

By Elaina Loveland

Developing Education in Developing Nations

An interview with **Jamil Salmi**, higher education economist
at the World Bank

JAMIL SALMI, A MOROCCAN EDUCATION ECONOMIST, is the coordinator of the World Bank's network of higher education professionals. Prior to joining the World Bank in December 1986, Salmi was a professor of education economics at the National Institute of Education Planning in Rabat, Morocco. He also worked as a consultant to various ministries, national professional associations, and international organizations. In the past 12 years, he has provided policy and technical advice on higher education reform to more than 30 governments in developing countries. Salmi is a graduate of the French business school ESSEC. He also holds a master's degree in public and international affairs from the University of Pittsburgh and a doctorate in development studies from the University of Sussex (UK). He is the author of five books and numerous articles on education and development issues.

IE: What is the general status of higher education in developing nations today?

SALMI: Higher education in developing countries is undergoing change at a rapid pace. In some places, the 'future' is already here. Imagine some students receive free ipods, laptops, and Blackberry handhelds upon enrollment. Students may elect an individualized program to suit their specific career plans or study interests. Courses might be systematically redesigned every two years. Many courses are online. There might be no physical library or laboratories, only e-libraries and i-labs. While many ideas about the future of higher education appear like improbable science fiction dream to some, or a terrifying nightmare to others, each element mentioned above can actually be found in some form among today's universities. These futuristic features are symbolic of the rapid transformation affecting higher education in the industrial world—some of these developments are already happening today in some developing nations. In the past few years, many countries have witnessed significant transformations and reforms in their high-

er education systems, including the emergence of new types of institutions, changes in patterns of financing and governance, the establishment of evaluation and accreditation mechanisms, curriculum reforms, and technological innovations.

IE: Is higher education changing like this in developing countries universally?

SALMI: No, it is not changing at this impressive speed everywhere. Most developing countries continue to wrestle with difficulties produced by inadequate responses to long standing challenges. Among these unresolved challenges are the sustainable expansion of higher education coverage, the reduction of inequalities of access and outcomes, the improvement of educational quality and relevance, and the introduction of more effective governance structures and management practices.

IE: Why is the growth of the higher education system in developing countries so important and specifically for a knowledge-based economy?



Jamil Salmi

SALMI: Economic development is increasingly linked to a nation's ability to acquire and apply technical and socioeconomic knowledge, and the process of globalization is accelerating this trend. Comparative advantages come less and less from abundant natural resources or cheaper labor, and more and more from technical innovations and the competitive use of knowledge. Today economic growth is as much a process of knowledge accumulation as of capital accumulation. It is estimated, for instance, that firms devote one-third of their investment to knowledge-based intangibles such as training, research and development, patents, licensing, design and marketing.

All countries also need the scientific capacity to understand critical issues such as global warming, the pros and cons of using genetically modified crops, or the ethical dimensions of cloning. Finally, progress in seismology, vulcanology and climatology has enhanced the ability to anticipate and prepare for natural disasters like floods, tsunamis and droughts. For example, the existence of a tsunami warning system around the Indian Ocean, similar to the one already in place around the Pacific Rim, would undoubtedly have saved thousands of lives on December 26, 2004.

IE: How is technology today changing the landscape of higher education?

SALMI: A direct product of the application of science and technology is the information and communication revolution. The advent of printing in the fifteenth century brought about the first radical transformation in the way knowledge is kept and shared by people. Today technological innovations are revolutionizing again the capacity to store, transmit, access and use information. Rapid progress in electronics, telecommunications and satellite technologies, permitting high capacity data transmission at very low cost, has resulted in the abolition of physical distance. For all practical purposes, there are no more logistical barriers to information access and communication among people, institutions and countries

IE: How has the changing needs of skilled and knowledgeable workers in the developing world impacted the needs for change in higher education?

SALMI: In developing countries today, there is trend toward higher and different skills as a result of increased competition in the labor market and rapid change in economic structures. This demand for higher workforce skills is confirmed by recent analyses of rates of return in a few Latin American countries (Argentina, Brazil and Mexico), which show a rising rate of return for higher education, a reversal of earlier trends in the 1970s and the 1980s. Moreover, in OECD (Organisation for Economic Cooperation and Development) countries, highly skilled white-collar employees account for 25 to 35 percent of the labor force.

Also, today there is a need to train young people to be flexible and to acquire the capacity to adapt easily to a rapidly changing world. There has been increased demand over the last few decades for workers with skills that require more knowledge than in the past. No longer are most jobs filled by manual laborers but the majority of jobs, at least in the United States and other developed countries, require more advanced cognitive and communication skills. Developing countries are facing similar trends.

Tasks requiring expert thinking and complex communication grew steadily and consistently during the 1970s, 1980s, and 1990s. The share of the labor force employed in occupations that emphasize routine cognitive or routine manual tasks remained stable in the 1970s and then declined over the next two decades.

IE: How has the rise in demand for continuing education affected learning models in higher education institutions overall and what is the impact on developing countries?

SALMI: Nowadays the growing importance of continuing education needed to update knowledge and skills on a regular basis is

due to the short “shelf life” of knowledge. The traditional approach of studying for a discrete and finite period of time to acquire a first degree or to complete graduate education before moving on to professional life is being progressively replaced by practices of lifelong education. Training is becoming an integral part of one’s working life, and takes place in a myriad of contexts: on the job, in specialized higher education institutions, or even at home.

In the short term, this may lead to a progressive blurring between initial and continuing degree studies, as well as between young adult and mid-career training. Finland, one of the leading promoters of continuing education in Europe, is among the most advanced nations in terms of conceptualizing and organizing higher education along these new lines. Today the country has more adults engaged in continuing education programs than young people enrolled in regular higher education degree courses. But not all countries have achieved a balanced educational development as reflected in the qualifications of their labor force. While in Finland the proportion of the population older than 15 with secondary or higher education levels has increased from 12 to 70 percent from 1960 to 2000, in a developing country such as Senegal it has grown only from 4.5 to 10 percent over the same period.

From the student’s perspective, the desire to position oneself for the new types of jobs in the knowledge economy provides a strong incentive to mix study program options and qualifications, often beyond traditional institutional boundaries. New patterns of demand are emerging, whereby learners attend several institutions or programs in parallel or sequentially, thus defining their own skill profiles in the labor market.

IE: How must learning in universities change to accommodate the needs of students?

SALMI: Today in many disciplines, factual knowledge taught in the first year of study may become obsolete before graduation. The learning process now needs to be increasingly based on the capacity to find, access, and apply knowledge to problem-solving. In this new paradigm, where learning to learn, learning to transform information into new knowledge, and learning to transfer new knowledge into applications is more important than memorizing specific information, primacy is given to information seeking, analysis, the ability to reason, and problem-solving. In addition, competencies such as learning to work in teams, peer teaching, creativity, resourcefulness, and the ability to adjust to change are also among the new skills that employers value in the knowledge economy.

IE: How has the branch campus phenomenon influenced higher education in developing countries?

SALMI: The decreased importance of physical distance means that the best university in any country can decide to open a branch anywhere in the world or to reach out across borders using the Internet or satellite communication links, effectively competing with any

national university on its own territory. With 90,000 and 500,000 students respectively, the University of Maryland University College—a public institution—and the University of Phoenix—a private institution—have been the fastest growing distance education institutions in the United States in the past five years. The British Open University has inundated Canadian students with Internet messages saying more or less “we’ll give you degrees and we don’t really care if they’re recognized in Canada because they’re recognized by Cambridge and Oxford. And we’ll do it at one-tenth the cost.” It is estimated that, in the United States alone, there are already more than 3,000 specialized institutions dedicated to online training. Thirty-three states in the United States have a statewide virtual university; and 85 percent of the community colleges are expected to offer distance education courses by 2002. Distance education is sometimes delivered by a specialized institution set up by an alliance of universities, as is the case with Western Governor University in the United States and the Open Learning Agency in British Columbia. The proportion of U.S. universities with distance education courses has grown from 34 percent in the last years of late 1990s to about 50 percent in academic year at the turn of the century (1999-2000), with public universities being much more advanced than private ones in this regard. The Mexican Virtual University of Monterrey offers 15 master’s programs using teleconferencing and the Internet that reach 50,000 students in 1,450 learning centers throughout Mexico and 116 spread all over Latin America. In Thailand and Turkey, the national open universities enroll respectively 41 and 38 percent of the total student population in each country.

IE: Other than branch campuses and distance learning offered by well-known universities, what other kinds of models for universities are appearing in developing countries?

SALMI: Corporate universities are on the rise. They may operate with their own network of physical campuses like Disney, Toyota and Motorola), as a virtual university like IBM’s model, or through an alliance with existing higher education institutions as Bell Atlantic, United HealthCare, and United Technologies do. A few corporate universities, such as the Rand Graduate School of Policy Studies and the Arthur D. Little School of Management, have been officially accredited and enjoy the authority to grant formal degrees. Experts predict that by the year 2010, there will be more corporate universities than traditional campus-based universities in the world, and an increasing proportion of them will be serving smaller companies rather than corporate giants.

Franchise universities constitute another category of new competitors. In many parts of the world, but predominantly in South and Southeast Asia and the formerly socialist countries of Eastern Europe, there has been a proliferation of overseas “validated courses” offered by franchise institutions operating on behalf of British, U.S., and Australian universities. The cost of attending these franchise institutions is usually one-fourth to one-third what it would cost to enroll in the mother institution.



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IE: How will the continuing education trend influence the student populations in developing countries in the future?

SALMI: In nearly every nation, the evolution towards lifelong learning means that young high school graduates will progressively cease to be the primary clientele of universities. As a result, universities must organize themselves to accommodate the learning and training needs of a very diverse clientele: working students, mature students, stay-at-home students, traveling students, part-time students, day students, night students, weekend students, etc. One can expect a significant change in the demographic shape of higher education institutions, whereby the traditional structure of a pyramid with a majority of first degree students, a smaller group of post-graduate students, and finally an even smaller share of participants in continuing education programs will be replaced by an inverted pyramid with a minority of first time students, more students pursuing a second or third degree, and the majority of students enrolled in short-term continuing education activities. Already in the United States, almost half of the student population consists of mature and part-time students, a dramatic shift from the previous generation. In Russia, part-time students represent 37 percent of total enrollment. This trend will eventually start affecting higher education institutions in the developing world at an increasing rate.

IE: How is technological innovation impacting higher education?

SALMI: On the positive side, the use of modern technology can revolutionize the way education is delivered, resulting in more and better learning opportunities. The concurrent use of multimedia and computers permits the development of blended pedagogical approaches involving active and interactive learning. Frontal teaching can be replaced by or associated with asynchronous teaching in the form of online classes that can be either scheduled or self-paced. With a proper integration of technology in the curriculum, teachers can move away from their traditional role as one-way instructors towards becoming facilitators of learning.

Web-based virtual labs, remote lab experiences and access to digital libraries are but a few examples of the new learning enhancing opportunities that increased connectivity can provide cash-strapped universities and colleges in developing countries. For instance, higher institutions with virtual libraries can join the recently established Online College Library Center which offers inter-library loans of digitized documents on the Internet. Even in traditional libraries, CD-ROMs can replace journal collections.

Cornell University, for example, has created the "Essential Electronic Agricultural Library," which consists of a collection of 173 CD-ROMs storing text from 140 journals for the past four years that can be shared with libraries at universities in developing country.

The open education movement, pioneered by universities such as MIT (Open CourseWare), Carnegie Mellon (Open Learning Initiative), Rice University (community-based learning "object commons"), and Harvard University (special library collections) with funding from the Hewlett Foundation, offers the promise of extensive content and software resources that higher education institutions in developing countries could use and adapt to fit their needs. A Chinese consortium working in partnership with MIT has already established an expanded Chinese version of the Open CourseWare website. Users all over the world are leveraging the power of the Internet to form virtual communities of learning to help each other apply and further enrich available open education resources.

IE: What changes must faculty to make in their teaching styles to integrate technology?

SALMI: To create a more active and interactive learning environment, faculty must have a clear vision as to the purpose of the new technologies and the most effective way of integrating them in program design and delivery—what experts call "instructional integration." Then they must educate themselves in the use of the new pedagogical channels and supports. Combining online and regular classroom courses gives students more opportunity for human interaction and development of the social aspects of learning through direct communication, debate, discussion and consensus building.

These pedagogical requirements apply also to the design and delivery of distance education programs which need to match learning objectives with appropriate technology support. In scientific fields like engineering, for example, the need for practical training is often overlooked. Computer simulations alone cannot replace all forms of applied training. In many science and technology-oriented programs, hands-on activities in laboratories and workshops remain an indispensable constituent of effective learning.

IE: What challenges do developing countries face in using technology in higher education?

SALMI: Poor connectivity is a serious constraint in many developing countries, which severely restricts the likelihood that higher education institutions could take full advantage of ICT-related op-



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portunities. Many low-income nations have limited resources for building up their ICT infrastructure and lack the economic and political leverage to negotiate favorable access and price conditions with international telecommunications firms.

IE: How can institutions in developing countries be evaluated properly in terms of the quality of higher education, especially considering the rise of nontraditional learning using technological advancements like online learning?

SALMI: Developing countries face a whole range of quality assurance issues. It is doubtful that the principles, norms and criteria routinely applied to evaluate or accredit campus-based programs can be used without significant adjustments to assess the quality and effectiveness of virtual universities, online courses and other modalities of distance education. Appropriate evaluation processes are needed to reassure the public that the courses, programs and degrees offered by the new types of distance education institutions and the new forms of e-learning and blended programs in traditional universities meet acceptable academic and professional standards. Less emphasis is likely to be given to traditional input dimensions such as qualifications of individual faculty and student selection criteria, and more on the capabilities of graduates. Western Governors University's initiative to move to competency-based evaluations performed by an independent agency has created an interesting precedent which may ultimately induce change in evaluation methods used by traditional universities.

IE: What is the most important asset that a higher education institution in a developing country can harness to ensure the best chance of success in the future?

SALMI: Flexibility may be the one single characteristic most likely to determine higher education institutions' ability to

contribute effectively to the capacity building needs of developing countries. Increasingly, higher education institutions need to react swiftly by establishing new programs, reconfiguring existing ones, and eliminating outdated courses without being hampered by bureaucratic regulations and obstacles.

This must take place in the context of systematic efforts to develop and implement a forward-looking vision through strategic planning. By identifying both favorable and harmful trends in their immediate environment and linking them to a rigorous assessment of their internal strengths and weaknesses, institutions can better define their mission, market niche and medium-term development objectives and formulate concrete plans to achieve these objectives. For lack of strategic planning, many new

distance education institutions, for example, have adopted inappropriate technologies, failing to assess their adequacy against the purpose of their programs, the competency of their professors and the learning needs of their students.

It is important to stress that strategic planning is not a one-time exercise; the more successful organizations in both business and academia are those that are relentless in challenging themselves in the pursuit of better and more effective ways of responding to client needs. The advice that the Roman philosopher Seneca gave us two thousand years ago may be even more relevant today as it was during his time: "There is no favorable wind for those who do not know where they are going." **IE**

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