As we witness the transformation of many developed nations into knowledge-based societies, the difficulties for developing countries trying to catch up seem insurmountable. Research universities—along with other public- and private-sector institutions in the industrialized world—continue to develop technology products at unprecedented pace. At present, the world is thus observing how the gulf between developed and developing countries keeps widening. While industrialized nations such as the United States, Japan, and the countries in Western Europe invest between 2 and 3 percent of their GDP in research and development (R&D), the countries of the developing world rarely reach 1 percent on the same indicator. The close link between industry and university R&D in the developed world makes scientific and technological research an important tool for economic development. More often than not, however, university R&D in developing nations lacks effective demand from local industry, making it basically academia oriented. This situation is especially disturbing when university research does not contribute significantly to the solution of urgent local societal needs.

Some countries of the Third World are trying to replicate the successful experiences of Korea, Taiwan, Singapore, and Malaysia, countries that have proven that it is possible to achieve economic growth based on the contributions of local R&D. It has not been possible thus far to achieve successful results because the coordination of government, universities, and local industry in a clear innovative strategy has not occurred. As a consequence, the viability of developing countries’ R&D is an issue of growing concern among scholars, scientists, and policymakers.

Latin America and, more particularly, Argentina and Mexico, are cases that illustrate the current situation of R&D within the developing world. The knowledge produced in Latin America represents less than 3 percent of the world’s scientific production. This is not surprising given its low investment in R&D. Public expenditures in R&D of all Latin American countries are equivalent to the expenses in R&D of merely a couple of multinational corporations. In Argentina and Mexico—the countries in the region that (along with Brazil) have a tradition of and personnel in R&D—R&D investments have remained significantly low (less than 0.5 percent of GDP). The number of scientists and engineers in R&D is also low (between 14,000 and 16,500), while in the industrialized countries it reaches figures above 50,000. Other indicators show that most R&D funds in Argentina and Mexico come from public money (more than 80 percent). There are very few graduates at the doctoral level training for careers in research. Consequently, with very limited resources and small R&D communities, the output is irrelevant when measured by the number of patents granted to residents and nonresidents. In relation to this indicator, royalties and license fees payments are much higher than receipts.

It remains to be seen whether the current globalization process and the growing availability of technology communication and information constitute a real chance to overcome the lack of relevance that local R&D has had so far in the developing world.

It is also worth mentioning that R&D in Argentina and Mexico occurs at the large, publicly funded universities. Argentina’s University of Buenos Aires (UBA) and Mexico’s National Autonomous University (UNAM) are, along with Brazil’s University of Sao Paulo and University of Campinas, among the most prestigious institutions for scientific research in Latin America. Despite having the oldest research tradition and employing the largest number of scientists (many of whom are highly distinguished), UBA and UNAM are also too large, with enrollments near and above 200,000 students, respectively, and are plagued by tight budgets, excessive bureaucracy, overpoliticization, weak...
Attitudes About International Education in the United States

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Dramatic geopolitical shifts and technological expansion during the last century have prompted much discussion about the role of higher education in preparing a more globally literate national citizenry. But to what end? Today, evidence suggests that few postsecondary graduates have adequate understanding of the world beyond U.S. borders, speak another language with any degree of fluency, or can function competently in different cultures.

To better understand and promote international education in the United States, the American Council on Education (ACE), the umbrella organization for over 1,800 colleges and universities and nearly 200 national and regional higher education associations and organizations, has launched a multiyear initiative aimed at mapping current international activity and stimulating campus dialogue about what constitutes effective international education. Documents recently published by the ACE provide some introductory insights into international activity nationwide as well as public perception of its importance.

Public Opinion on International Education

Despite at times conflicting accounts from the media and various political authorities, a popular consensus seems to exist that international education at the postsecondary level is important. In a random telephone survey of 1,000 Americans over the age of 18 conducted for the ACE in September 2000, respondents indicated that international education was an important personal and national concern.

- Knowledge about international issues is important, especially for future generations. Over 50 percent of respondents believed it was important personally; almost 90 percent considered it important for their children or young people today.
- Colleges and universities should require international training for students and provide them with international skills and knowledge. Over 70 percent of the sample said students should be required to study a foreign language in college if they did not already know one. More than three out of four supported requiring students to take international courses.
- College and university students should have an international experience as part of their overall education. Over 70 percent of the respondents agreed that students should have a study, work, or internship experience abroad sometime during their postsecondary studies.
- More than 75 percent of those asked specified that international education opportunities would be an important consideration in selecting a college or university.

A companion survey of 500 high school seniors intending to enroll at a four-year college or university produced similar findings, confirming a broad national base of support for international education. Conducted by the ACE and the Arts & Science Group, Inc./studentPOLL, the random national poll found that:
- Incoming freshmen believe it is important that colleges and universities offer international experiences and opportu-