador of Singapore to the United Nations and currently the Dean of the Lee Kuan Yew School of Public Policy at the National University of Singapore, argues that "one key goal of education is to both civilize humanity and prevent conflict. The current standard 'toolbox' [of Western education] may not have enough tools to achieve this." For Mahbubani, "The huge challenge for the 21st century will be to weave in some 'universal' elements that will remind children all over the world that they belong to a single common humanity. ... [O]ne key stream of Western civilization, the spirit of Socrates, could well provide some key universal threads to weave humanity together." Mahbubani suggests that the pedagogical methods of Socrates – the questioning, the critical reasoning – may be his most important legacy for education in the 21st century.

Political aims of education can also be locally and nationally directed. Deborah Meier, author of *The Power of Their Ideas: Lessons to America from a Small School in Harlem*, argues that the purpose of basic and secondary education is to prepare students to use their minds for democratic governance, specifically "to develop in our young strong democratic habits of heart and mind – appropriate intellectual skepticism and informed empathy for others unlike ourselves." With John Dewey (1916), she recommends: "[E]very potential voter needs the education that was once reserved for the ruling classes... people [should] see school as a tool for enlarging the intellectual life of our citizens, as, above all, the place where everything must be justified by how it prepares people to be decision-makers in the larger society, how it allows them to join the debate on the future of their community, state, nation and planet. ...The litmus test of good reforms is whether they encourage respect for the power of one's own and other people's ideas."

EDUCATION FOR ECONOMIC OR WORK-RELATED AIMS

Most of the essays that promote economic goals for primary and secondary education encourage increased attention to enabling students to understand an increasingly globalized economy and to participate gainfully in it. Both political and economic goals in the majority of these essays reflect the influence of the larger world on nearly every local polity and economy.

Kai-Ming Cheng, Pro-Vice Chancellor of the University of Hong Kong and a leading advisor to the People's Republic of China on educational policy, discusses education for global commerce. Cheng argues that if people are not educated for the world economy, then they are excluded from the benefits of the world economy. Education has to respond to the needs of the economy, and those needs include technical skills as well as

skills in teamwork. The world economy requires students who know how to negotiate with people and how to specialize while also being aware of the bigger picture.

Marcelo M. Suárez-Orozco, Victor S. Thomas Professor of Education at Harvard University, likewise focuses on the effects of globalization on education, but emphasizes the cultural as much as the economic consequences of globalization. He defines globalization "as processes of change that tend to de-territorialize important economic, social, and cultural dynamics from their traditional moorings in nation-states." Suárez-Orozco suggests that globalization requires successful children in the 21st century to have "(1) ...autonomy and creativity of thought and the capacity to work with others on complex problems that often cut across disciplinary boundaries; (2) new forms of transcultural understanding; and (3) the development of hybrid identities indexed by the ability to navigate across discontinuous or incommensurable linguistic and epistemic systems."

Beryl Levinger, Distinguished Professor of Non-profit Management at the Monterey Institute of International Studies and Director of the Center for Organizational Learning and Development at the Education Development Center, defines an education of quality as an education that "enable[s] learners to dramatically surpass the full range of limitations imposed by the circumstances of their birth." Such an education is the key to disrupting cycles of poverty in developing countries. The more than one billion people who live on less than one United States dollar per day (in her estimate)

> will need the instrumental skills of reading, writing and basic computation as well as content-driven knowledge in the natural sciences, social studies, health, and nutrition. But [their] education must also focus on values, processes and attitudes. [T]hree of the latter [are] absolutely essential to 'quality education.' Metacognitive skills that contribute to the transfer of knowledge and to the solution of novel problems. ...Skills that prepare learners to avail themselves of development opportunities. ...Processes that add to the store of social capital in the community.

A focus on the economic aims of education by international institutions has already begun to affect education in developing nations. Mallam[1] Bala Ahmed, Headmaster of the Isa Modibbo Koranic School, Nigeria, reports that the leadership of UNESCO and the support of international donors have redirected the aims of education toward participation in society, particularly the workforce. Ahmed writes that the goals of universal primary and secondary education have been extended beyond reading, writing and teaching of morals to include life skills. Four specific skills he mentions are the ability to communicate in both Arabic and English; the ability to keep records of events in both Arabic and English; preparation to qualify Islamiyya primary and secondary school leavers for employment as teachers, judges, agriculturists and in other relevant professions; and knowledge of trade and commerce.

EDUCATION FOR INDIVIDUAL CAPABILITIES

While many political and economic goals for primary and secondary education take a top-down perspective on what society needs from the individuals it educates, a final

group of essays asks, from a bottom-up perspective, what individuals need from the education society offers. Obviously top-down and bottom-up goals have to be coordinated and balanced.

Laura Salganik and Steven Provasnik, both of the American Institutes for Research, take a Western perspective elaborately developed under the auspices of the Organisation for Economic Cooperation and Development (OECD). They suggest that "a successful life and a well-functioning society" are universal goals; "a successful life" includes individual fulfilment and economic sufficiency, while "a well-functioning society" includes political and economic functioning of the society.

The OECD's project on the definition and selection of key competencies (Rychen & Salganik, 2001, 2003; Organisation for Economic Co-operation and Development, 2005) asked, "What competencies do we need for a successful life and a well-functioning society?" Here, "we" refers to individuals in OECD countries, but Salganik and Provasnik suggest that their conclusions could apply as well to individuals in developing and transitional countries. According to the project, "Each key competency must contribute to valued outcomes for societies and individuals; help individuals meet important demands in a wide variety of contexts; and be important not just for specialists but for all individuals." As defined by the OECD, "competencies [are] understood to cover knowledge, skills, attitudes and values."

Individuals (beginning in primary school and continuing through secondary school and adulthood) should acquire competence in three broad areas. They should be able to (1) "use ... tools for interacting effectively with the environment: both physical ones such as information technology and socio-cultural ones such as the use of language. [They] need to understand such tools well enough to adapt them for their own purposes – to use tools interactively"; (2) "engage with others ... from a range of backgrounds ... in heterogeneous groups"; and (3) "take responsibility for managing their own lives, situate their lives in the broader social context and act autonomously."

Camer Vellani, Distinguished University Professor of the Aga Khan University in Karachi, Pakistan, stresses "the importance of nurturing learning ability," a crucial property of the brain developed during infancy and early childhood, when it is affected by nutrition, health and the stimuli provided by the social environment (Young, 2002). Vellani proposes the goals of basic and secondary education as "understanding of one's identity in a global framework, acquisition of attitudes and skills to function responsibly, and moral reasoning." He concludes that "perspectives of the purposes of education should be broadened to consider a holistic, interdependent view of human development, encompassing early childhood. No investment in education alone will reverse long-term limitations in learning, health and behavior that are established in the early stages of life as a result of poor child nurture."

Two contributors from Nigeria caution that international educational organizations must balance the aim of preparing students for the workforce with the aims of individual moral and spiritual fulfillment, traditional aims of education particularly in Qur'anic systems of education. Mallam Zaki Abubakar Gidadawa, of the Agency for Mass Education, Sokoto State, Nigeria, and Mallam Bala Ahmed report on recent efforts led by UNICEF and other donor agencies to integrate the Western system of education with

the Qur'anic system of education. Abubakar asserts that the Islamic educational system gives more emphasis to moral behaviour and spiritual development than the Western, which is viewed by the people in northern Nigeria as emphasizing job opportunities. For Abubakar, it is of high importance that "the integration should be gradual and should not affect (touch) the long-running system of Qur'anic schools."

Why defining educational goals is difficult

Specifying educational goals and agreeing on them are difficult for multiple reasons. Stating some of these reasons may help to avoid naive optimism and may encourage sustained attention to the challenge.

Goals may pertain to educational inputs, processes, immediate outputs, or long-term outcomes. Educational budgets and physical facilities are inputs. Hours of instruction per year are both inputs and processes; pedagogical techniques and procedures of discipline and administration are processes. The fraction of primary school entrants who complete primary school and the fraction of primary school graduates who know their multiplication tables are both immediate outputs. Long-term outcomes could be measured by the fraction of young adults who are able to compete in global labour markets and able to participate in national political debates on an informed basis, or by progress toward national political and economic goals. Goals for educational inputs, processes, and immediate outputs may affect the possibility of reaching goals for long-term outcomes but do not determine what those goals should be. A goal of increasing the use of computers in classrooms or incorporating art, music or science into primary schools does not specify the long-term outcomes of education; ranking these educational goals requires some definition of long-term educational goals.

Long-term outcomes may be specified at multiple levels, for example, the individual learner; the population of teachers (their training and orientations toward tolerance, the diversity of student needs, and technological innovation in education, for example); the educational system; the population reaching the age of 18; the adult population; and the society and economy. Goals at one level are not necessarily sufficient to determine goals at all levels. For example, a goal that the individual learner realize his interests and potential to the fullest extent possible, regardless of gender and urban or rural location, does not determine whether the population reaching the age of 18 has the distribution of academic, vocational, commercial and interactive skills and political loyalties required for a viable society. Hence, it seems necessary to specify educational goals at multiple levels. The UNESCO goals for individual learners and for the educational system (Mary Joy Pigozzi, Director of Quality Education at UNESCO, Paris, in the UBASE Goals volume) are a start in this direction of multi-level specification of goals.

Educational goals are subject to influence at multiple geographic or spatial scales, and may be determined differently at each scale. At the international level, the United Nations Convention on the Rights of the Child says that education is a basic human right, while some multinational businesses promote education where they want an educated labour force. Non-governmental organizations and organized religions also attempt to influence education internationally. Educational goals are promoted by

national governments, which may listen to the international community, and by national ministries, unions, and professional associations. State, provincial and local school boards, religious groups, and home–schooling parents may set goals for children's education in countries where the central government does not preempt that right. The parents in a family set educational goals and standards for their own children that need not coincide with those of the local or national community. Finally, individual children within a family may set themselves differing educational goals and standards.

George M. Ingram, Executive Director of the Basic Education Coalition and the Education Policy and Data Center, Washington, DC, points out that many discussions of the quality of education overlook the challenge of defining educational goals when means are limited: "[M]issing is a systemic analysis of what would define quality education and how it would be maximized in a resource-poor environment—crowded classes, poorly trained and compensated teachers, inadequate materials, unengaged parents." Ingram also suggests a second missing ingredient, examination of the definition of an education of quality for students who are not in school, vulnerable or hard-to-reach, such as "street children, rural dwellers, disabled children, HIV/AIDS orphans, dropouts, child laborers, night travelers in Uganda, and children with mental, physical and emotional disabilities." He notes that although interventions are currently directed toward these groups, basic questions of quality are not being addressed. He asks, "[W]hat are realistic, relevant goals? What type of learning is relevant for such groups?"

These questions can create tensions within countries as well as between or among them. Does universal education include students who are learning-disabled or severely emotionally or physically disabled? If so, how are they to be reached, and how should a society decide how much to spend on educating them at the possible expense of educating others who learn more readily? In the public schools of the United States, for example, according to the National Education Association (2004), "The current [2004] average per student cost is US$7,552 and the average cost per special education student is an additional US$9,369 per student, or US$16,921. Yet, in 2004, the federal government [was] providing local school districts with just under 20 percent of its commitment rather than the 40 percent specified by the [Individuals with Disabilities Education Act] law, creating a US$10.6 billion shortfall for states and local school districts." The 5.3 billion people in the less developed regions with 2004 average gross national income of US$4,450, let alone the 3 billion of those 5.3 billion people who were living on less than two United States dollars per day (Population Reference Bureau, 2005), cannot afford such expenditures for students with special needs. How can the educational needs of such students be respected?

Many individual people want to influence educational goals, including, among others, children, parents, teachers, education officials, policy makers, religious leaders, labour leaders, business leaders, and members of the community at large. In addition to individuals, many organized groups of people, which we may call corporate interests, seek to influence educational goals, for example, labour unions, organizations of industrialists, organized religious groups, organizations of teachers, and governments. All these have an interest in what goes on wherever education takes place, and their interests may concur at some of the levels and scales identified above and may differ at others.

Goals of universal basic and secondary education

International economic requirements and international comparative educational assessments can powerfully influence decisions about the goals of education within a country. At present, no international body has the authority to establish international goals or standards for education. If de facto standards emerge from international requirements for commerce and scientific and technological exchanges, an institution devoted to formalizing the emergent standards may be found useful in the future.

A related difficulty in establishing goals concerns assessment. Once goals are established, individuals (students, teachers, parents) and authorities (school administrators, non-governmental organizations, and ministries of education, finance, and defense) have an interest in tracking progress toward those goals. Then questions arise that are important for the determination of goals. When a verbal statement of goals is proposed or adopted by an educational authority, are the goals sufficiently well defined to make assessment possible? What are the implications of goals for methods of assessment? What are the implications of available methods of assessment for the choice of goals? New collaborations or new institutions may be required to improve the coupling between educational goals and educational assessments. In the UBASE Goals volume, Vellani reports an effort in Pakistan to develop new forms of assessment for secondary-school leavers that would favour the ability to reason and to solve problems over rote memory. He acknowledges that, even with a successful implementation of the new form of examination, it will take many years to determine whether the new examinations will shape education to achieve the long-term goals favoured by the new examination.

The OECD launched in 1997 the Programme for International Student Assessment (PISA) to monitor "the extent to which students near the end of compulsory schooling have acquired the knowledge and skills essential for full participation in society." PISA is designed to monitor progress toward goals defined by OECD (discussed above) and is administered to 15-year-olds in schools, 4,500–10,000 students in each country. "PISA assessments began with comparing students' knowledge and skills in the areas of reading, mathematics, science and problem solving." PISA suggests that students also need "literacy" and "lifelong learning." Literacy is defined as "the capacity of students to analyse, reason and communicate effectively as they pose, solve and interpret problems in a variety of subject matter areas." Lifelong learning is students' "motivation to learn, beliefs about themselves and learning strategies."[2] Further,

> Reading literacy [is] The capacity to understand, use and reflect on written texts, in order to achieve one's goals, develop one's knowledge and potential, and participate in society. ...Mathematical literacy [is] The capacity to identify and understand the role that mathematics plays in the world, make well-founded judgments, and use and engage with mathematics in ways that meet the needs of one's life as a constructive, concerned and reflective citizen. ...Scientific literacy [is] The capacity to use scientific knowledge, identify scientific questions and draw evidence-based conclusions, in order to understand and help make decisions about the natural world and the changes made to it through human activity.

PISA's clear articulation of goals and continued effort to improve monitoring of achievement across countries is an important step.

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In defining goals for universal education, another question arises: What does "universal" mean? Does it demand that all children have access to education of some kind or kinds, with uptake optional, whether uptake is free or dependent on payment? Or does it mean that all children finish a full course of education? UNESCO's 2006 *EFA Global Monitoring Report* states that universal primary education (UPE) "will be achieved only when all children have access to and complete primary education" (UNESCO, 2006). The UN Millennium Development Goals likewise describe UPE as completion of primary education by every child.

Less has been done to address questions about the universality of educational content, which varies across countries and regions. Universal could mean that all children get the same education. Or it could mean that all children get some education, but the content differs by place, type of school, or technology of instruction. Or it could mean that there are universal principles that apply everywhere but that the implementation and specification of these principles in practice depend on the local context. If content differs, there may be some or no common elements for all children. Or it could mean that education is the same for everybody except for those children who are disabled, remote, rural, minority, or otherwise handicapped.

On the question of the universality of educational content, James Carroll, historian, novelist, and columnist for *The Boston Globe*, distinguishes (in the UBASE Goals volume) two meanings of universal, one imperial and imposing, the other inclusive, tolerant and endlessly skeptical even of itself. His essay shows that conflicts arising from claims of universality have afflicted the Abrahamic religions for not less than the last two millennia and recognizes that some of the same conflicts arise with respect to universal education.

Even when it is possible to choose educational goals for today, a further difficulty is that the choice is never final and, until the world stops changing, can never be final. Even those who believe that inculcating tradition is the primary goal will have to concede, upon critical scholarly study, that traditions change in response to changing circumstances. The difficulty of adapting educational goals to changing circumstances locally and globally will never disappear. The absence of systematic attention to procedures and institutions that could facilitate changes in educational goals exacerbates the difficulty.

Conflicts of values are a fundamental difficulty in choosing educational goals. Between and within cultures, choices based on values must be made about the priority of goals.

However desirable the goals chosen for education, external conditions constrain the effectiveness of any educational system in realizing those goals. What basic and secondary education can hope to accomplish is constrained, Vellani recognizes, not only by the capacity learners bring to school, but also by "the political, financial, physical and human resource issues and the enormous school-age population. Beyond the scope of education is the problem of employment. ...effectively educated human resources are needed for economic growth of the country, [but] disillusionment sets in when the proportion of the educated unemployed grows as a result of the growth in the population and low investment in development." The goals of education, no matter how wise and enlightened, are not the only factor in the ultimate effectiveness of education.

Some personal suggestions

To conclude, I offer my tentative thoughts about the goals of education.[3] These reflections are intended in part to be provocative rather than definitive.

EDUCATION SUPPORTS A BIGGER PIE, FEWER FORKS, BETTER MANNERS

I came to be concerned with the goals of universal basic and secondary education through my work in demography and population biology. In my 1995 book *How Many People Can the Earth Support?* I observed that proposed panaceas for solving demographic, environmental, economic, and cultural problems fell into three categories: bigger pie, fewer forks, and better manners (Cohen, 1995). ''Practising better manners'' means changing the terms under which people interact through reductions in violence, inequity, corruption, perverse subsidies, and economically and socially irrational barriers to trade and the movement of people. ''Making a bigger pie'' means amplifying human productive capacities through better technology, including reduced material throughput in production where possible. ''Bringing fewer forks to the table'' means reducing the human demands through sensible consumption and voluntary reductions in fertility. ''Better manners'' could motivate making a bigger pie and bringing fewer forks to the table.

In 1998, I conjectured that giving all children in the world a high-quality primary and secondary education could contribute to all three approaches (bigger pie, fewer forks, and better manners). But whether 10–12 years of high-quality education for all children would effectively support these three approaches depends on what that education aims to accomplish. Education that does not aim to inspire and enable innovation through instruction in science and technology would not promote a bigger pie. Education that does not give young people an understanding of the operation and maintenance of their own bodies could not promote fewer forks. Education that aims to prepare young men for the workforce but neglects young women, or that does not encourage respect and affection for people with different points of view, could not promote better manners. For these reasons and for others, the goals of education matter.

SKILLS, KNOWLEDGE, AND ATTITUDES

I suggest that the goals of education include, but are not limited to, providing individuals with the skills, knowledge, and attitudes that enable each learner to find his or her own way through life with dignity, productivity, and satisfaction. These goals take for granted an adequately nourished learner in good health in a safe environment. In too much of the world, these assumptions are invalid.

Skills include the ability to read with understanding, write with clarity, and speak with confidence. This proposal raises the questions: In which language(s) should students learn to read, write, and speak? Who decides which language(s) to use, and how is the decision reached?

Joel E. Cohen

Joel Spring suggested that "all people have the right to an education that teaches [both] their mother tongue [and] the dominant or official language of the nation" (Spring, 2000). The intent of this proposal is to give people "an understanding of their own [culture] and their relation to it [as well as] an understanding of the effect of the world culture and economy on their own culture and economy." When Mauritius, a tiny island nation where 15 languages are spoken, became a nation, it was necessary to choose a language of instruction for the schools. Although the commonest language is Kreol, a seldom written form of French Creole, the chosen state language was English, an ethnically neutral language that gave all students easy access to the world's economy (Spring, 2000).

In addition, people who are born speaking one of the world-dominant languages, such as English or Chinese, should be required to master at least one other language, preferably not closely related to their native tongue. Speaking two (or more) languages teaches that there are ways of seeing the world and conventions in speaking of the world other than those of the culture in which one happens to be born. Mastery of two or more languages is the linguistic equivalent of having the stereoscopic vision that two eyes give.

Another necessary skill for basic and secondary education is numeracy, which is the ability to read, understand, and compute quantitative information as required in daily life. In a study of the literacy of United States college students, the American Institutes of Research defined quantitative literacy as "The knowledge and skills required to ... identify and perform computations, either alone or sequentially, using numbers embedded in printed materials. Quantitative examples include balancing a checkbook, figuring out a tip, completing an order form, or determining the amount of interest on a loan from an advertisement" (Baer, Cook & Baldi, 2006). This definition is equivalent to numeracy. According to the study, published in 2006, 20% of United States college students completing 4-year degrees and 30% of students earning 2-year degrees "have only basic quantitative literacy skills, meaning they are unable to estimate if their car has enough gasoline to get to the next gas station or calculate the total cost of ordering office supplies."[4]

I sent an announcement of this study to a professional mathematician and to a professional mathematics educator. Both responded that the problem lies in the inadequate quantitative education offered in primary and secondary schools. The inadequacy arises, they suggested, from an emphasis on reading at the expense of numeration on the part of parents before children get to school, from low expectations of mathematical performance by parents, teachers, schools and society at large (how many times have you heard someone say, often with pride, "oh, I was never good in math in school"?), and from inadequate training, supervision and continuing education of teachers of mathematics in elementary and secondary schools. Not all societies (notably, not the Chinese) have such low expectations and achievements of quantitative literacy.

Equally necessary are social skills. One social skill is finding peaceful ways to manage and resolve conflicts within and between social groups. Different cultures have different ideas about how to do that: some decide by compromise, others use consensus, some take a majority vote, others appeal to tradition. All are successful in different contexts, and all unfortunately fail in the face of certain conflicts. Other necessary social skills are the

ability to analyze and make choices about personal life and work, the ability to be productive, and the ability to find satisfaction in personal life and work.

Knowledge includes knowledge of self, which can be attained through the natural sciences (how does my body work?), the social sciences (where do I fit in? what traditions and institutions do I inherit?), and the arts and humanities (what is the purpose of my life? what is my responsibility in shaping the direction of my life?). It includes knowledge of others: family, the local community, other communities and cities, the nation, other countries and cultures, and humankind. It includes knowledge of non-human entities, including other living species and non-living components of Earth. It includes knowledge of other times and the sources and limitations of our understanding of past and future.

Attitudes permit people to recognize conflicts of competing values without being disabled by those conflicts and to find a personal balance (changing with time) among the competing values. For example, there are conflicts between innovation and continuity (how much do we change, and how much do we continue in the norms of the past?); initiative and obedience (do I obey the rules even if I disagree with them? how much do I try to get them changed?); competitiveness and cooperation (how do I respect my own interests while I respect the interests of others and seek collaboration for mutual benefit?); and skepticism and respect (how do I respect what others have to say, while still asking for the evidence behind it?).

TEACHING SKILLS, KNOWLEDGE, AND ATTITUDES

How can educational systems best help children master the desired knowledge, skills, and attitudes?

Contributors to the UBASE Goals volume answer this question in different ways. Their answers range from addressing details of classroom and school infrastructure to overhauling national curricula. Ahmed provides a list of eighteen specific prerequisites to ensure a basic and secondary education of high quality in Nigerian Islamiyya schools; the majority of these prerequisites address the concerns of individual schools. The task of assuring these prerequisites lies in the hands, he says, of governmental and religious authorities, parents, teachers, and local communities. Cummings envisions a future of education in which computer-assisted technology takes over many of the duties and burdens of teaching "such as the presentation of materials, the facilitation of exercises, the evaluation of student performance, and the analysis of student learning difficulties." He argues that "there are ways to design education that reduce dependence on the modern props of school buildings, the uniform curriculum, textbooks, trained teachers, and one-time national examinations. Focusing on the goals of education as contrasted with the modern means is the key to the elaboration of these possibilities. Educational technology opens up many of these possibilities."

Pigozzi spells out ten dimensions – five learner-related and five system-related – required for a country to provide an education of quality for all its children. Her suggestions include seeking out learners; responding to what the learner brings from experience and endowment; providing a safe environment; providing appropriate

content; recognizing that the processes of education are part of the learner's education; structuring management and administration around the learner with fair, transparent and approachable procedures implemented by responsive people; communicating educational policies to the classroom, supporting the policies by mechanisms of implementation, and coordinating educational policies with policies in other sectors of the society; facilitating changes in the education system through an enabling legislative framework; providing resources of money, human capability and time; monitoring educational outcomes, and attuning monitoring more closely to the evolving goals of education.

Educators like Claudia Madrazo de Hernandez, Founder and Director of La Vaca Independiente, and Founder of Centro de Desarrollo Comunitario, Valle de Bravo, Estado de México (in the UBASE Goals volume), have argued for a long time that education in the arts can be a very important ingredient of an education as a working example of integrating knowledge, skills, and attitudes (Read, 1943; Eisner, 2002). Madrazo's essay presents ''one example of how it has been possible ... to bring the goals of integral education with the dia [Development of Intelligence through Art] program to more than thirteen thousand classrooms in Mexican schools in the last decade, providing teachers with useful and specific tools as they develop the necessary didactic abilities to become mediators who can focus on their students' affective, social, communicative and cognitive abilities.'' Because all humans have an ''immense inner potential to 'feel and think', to integrate and balance these two fundamental elements..., art [is] an excellent stimulus for human development ... in other contexts [besides schools]. Since 1999 we have collaborated with disadvantaged groups such as life-term inmates, Down syndrome children, immigrants and indigenous communities, and homeless children with extraordinary success.''

Elliot Eisner concurred with Madrazo's view (Eisner, 2005). He listed ''ten lessons the arts teach'' (Eisner, 2002): ''(1) The arts teach children to make good judgments about qualitative relationships; (2) The arts teach children that problems can have more than one solution and that questions can have more than one answer; (3) The arts celebrate multiple perspectives; (4) The arts teach children that in complex forms of problem solving purposes are seldom fixed; (5) The arts make vivid the fact that neither words in their literal form nor numbers exhaust what we can know; (6) The arts teach students that small differences can have large effects; (7) The arts teach students to think through and within a material; (8) The arts help children learn to say what cannot be said; (9) The arts enable us to have experience we can have from no other source; and (10) The arts' position in the school curriculum symbolizes to the young what adults believe is important.''

A similar argument for education in the sciences is equally valid, though rarely made. Here is how Eisner's 10 lessons look if arts are replaced by sciences.

(1)   The sciences teach children to make good judgments about both qualitative and quantitative relationships. In every science, qualitative judgments are required to decide which factors merit inclusion in an experiment or calculation or theory.

(2)   Contrary to what is widely believed, the sciences (including mathematics) teach children that problems can have more than one solution and that questions can

have more than one answer. For example, the Pythagorean theorem, widely taught in high school geometry classes, has hundreds of different proofs, and new ones are still being discovered though the theorem is thousands of years old. Questions frequently have more than one answer in science and points of controversy often drive further scientific work.

(3)   The sciences celebrate multiple perspectives; molecular biology, genetics, cell biology, physiology, epidemiology, clinical medicine, and environmental sciences all have different perspectives on the health of individuals and populations and all have important contributions to make.

(4)   The sciences teach children that in complex forms of problem solving purposes are seldom fixed; accidental discovery (for example, of penicillin) is a hallmark of an alert scientific investigator.

(5)   The sciences make vivid the fact that neither words in their literal form nor numbers exhaust what we can know; scientists regularly admit having no provable answers to many questions of scientific interest and human concern, despite having intuitions about them.

(6)   The sciences teach students that small differences can have large effects; this lesson is central to the mathematics and sciences of non-linear and chaotic behaviours.

(7)   The sciences teach students to think through and within a material; the physicist Richard Feynman was famous for practicing and teaching the art of thinking like the systems he was theorizing about.

(8)   The sciences help children learn to say what cannot be said; the calculus gives high-school students the capacity to articulate and understand the solution of Zeno's paradox, which resisted the greatest philosophers of antiquity, and the most creative mathematics captures concepts never before reduced to symbols. Even high-school algebra permits students to say what words are inadequate to say.

(9)   The sciences enable us to have experiences we can have from no other source. The instruments (microscopes, telescopes, computers) and methods (mathematics, statistics, computation) of science make possible experiences no other sources can provide.

(10)   The sciences' position in the school curriculum symbolizes to the young what adults believe is important; if the sciences are taught well and generously supported, students understand that adults value facts, rational understanding, and the sustained effort and high creativity required to attain mastery in science and make progress.

In addition, science as practised gives training in the exciting and productive tension between solitary creativity and collaborative creativity. It gives a sense of participating in a cumulative human enterprise that is much larger than oneself. It gives a sense of the universality of the human impulse to understand experience, regardless of the origin, language, creed, or other characteristics of the scientist. It gives an opportunity to work with people of enormously different backgrounds and to feel part of the human family, a privileged part with a shared language and shared concepts.

    Teaching science has civic implications as well. For example, scientific education about human uses of living (forests, fisheries, farms) and non-living (energy, water, land,

atmosphere) resources can make clear how today's local actions affect others in other places and future times as well as here and now. Environmental education based on sound physics, chemistry, and biology displays the mutual dependence of people, other species, and natural systems around the globe and opens a path to greater dialogue and cooperation across national, linguistic, and cultural boundaries. Science applied to forensic identification can improve the quality of criminal justice and raise awareness of the fallibility of human judgments.

Science as practiced requires lucid, persuasive and engaging communication; work that is not reported to one's scientific peers is not scientific work. Science as practised requires honesty; fraud and cheating are suicidal. It requires and teaches humility; around the edges of every success loom the unknown, the inscrutable, the recalcitrant, and the still unanswered questions. Science as practised teaches modesty. For each of the numberless complex skills required to do science, always somebody else can perform that skill better, and despite the riches of all human talent, nature is cleverer still in posing riddles than we humans are in answering them. Science as practised requires and teaches enormously hard work and sometimes rewards it. An experience of science as practised teaches the importance of deriving satisfaction from the work itself, from knowing that one has pushed oneself to the limits of one's ability and that the work is as well done as one can make it.

Aside from the very important technological and economic benefits of scientific and technological education, these cultural and personal benefits of scientific education justify the goal of giving every child an experience of science as practised. However, it seems likely that the benefits of education in the arts and sciences can be attained only when teachers can teach the arts and sciences with love, excitement and accurate understanding.

LOVE

Love has a fundamental relation to education. Jacques Delors wrote that education is "an expression of affection for children and young people, whom we need to welcome into society, unreservedly offering them the place that is theirs by right therein ..." (Delors et al., 1996). The word "love" occurs in three essays in the UBASE Goals volume. Charfi and Redissi write: "The state has no business worrying about the salvation of souls. Still, it should teach such virtues as loyalty, generosity, courage, love of neighbor, peace, and good works. Without a respect for such virtues, social life is given over to evil." Suárez-Orozco writes: "Children growing up today will need to develop the skills to learn, work, love, and live with others, which are increasingly likely to be of very different racial, religious, linguistic, and cultural backgrounds. Globalization will place a great premium on transcultural understandings. New forms of transcultural empathy and intelligence will be at a premium for survival and success in the 21st century." Madrazo writes: "Knowledge, skills, competencies are fundamental in every society and can be as specific as necessary to respond to their needs; however, love, affection, care, compassion, respect, dignity, consciousness and joy should be shared by every human being."

Goals of universal basic and secondary education

I want to explain why love should be recognized as a key ingredient in the preparation of children for basic and secondary education, in the processes of education, and in the long-term outcomes of education.

Before a child ever gets to a school or begins other formal education, he or she is normally born into a family. The child's parent, parents, or caretaker (I will use "parents" as an abbreviation) either love the child or not, and usually the child responds by loving the parents or not, and loving himself or herself or not. Whether or not the child loves and is loved by the parents, the parents are the child's first teacher(s). It seems inevitable that a child should associate his or her learning from parents, which happens no matter what, with the love that binds him to the parents or the lack of love that estranges him from them. When a child begins basic education in a school, teachers may be the first adults other than parents and relatives with responsibility for care of the child. In the fortunate case where the child and parents were bound by love, the child is prepared to transfer to the teacher the emotional bonding associated with learning. In the unfortunate case where the child did not associate learning with parental love, the child and schoolteacher face the hurdle of changing the emotional sign associated with learning from negative to positive. A role of love in basic education is to associate learning with the most positive of all emotional experiences, the giving and receiving of love.

A child who comes from a home with siblings learns from them as well as from his parents and establishes some mix of love and rivalry. The child may be fortunate if parents and siblings establish a practice of love among siblings, and unfortunate if not. When the child enters school, he or she is also equipped to associate with learning from his peers at school whatever mix of love and rivalry that child associates with learning from siblings at home. A task of the teacher and school is to assure a positive sign to the learning between peers for those not fortunate enough to have brought a positive sign to peer learning. This task is crucial for children where relations with siblings were negative, and will be increasingly important if demographic trends toward reduced fertility and increasing numbers of single-child families continue.

For children who unfortunately did not establish the habit of loving themselves as a result of the gift of parental love, primary and secondary schools can implant the habit of self-love through explicit positive input from teachers and peers. Without the habit of self-love, love for others is crippled at the starting gate (Shonkoff & Phillips, 2000).[5]

In basic education, a crucial goal is to teach a love of learning initially through love of teachers and fellow students from whom one learns. In secondary education, love between teachers and students and between students and students remains an essential catalyst of learning, but increasingly teachers model for students a love of advanced subjects of learning, including the natural world living and non-living, worlds of art and imagination, the larger society, other cultures, peoples, times and places, and abstract structures of pure thought. One young woman, recalling a teacher important in her own and her friends' secondary education, wrote: "...the teachers most of us remember fondly are those that seem instinctively able to transfer their students' affection for them into academic engagement" (Karnasiewicz, 2006). To the extent that secondary school teachers can foster love of the subjects of secondary education, they establish the motivation and habits of loving learning throughout life. Another role of love at the

secondary level of education is to enlarge the scope of the learner's self-love to envision and create a life of multiple meanings, engagements, and satisfactions. The learner's love earlier focused on family and teachers should be, at the secondary level, indirectly guided by the personal examples of teachers and parents to love of learning about all aspects of the world. The form of love changes from early crushes on teachers and fellow students to an acceptance of the worth and dignity of other people who may be very different in appearance and habits. That acceptance is a form of love. It provides the foundation for civility in a diverse society and for civility among diverse national and global communities, other civic, religious, linguistic and gender communities, past, present and future communities. The adequate receipt, development and practice of love can help to extend the universal values ''of nurturing and of internal curbs on violence, deceit and betrayal'' (Bok, 2002) from familial, tribal or national boundaries to the entire human species initially, and then eventually to other species. Love is one of education's key ingredients and products.

Unanswered questions

I began with a set of questions, but addressed only the first two: ''What should be the goals of basic and secondary education of high quality? Which, if any, of these goals should be universal?'' Still unanswered are the remaining questions: ''What does 'universal' mean? What happens when educational goals conflict? Who decides these questions, and by what process do they decide? How should the quality of decisions about educational goals be evaluated?'' These questions deserve discussion and answers.

Acknowledgments

Notes

1.   ''Mallam'' is the Arabic honorific for ''a learned man'' or ''teacher.''
2.   PISA definitions; www.pisa.oecd.org

3. I make four disclaimers. First, I claim no originality. Second, I do not claim to have documented the sources where these thoughts may have originated or may have been anticipated independently. Third, I do not attribute these suggestions to my colleagues in the UBASE project, the American Academy of Arts and Sciences, or the funders of the UBASE project. These are personal suggestions. Fourth, I do not claim to have resolved all the difficulties identified in the previous section.

4. http://www.air.org/news/default.aspx#pew, accessed 2 February 2006.

5. The first recommendation is (p. 6): "Resources on a par with those focused on literacy and numerical skills should be devoted to translating the knowledge base on young children's emotional, regulatory, and social development into effective strategies for fostering ... the capacity to experience the enhanced motivation associated with feeling competent and loved." Moreover (p. 7): "Children grow and thrive in the context of close and dependable relationships that provide love and nurturance, security, responsive interaction, and encouragement for exploration. Without at least one such relationship, development is disrupted and the consequences can be severe and longlasting. If provided or restored, however, a sensitive caregiving relationship can foster remarkable recovery." The words "love," "beloved," "loved," "lovable," "loving" appear throughout this scientific document.

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