ISSUE BRIEF

Educational Policies for Integrating College Competencies and Workforce Needs: Cases from Brazil, Mongolia, Ukraine, and the United States

BY MICHAEL BASTEDO (USA)
BATJARGAL BATKHUYAG (MONGOLIA)
EUFRASIO PRATES (BRAZIL)
YAROSLAV PRYTULA (UKRAINE)

March 2009

IHEP
INSTITUTE FOR HIGHER EDUCATION POLICY
1320 19th Street, NW, Suite 400
Washington, DC 20036

202 861 8223 TELEPHONE
202 861 9307 FACSIMILE
www.ihep.org WEB

IB02200903

Table of Contents

Acknowledgments

The authors express their sincere thanks to Nathan F. Harris for brilliant editing and research assistance. In addition, we would like to thank Vicente Nogueira, president of the Associação Internacional de Educação Continuada (AIEC), Brasília (DF) Brazil.

We would like to offer special thanks to the Ford Foundation for its financial support of the Global Policy Fellows Program, managed by the Institute for Higher Education Policy (IHEP). The views expressed in the paper are those of the authors and do not necessarily reflect the views of the Ford Foundation or IHEP.

Executive Summary

In the past decade, the role of higher education in workforce development has emerged as a key issue around the world. Leading authorities inside and outside of government have begun questioning whether colleges and universities are preparing graduates with the competencies and skills necessary to compete in a dynamic global economy. As part of a series produced for the Global Policy Fellows Program, an initiative of the Institute for Higher Education Policy, this paper analyzes how four countries—Brazil, Mongolia, Ukraine, and the United States—are meeting the dynamic challenge of workforce development within a global economic, political, and social context.

A number of issues should be considered in examining the role of higher education institutions in workforce development. This paper highlights how the four profiled countries are addressing three facets of the challenge:

- **Basic skills development.** A key consideration in examining the outcomes of higher education is whether graduates possess and demonstrate the skills necessary to contribute and thrive in the labor market. It is also important to understand whether the skills of graduates align with the needs of employers or of the national and global economies.

- **Internships.** To complement developing skills through academic course work, many colleges and universities offer internships in collaboration with employers. Internships offer a natural bridge between academic study and full-time employment, foreshadowing the transition from the classroom to the working world for students.

- **Stakeholders.** A number of groups have a keen interest in helping higher education institutions improve the skills of their citizens before they enter the workforce. These groups may include elected officials, government policymakers, students, faculty and other institutional officials, and business leaders.

Several themes emerge across the four profiled case studies. Each country illustrates a general lack of agreement among key stakeholders regarding desired workforce competencies. In addition, a tension in the labor market between balancing demand for specialized, technical training with needs for universal basic and applied academic skills underscores an ambiguity concerning the appropriate role of the government in directing, regulating, or influencing how institutions of higher education prepare students for the workforce.

Although the profiled countries are quite different, three common recommendations emerge in reviewing the challenges facing institutions of higher education in each country. First, colleges and universities, in collaboration with business and government, should examine whether academic programs develop the academic, applied, and "soft" skills needed by employers. Similarly, institutions of higher education need to ensure that students demonstrate proficiency in basic academic skills needed by employers such as writing, reading, mathematics, and critical thinking. Finally, institutions should establish internship opportunities for students to acquire "real life" work experience in their chosen field. These recommendations can be considered and implemented in both developed and developing countries. Addressing these issues is essential—countries with systems of higher education that fail to meet workforce needs will fall behind those that satisfy evolving labor market demands.

Introduction

In the past decade, examining the role of higher education in workforce development has emerged as a key issue in many countries across the world. Leading authorities inside and outside of government have begun questioning whether colleges and universities are preparing graduates with the competencies and skills necessary to compete in a dynamic global economy—whether systems of higher education are sufficiently helping to enhance national competitiveness within this new global economic context.

Among these authorities, numerous international organizations such as the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the Organization for Economic Cooperation and Development (OECD), the World Bank, and the International Labor Organization (ILO) have sponsored projects examining the relationship between higher education and workforce development within the context of globalization.[1] For example, in a 2004 report, UNESCO stressed that the role of higher education has increased as a key factor in stimulating sustained economic development in countries with knowledge-intensive and information societies, emphasizing that larger sections of the population need to acquire advanced levels of knowledge and skills.[2] In particular, UNESCO identified that institutions of higher education need to provide their graduates with the competencies and skills that will enable them to adapt to the requirements of the knowledge economy, including academic capacities (e.g., specialist training, critical thinking, problem solving), personal and social development skills (e.g., self-confidence, motivation, moral and ethical values, and a broad understanding of the world), and entrepreneurial skills (e.g., leadership and teamwork abilities, and computer and other technology skills).

Although all countries consider providing skilled labor as a key role of higher education institutions, the alignment (or gap) between higher education and workforce development differs across countries. Often, the need for broad-based, flexible skills development is at odds with the need for specialized or technical training. In many countries, the need to expand access to higher education, especially for historically disadvantaged groups, must compete with the need to improve the quality of that education. Countries may address these issues in various ways, depending on the history and context of their higher education system, as well as what their economy needs to compete in a global market. To illustrate these differences, this paper analyzes how four countries—Brazil, Mongolia, Ukraine, and the United States—are currently addressing the challenge of meeting their respective workforce development needs within this global economic, political, and social context. The paper highlights how each country is engaging key stakeholders to better understand desired workforce competencies, increase opportunities for college students to apply knowledge "on the job" through internships, and understand the basic academic and applied skills required for success in the global economy. Thus, the following sections provide brief descriptions of the situation in each country. The concluding section ties together these analyses and offers some common themes related to how countries worldwide may be approaching workforce development needs.

The paper is part of a series of papers produced for the Global Policy Fellows Program, an initiative of the Institute for Higher Education Policy. The goal of the program is to bring together policy analysts from around the world who are interested in developing higher education policies that improve the opportunity for and success of higher education. Other topics in this series include financing higher education institutions and students, the transitions between secondary and postsecondary education, and the trend toward privatization in higher education.[3]

[1] U. Teichler, "Higher Education policy and the World of Work: Changing Conditions and Challenges," *Higher Education Policy* 12, no. 4 (1999): 285–312.

[2] United Nations Educational, Scientific and Cultural Organization, *Final Report of the Meeting of Higher Education Partners (World Conference on Higher Education + 5)* (Paris: UNESCO, 2004).

[3] For more information about the Global Policy Fellows Programs, see www.ihep.org/programs/global-policy-fellows.cfm.

Case Studies

A number of issues should be considered in examining the role of higher education institutions in workforce development. For this paper, each case study focused on three components:

- **Basic skills development**—The most important aspect of this issue is the outcomes of higher education: whether graduates demonstrate the skills necessary to contribute in the workforce. An important corresponding consideration is whether the skills of graduates align with the needs of employers or of the economy broadly.

- **Internships**—To complement developing skills through academic course work, many colleges and universities offer internships (or practicums) in collaboration with local employers. These opportunities allow students to attain practical skills that build on their formal education. Internships represent a natural bridge between academic study and full-time employment, foreshadowing the transition from the classroom to the working world for many college students.

- **Stakeholders**—A number of groups have a keen interest in helping higher education institutions improve the skills of their citizens before they enter the labor force. These groups may include elected officials, government policymakers, students, faculty and other institutional officials, and business leaders. Each stakeholder group has a particular perspective that may influence the characteristics and development of the process.

The case studies highlight how each of the profiled countries is confronting the challenges of preparing graduates for the workforce in the context of each of these components. The case studies also offer some recommendations for future policy development.

BRAZIL

Like many countries, Brazil continues adjusting to the new realities of the global economy, particularly the development of a professionally qualified workforce. Recent research, conducted by André Campos e Ricardo Amorim from the Institute of Economic Applied Research,[4] highlights a serious lack of qualified workers in Brazil: among the 9.1 million workers in search of employment at the end of 2007, about 7.5 million were unqualified, which means that less than one in five had the required qualifications demanded by the job market.[5] The same research underscores that certain important business and industry sectors lack a qualified workforce because of a mismatch of the necessary skills. Brazilian industry needs workers with specialization in chemicals, mechanical products, and mineral and metallic products and extraction, but the current workforce supply is primarily in civil construction, farming, and services.

In response, Brazilian policymakers are looking to grow enrollment in higher education as an important means of creating a skilled workforce. To do so, Brazil must confront a daunting challenge faced by many countries (including those in this paper): increasing access to higher education for more students while also increasing educational quality. Several studies have illustrated that the majority of students in top-quality universities (that is, those attending public universities, which are tuition free) come from high-income families and have attended relatively high-quality (and typically private) secondary schools with better teachers and more financial resources. Increasingly, graduates of public secondary schools are less likely to attend public universities. For example, at the University of São Paulo, the number of students coming from public secondary schools fell from 57 percent during the 1980s

[4] Institute of Economic Applied Research (IPEA), "Demanda e perfil dos trabalhadores formais no Brasil em 2007," n.d., (www.ipea.gov.br/sites/000/2/destaque/mapadoemprego.pdf) retrieved December 16, 2007.

[5] G. Paul, "Pesquisa do IPEA confirma falta de mão-de-obra qualificada," November 7, 2007, (http://oglobo.globo.com/economia/mat/2007/11/07/327066443.asp), retrieved November 14, 2007.

to 21 percent by 1998.[6] In short, this phenomenon increases the level of inequality in Brazil's system of higher education.[7]

The present government, under President Lula, has pursued several education initiatives, including the National Education Plan (PNE), which aims to increase enrollment in higher education by 2011 (among other goals), and the University for All Program (PROUNI), which offers scholarships for higher education. Although enrollment in higher education has increased in recent years, only 9 percent of the population between 18 and 24 years of age attended college in 2007, ranking Brazil among the Latin American countries with the lowest enrollment rates in higher education. In addition, the 2004 census completed by the Ministry of Education notes that only half of the vacancies available for higher education students are occupied (mainly in for-profit institutions),[8] suggesting a need to increase public funding and investment in higher education.

Basic Skills

Despite increased recognition of higher education's role in workforce development, Brazil's system of higher education continues to experience difficulties in developing courses and programs that prepare students for the challenges of new global markets and the knowledge society. Some Brazilian employers do not believe that university graduates possess the skills required for workforce success, and businesses and other employers are less willing to hire graduates who lack the necessary skills. Brazilian businesses want their professional workforce to possess heuristic skills such as "logic, critical and systemic thinking," which are important in working in a turbulent and unpredictable global economic environment.[9]

However, three human resources managers who agreed to be interviewed for this study argued that university students have become "more specialists, more technical and individualists, and less capable of dealing with the 'relational' in the systemic, social, and strategic vision."[10] According to these managers, university graduates lack both "theoretical basis" and "experiencing the reality of the profession, something that the advised internship, technical visits, and even scientific initiation projects would satisfactory supply." One human resources manager of a large company declared that "undergraduate courses do not prepare for the job market."[11] She believes colleges do not assume this role because "for that, we have specialization courses and others," which are the Brazilian equivalent to graduate courses in the North American system.

Due to widespread dissatisfaction with the workforce preparation of university graduates, Brazilian companies typically invest their resources in programs such as corporate universities. In response to concerns of inadequate workforce preparation among university graduates, one interviewed human resources manager suggested that external examination and professional certification boards might consider setting minimum quality standards for university graduates, as is already done for accountants, attorneys, and engineers in Brazil.[12]

In addition to employer concerns, university graduates themselves might become frustrated and discouraged in their job searches as they begin to realize that they do not have relevant skill-sets, despite having earned a college degree. For example, basic

[6] A. C. Silva, "Alguns problemas do nosso ensino superior," *Estudos Avançados* 15, no. 42 (2001): 269–293.

[7] As in other countries, Brazil also confronts the problem of enrolling students in higher education who possess insufficient academic preparation. In the 1990s, a consensus emerged about the need to reform Brazil's education policies, as several problems—a lack of capacity in elementary school (which includes the first through ninth grades), high rates of evasion and repetition, and low participation rates in secondary school—were negatively affecting enrollment in higher education and the country's professional workforce. Despite changes associated with the Brazilian Education Basic Tenets Law (LDB) in 1996, research and evaluation suggests that the country's educational system is decreasing in quality. For example, half of elementary school students are unable to read in their mother's language, and achievement remains low as students progress through high school, especially in technical disciplines.

[8] According to the National Institute of Educational Studies and Researches Anísio Teixeira—INEP (http://www.inep.gov.br/imprensa/noticias/censo/superior/news05_01.htm), retrieved November 19, 2007.

[9] Personal communication with Eufrasio Prates, February 2008. Please note that personal communications with Prates (here and elsewhere) refers to his interviews with these managers, who would prefer not to be named. These individuals are executives from a bank, a foundation and a press company.

[10] Ibid.

[11] Ibid.

[12] Ibid.

skills in both English and information technology are on the list of concerns of students who appeared in a profile of professionals and the job market.[13] A recent article[14] discussed the main frustration of Brazilian students

> …getting over the difficulty of occupying a job just after finishing their course. Unfortunately, any course, be it intermediary, undergraduate or graduate, holds in itself the key to this victory, mainly because of the observed asynchrony between the sphere of formation (education) and the one that employs (market), resulted by a mutual ignorance of interests, necessities and by the distance that blocks the possibility to develop, in partnership, conjoined actions.

This frustration of students indicates a misalignment between higher education curricula and desired workforce competencies.

Internships

The development of quality internship programs presents a possible solution to the perceived workforce inadequacies of Brazilian university graduates. In Brazil, internships are considered a useful tool in transitioning students into the workforce and are used in a number of ways. For example, councils that supervise the awarding of professional licenses often require internships. In other cases, internships are freely structured by higher education institutions, in which a faculty member supervises a large number of students.

Despite their potential, internships could better connect theoretical approaches stressed in college with "real world" workforce practices. There are numerous reasons why this gap exists, including disconnects between academic teaching and business practices and the exploitation of interns as "cheap workers." For example, qualitative research conducted with 53 university students about their professional profile and their experiences in higher education concluded that "the lack of professional preparation is related to the insufficient and inadequate quality of the internship programs," confirming that companies "prioritize the cheap workforce of students [to the] detriment of their learning."[15] **(FIGURE 1)** Human resources professionals interviewed for this study agreed with these conclusions. One former manager said that "many companies … still see student interns as cheap workers, thus losing quality and commitment from their teams. I hope that new legislation on internships in Brazil changes this reality."[16]

The internship program associated with the bachelor's degree in business administration at the International Association of Continued Education (AIEC) is an exception to the generally negative perception of internship programs in Brazil. The AIEC is a Brazilian institution that combines presence- and distance-based learning for students from all over Brazil, as well as students in Angola, Japan, and the United States. Their internship model is based on a contract with a medium or small company, where a group of four or five students develops a business plan with the objective of improving a company's performance and strategic results. After initial resistance from many students—who complained that internships in Brazil usually require minimal commitment or effort—AIEC's internship program was soon considered a success by participating companies (which receive free advice and consultation), universities (which continually learn about the emerging business environment), and students (who are able to apply their theoretical knowledge). This program offers a concrete example that education policies could follow.

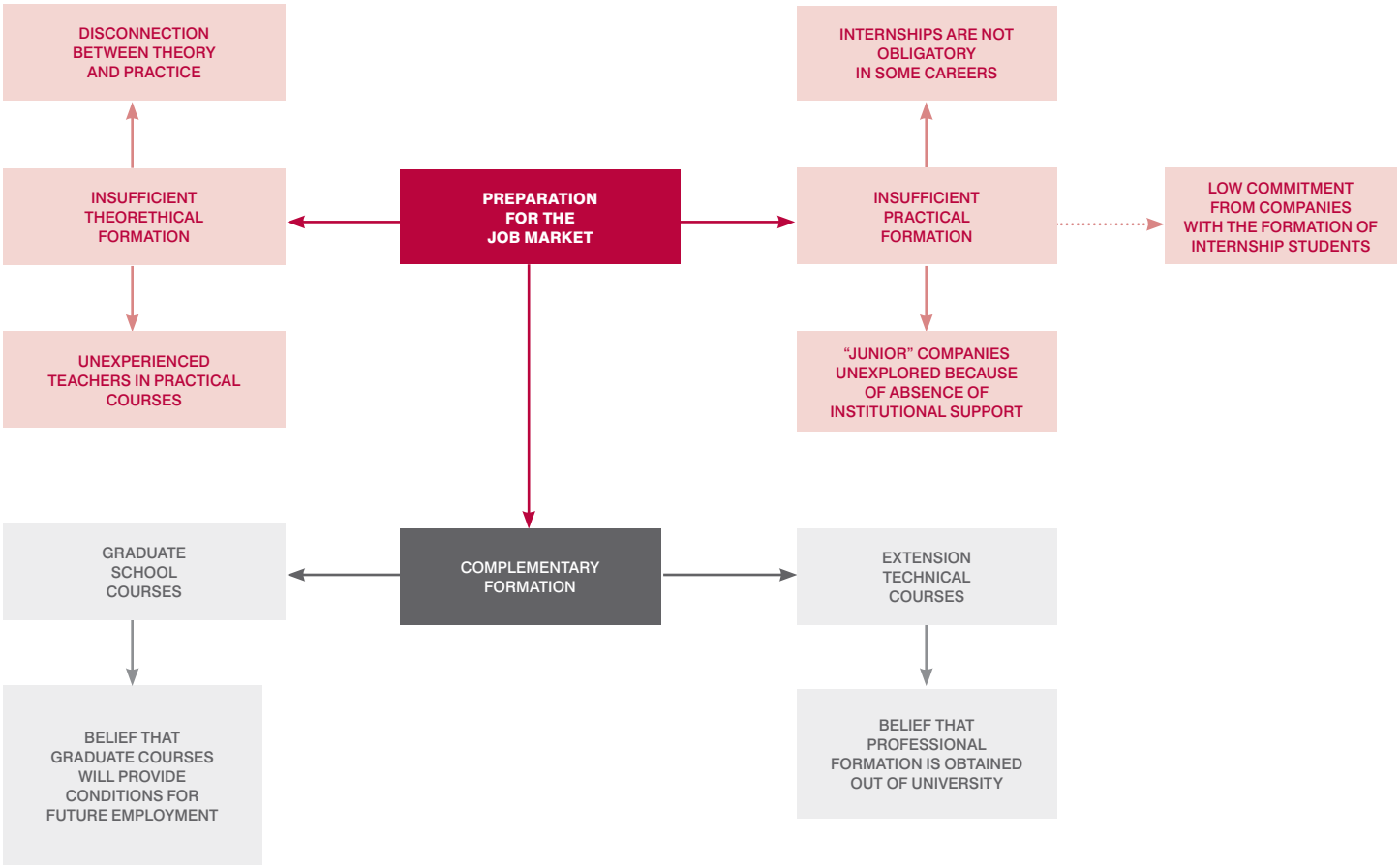
Stakeholders

Many stakeholders recognize the need to prioritize higher education's role in developing workforce skills. However, addressing this issue involves different—and sometimes contradictory—

[13] S. M. G. Gondim, "Perfil profissional e mercado de trabalho: relação com formação acadêmica pela perspectiva de estudantes universitários," *Estudos de Psicologia* 7, no. 2 (2002): 299–309.
[14] M. Wermelinger, M. H. Machado, A. A. Filho, "Políticas de educação profissional: referências e perspectivas," *Ensaio: avaliação de políticas públicas educacionais* 15, no. 55 (2007): 207–222.
[15] S. M. G. Gondim, "Perfil profissional e mercado de trabalho: relação com formação acadêmica pela perspectiva de estudantes universitários," *Estudos de Psicologia* 7, no. 2 (2002): 299–309.
[16] Personal communication with Eufrasio Prates, February 2008.

FIGURE 1

Students' Arguments with Regard to Their Formation for the Job Market



SOURCE: S. M. G. GONDIM, "PERFIL PROFISSIONAL E MERCADO DE TRABALHO: RELAÇÃO COM FORMAÇÃO ACADÊMICA PELA PERSPECTIVA DE ESTUDANTES UNIVERSITÁRIOS," *ESTUDOS DE PSICOLOGIA* 7, NO. 2 (2002): 299–309.

interests. The lack of collaboration among different stakeholders around common interests and goals represents an important obstacle that must be overcome in order to address this complex problem in a systemic way. Solutions must be developed and implemented through continual dialogue, negotiation, and (some) consensus among many of the country's social institutions. The most important participants in the Brazilian higher education system are the universities (and their faculties), the Ministry of Education (which has a secretary dedicated to technologic and professional education), the organizations that constitute the job market, professional associations and boards, and students' unions.

With very few exceptions, Brazilian public higher education institutions offer quality courses because of their large (although decreasing) budgets and their long-standing traditions in research, full-time faculty, and self-investment. In addition, these institutions are tuition free, and thus students face stiff competition for admission through entrance examinations. Unlike the public primary and secondary schools in Brazil, public universities have greater prestige than private universities. However, Brazilian public universities are very slow in changing their career courses and curricula, despite the clear emergence of new occupations stemming from technological innovation.[17]

In response to market needs, the Director of Policies Formulation for Professional and Technology Education from the Ministry of Education, Luiz Augusto Caldas Pereira, explained in a recent interview that a short-term solution is the Technology Superior Course, which is shorter than the undergraduate options requiring four to six years. Nevertheless, the Technology Superior Course is facing "a challenge for obtaining social legitimacy and recognition,"[18] probably because it is harder to prepare a young student for the professions in only two or three years (even without accounting for the challenge of balancing the humanistic and technical education).

The creation of the National Observatory of the World of Labor, whose function is to "gather information to subsidize the institutions of vocational and technological education," is good news, according to Caldas Pereira, as a means of filling the gap between the job market and workforce qualifications. As is often the case, the implementation of this kind of policy depends on many factors beyond the power of policymakers. For example, Caldas Pereira highlights "the resistance of some corporative associations that oppose and disqualify technologists because they feel threatened."[19]

Since 2003, Brazil has observed a significant increase in the percentage of students enrolled at private colleges and universities, which enroll about 70 percent of all undergraduate students in the country.[20] The main challenge for private higher education institutions—most of which are for-profit—is to survive in a competitive market defined by little public funding. In recent years, private institutions have taken advantage of decreasing salaries among public university faculty by hiring their teachers through part-time contracts, a practice that reduces overall educational quality. In 1999, less than 20 percent of faculty in private colleges had full-time contracts; yet it was clear that investing in the professorial competencies and developing a merit-based career path for teachers represented a way to improve quality at all levels of education.[21] Other higher education private institutions hire market professionals, who possess no pedagogical skills, to teach the night (or third) shift. Although some of the Lula government's policies have tried to increase salaries for the lowest paid workers, policies need to be considered to improve the economic and social conditions of teachers.

In response to challenges faced by both private and public institutions, the government has also tried to solve some of the

[17] An additional confounding factor is that the faculties of public universities are mainly positioned against the interests of capitalism as a legacy of the critical, political, and ideological resistance to the dictatorship period.

[18] Personal communication with Luiz Augusto Caldas Pereira, Eufrasio Prates, February 2008.

[19] Personal communication with Luiz Augusto Caldas Pereira, Eufrasio Prates, February 2008.

[20] Ministério da Educação, *Exposição de motivos: Anteprojeto de Lei da EducaçãoSuperior*, 2007, (http://portal.mec.gov.br/arquivos/pdf/anteprojeto.pdf), retrieved October 21, 2007. The emergence of private, for-profit colleges and universities in Brazil is in part due to the liberal policies of the Cardoso government (1995–2002), which supported the creation of new higher education institutions, which ultimately resulted in an increased number of vacancies in existing colleges and universities.

[21] A.C. Silva, "Alguns problemas do nosso ensino superior," *Estudos Avançados* 15, no. 42 (2001): 269–293.

problems in higher education by reinforcing and investing in the Federal Centers of Technological Education (CEFET), adopting a model similar to the British polytechnics system. However, these efforts did not consider the "failure" of this model since the 1990s; the adoption of this model prompted a loss in the distinct identity of technical schools relative to traditional universities,[22] and the acceptance of polytechnic students in the European labor market was the same as students who attended traditional universities. By buttressing the CEFET, the government increases the number of professionals, but does not necessarily improve employment rates, income distribution, and social equity.[23]

In addition, some research suggests that integrating the positive aspects of a traditional university model and a polytechnic, technical school model might not be feasible. One study notes a tension stemming from the underlying rationales in both kinds of institutions—the critical logic of emancipation in traditional universities and the operative logic of technical schools—as long as there is no room in the latter for reflection on social, political, or philosophical questions (e.g., the systemic complexity of our societies) due to the technical and operational focus of those courses.[24] Unfortunately, it would be difficult to combine the best characteristics of each kind of institution in terms of the development of social and technical competencies and create the kind of school that might stimulate the formation of socially concerned citizens with knowledge and technical skills to respond, in quality and quantity, to our professional and social needs. A more accurate analysis suggests that the "knowledge interconnected" society demands a broader world vision and a dynamic set of competencies, much closer to the development of "meta-learning" (i.e., the critical competence of "learning to learn").

Conclusions and Recommendations

Reasonable solutions for these challenges depend on the political will and the capacity of the main stakeholders to articulate the broad set of issues. First, key stakeholders need to define the necessary workforce competencies required of employees in a quickly transforming market, which is an important step in better facilitating enrollment into courses with high workforce demand. Second, stakeholders should develop a long-term strategy that articulates a systemic model that adequately responds to professional demands and social concerns, while also connecting policies aimed at improving quality across the public and private educational system. In support of this goal, stakeholders will need to invest in attracting, selecting, hiring, preparing, and retaining administrative personnel and pedagogical faculty who feel committed to and engaged in system improvement.

The case analysis also highlights the need for systemic change beyond aligning desired workforce competencies with policies concerning curriculum and instruction. Public institutions of higher education need additional investments and reform in the educational financing system. In pursuit of social equity, public higher education should grant further access to disadvantaged populations. Also, by auditing and monitoring planned actions, key stakeholders can reinforce the need to continually discuss and redefine desired workforce competencies. The system of higher education will only improve from the regular evaluation of data and feedback concerning the alignment of educational practices and workforce preparation.

Therefore, as usual in complex matters, no single initiative holds the key to solve these problems—and to lead Brazil to the position around the world it potentially deserves.

[22] J. Brennan, S. Lyon, H. Schomburg, and U. Teichler, "Employment and Work of British and German Graduates," in *Higher Education and Work*, in eds. J. Brennan, M. Kogan, and U. Teichler (London: Jessica Kingsley Publishers, 1996), chapter 3.

[23] M. Wermelinger, M. H. Machado, A. A. Filho, "Políticas de educação profissional: referências e perspectivas," *Ensaio: avaliação de políticas públicas educacionais* 15, no. 55 (2007): 207–222.

[24] M. Ciavatta, "Os centros federais de educação tecnológica e o ensino superior: Duas lógicas em confronto," *Revista Educação e Sociedade*, Campinas 27, no. 96 (2006): 911–934.

FIGURE 2

Summary of College-Educated Workforce Indicators in Mongolia (2000–2007)

	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
NUMBER OF STUDENTS	84,985	90,644	98,453	108,738	123,824	138,019	142,411
NUMBER OF NEWLY ACCEPTED STUDENTS	26,749	27,549	31,597	34,549	42,787	42,854	39,460
NUMBER OF GRADUATES	14,868	17,671	18,289	21,109	22,397	23,628	–
NUMBER OF EMPLOYED GRADUATES	1,947	3,731	4,824	7,037	7,924	7,606	–

SOURCE: MINISTRY OF EDUCATION, CULTURE, AND SCIENCE (MECS), *DEED BOLOVSROLYN SALBAR 2006–2007 [TERTIARY EDUCATION 2006–2007]: STATISTICAL DATA* (ULAANBAATAR, MONGOLIA: MECS, 2007).

MONGOLIA

Mongolia presents a very different context for change in higher education. Since the early 1990s, Mongolia has transitioned from a centrally planned economy to a market economy, bringing about enormous changes to the Mongolian higher education sector. The most obvious changes include the emergence of a substantial private sector and an increase in the number of institutions, which in turn has resulted in an increase in the number of students in tertiary education. As of the 2006–2007 academic year, there were 170 universities, colleges, and higher education institutions—48 public, 116 private, and 6 branches of foreign universities—providing educational services to more than 140,000 students. Since the 2000–2001 academic year, enrollment has dramatically increased by 60 percent[25] **(FIGURE 2)**. The increases in enrollment indicate that people are exercising opportunities to further their education, opportunities that were once restricted. Now anyone who wishes and can afford to attend (and who is accepted by a university) is able to pursue higher education.

On the other hand, access to higher education seems to be increasing rates of unemployment because of a shortage in the supply of jobs requiring a college education. Enrollment in higher education institutions in Mongolia can be characterized as "rights-based" or "interests-based" rather than being based on national workforce needs. A large percentage of students pursue fields such as foreign language education, management, law, and banking; students often consider these fields more attractive than technical and production-related fields. Students are also more attracted to universities and colleges than to vocational and technical schools.

Therefore, there is a surplus of university graduates who do not want blue-collar jobs but do not qualify for the jobs that they desire, thus increasing the unemployment rate. An official from the employment agency of the Mongolian Employers' Association explained that college graduates do not accept blue-collar jobs in sectors like construction. However, they are not qualified for jobs that require technical skills, such as engineers. Because of their limited computer skills and foreign language knowledge (especially English), the majority of the applicants are rejected by employers.[26]

According to official statistics, the unemployment rate is 3.4 percent.[27] However, it is generally accepted that this figure underestimates actual unemployment. Mongolia's 2007 *Human Development Report* offers a more reliable estimate based on labor force surveys: 6.6 percent based on a living standards measurement survey that uses a "strict" definition of unemployment, which counts persons without work, available for work, and actively seeking work; and 14.2 percent based on a labor force survey that uses a "relaxed" definition of unemployment, which counts all persons without work and available for work who may or may not be looking for employment.[28]

Basic Skills

There is a general consensus among the public, and specifically employers, that the graduates of universities, colleges, and higher education institutions do not qualify for many jobs because they lack necessary skills. The courses and programs offered at universities, colleges, and other higher education institutions do not meet the demands of the labor market. According to Mongolia's 2007 *Human Development Report*, one of the significant causes of unemployment is the mismatch between the skills that jobseekers possess and the skills employers want from employees.[29] A 2004 survey conducted by Mongolia's National Statistics Office also reinforces these perceptions. The survey found that 71 percent of companies

[25] Ministry of Education, Culture, and Science (MECS), *Deed bolovsrolyn salbar 2006–2007 [Tertiary Education 2006–2007]: Statistical Data* (Ulaanbaatar, Mongolia: MECS, 2007).

[26] For example, one study found that one in six Mongolian jobseekers that hold a bachelor's degree could not even spell the word "bachelor" correctly in their job applications. Sumiyabazar, C. Ajilguidel buurlaa. Unemployment reduced—States NSO. *MonInfo*. August 16, 2006. Retrieved March 18, 2008 from http://www.moninfo.org/content/view/181/17/lang,mn/.

[27] National Statistics Office (NSO), Living Standards Measurement Survey. (Ulaanbaatar, Mongolia: NSO, 2004)

[28] United Nations Development Programme (UNDP), "Employment and Poverty in Mongolia (executive summary)," in *Mongolia Human Development Report* 2007 (Ulaanbaatar, Mongolia: UNDP, 2007).

[29] Ibid.

had difficulties recruiting employees, with 80 percent judging that applicants did not have suitable skills and 67 percent claiming that jobseekers lacked experience.[30] In addition, employers complained that employees did not demonstrate commitment on the job or an ability to adapt, noting the absence of a work ethic and problems with communication skills.[31]

In many instances, university courses and programs are too academic and lack an assessment component to ensure that they reflect workforce needs. The Mongolian higher education sector lacks available data and research.[32] According to the *Higher Education Sector Analysis* completed in 2005, the standards for communication skills, foreign languages, computer skills, and independent and team work skills that are necessary in the competitive job market have been introduced to undergraduate degree programs. But the report noted that there are no concrete data on the graduates' level of acquisition of skills during their study at universities. A recent discussion among higher education institution representatives on the quality of preparation of undergraduate law program graduates seems to support the observation. During an interview with a Mongolian national broadcaster, the spokesman of the Ministry of Justice and Internal Affairs claimed that barely 20 percent of the graduates of undergraduate law programs pass their certifying exams. The participants agreed at the end of the session that national standards for undergraduate law programs should be developed.

Internships

The practicum has long been a part of undergraduate programs in the Mongolian higher education system. Normally, undergraduate students complete a four-week practicum in their sixth or seventh semester. In some programs (e.g., pre-service teacher education programs), students are expected to complete the practicum in two prolonged stages: the first stage, known as the observation practicum, is where students learn and acquire fundamental skills under strict supervision; and the second stage, sometimes referred to as the independent practicum, is where they work with less supervision.[33]

The practicum will remain an important and inseparable component of all undergraduate programs. The Minister of Education, Culture, and Science issued a decree on new guidelines for higher education institutions in November 2007, stating that it is the duty of directors of higher education institutions to organize student practicum activities (such as internships) and to adopt measures to provide employment-related assistance to their graduates. The decree also highlights the fact that students have the right to be provided with these services.

The practicum programs in Mongolia could be improved to better prepare students for the workforce. In most cases, students in practicums are seen as cheap workers who either complete mundane tasks such as copying and typing, or serve as a substitute for someone else's job, but without much guidance. The latter situation is seen among student-teachers or pre-service education students. School teachers perceive them as their substitutes and delegate most of their responsibilities, including teaching, marking student work, and organizing activities, both curricular and extracurricular, to practicum students.

Stakeholders

To understand the changes in higher education in Mongolia—and their relationship to workforce development—one must examine the attitudes and actions of the primary stakeholders. Unfortunately, important stakeholders rarely engage one another to help improve the workforce preparation of undergraduate students.

A few independent organizations—namely, the Association of Specialized Accountants, the Bureau of Lawyer Accreditation, and a few others—actively collaborate with universities and

[30] National Statistics Office (NSO), Living Standards Measurement Survey. (Ulaanbaatar, Mongolia: NSO, 2004)

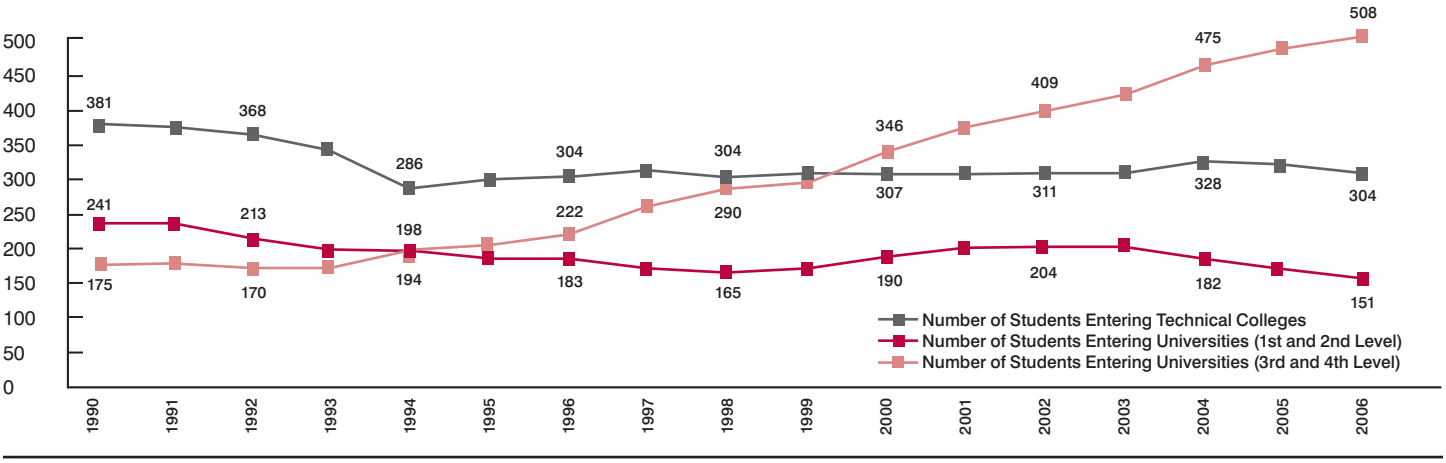
[31] Ibid.

[32] C. Purevdorj et al., *Bolovsrolyn salbaryn nuhtsul baidlyn sudalgaany dun shinjilgee [Education Sector Analysis]* (Ulaanbaatar, Mongolia: Ministry of Education, Culture, and Science, 2005).

[33] Mongolian State University of Education (MSUE), *Bagsh bolovsrolyn standart [Pre-service Teacher Education Standards]* (Ulaabataar, Mongolia: MSUE, 2005).

FIGURE 3

The Number of Students Entering Ukrainian Higher Education (in thousands)



SOURCE: STATE STATISITCS OF UKRAINE (DERZKOMSTAT)

higher education institutions in their field. Some universities maintain projects to improve their undergraduate degree programs. The Mongolian State University of Education (MSUE), for example, implemented a three-year megaproject called "Teacher 2005," funded by the education program of the Mongolian Foundation of Open Society (now known as the Mongolian Education Alliance, a nongovernmental spinoff organization), to reform its pre-service teacher education program by reviewing and updating the courses to meet current trends and demands.[34] However, there is clearly a need for active involvement of all stakeholders in enhancing the level of workforce preparation that undergraduate students receive from their study.

Higher education institutions themselves are concerned about the professional development of teaching faculty. Teaching faculties are getting older, and the universities and other higher education institutions encounter problems recruiting young professionals as faculty members because skilled and well-educated young people are attracted to lucrative fields such as business. Therefore, higher education institutions recruit graduates who often lack real-world experience. As a result, faculties of higher education institutions ironically consist of (a) professors from the old, centrally planned system who do not necessarily understand the required competencies of the current economic environment; or (b) inexperienced, and usually unskilled, young people.

Finally, the government barely supports the higher education sector, especially public institutions. In essence, the higher education sector is left on its own. If the government decides to be involved in higher education issues, it is to enforce some regulation meant to ensure quality educational services—for example, provisions regarding learning environments such as facilities and laboratories—intended to protect opportunities for students to acquire skills and experiences or to assist recruitment of qualified faculty to teach at higher education institutions.

Conclusions and Recommendations

Numerous issues affect the ability of Mongolian universities to improve the workforce preparation of their graduates, and a number of policies may prove useful in addressing these issues. First, key stakeholders, including employer representatives, should engage one another in the challenge of workforce preparation. In this way, employers and their future employees, as well as universities and any other involved parties, would be satisfied. Of course, such collaboration would require a great deal of effort and coordination—and involve some conflicts—but it would result in graduates leaving university more prepared for the workforce.

Second, key stakeholders should consider establishing some type of career services unit. With the exceptions of the practicum as part of degree programs and job fairs organized by student organizations, students at most higher education institutions do not receive assistance in employment preparation or any other career-related issues from their host institutions or any other organizations. Therefore, a career services center could serve the student population by providing workshops on searching for jobs and basic workforce skills. The workshops could teach interview skills, writing resumes, writing application letters, and many other important skills that are never taught at any level of schooling. As the majority of the universities and colleges are located in the capital, a career services center in the capital city would be a good place to begin this effort.

Finally, institutions of higher education need more and better data for evaluative purposes. Quality assurance at higher education institutions is currently limited to institutional accreditation. Some form of a clear quality-monitoring system would ensure the continuing quality of educational services at the tertiary level.

[34] Mongolian State University of Education (MSUE), *Bagsh bolovsrolyn standart [Pre-service Teacher Education Standards]* (Ulaabataar, Mongolia: MSUE, 2005).

UKRAINE

Like Mongolia, Ukraine is a postcommunist country. To many observers, Ukraine's system of higher education might appear to be successful; the available (albeit limited[35]) data on its system of higher education would make many ministers of education proud. Between 1990 and 2006, the number of students who enrolled in universities increased by almost 60 percent[36] **(FIGURE 3)**. In addition, the number of third- and fourth-level universities—or academies, universities, institutes, and conservatories, which are all equivalent to Western universities—more than doubled between 1990 and 2006, and the country now has 920 universities at all levels of accreditation.[37] In 2006, Ukraine's graduation rate approached 84 percent for universities of all accreditation levels;[38] the average graduation rate of OECD countries was about 36 percent in 2005.[39] In addition, the number of Ukrainian PhD students possessing the degree of candidate of sciences increased by 250 percent between 1990 and 2006.[40]

Despite these positive indicators, the Ukrainian system of higher education has also experienced its share of problems. First, funding for higher education has decreased dramatically. In addition, higher education is suffering increasing brain drain, and academics remaining in Ukraine often must find second and third jobs. These problems have diminished the quality of higher education in Ukraine.

The poor performance of recent Ukrainian university graduates in the labor market is a result of this decrease in quality. From 2001 to 2006, between 15 percent and 18 percent of all unemployed Ukrainians were graduates of secondary and higher education institutions.[41] Within the same time period, the percentage of unemployed graduates of secondary and higher education institutions decreased from (a shocking) 62 percent in 2001 to (a still troubling) 32 percent in 2006;[42] by comparison, the unemployment rate for recent university graduates in OECD countries was less than 5 percent in 2000.[43] Given that most workforce demand is in agriculture, manufacturing, construction, trade, and repair—sectors employing graduates of technical colleges—one may conclude that the unemployment rate of university graduates in Ukraine may be even *higher*.[44]

Basic Skills

The relatively high levels of unemployment among university graduates might stem from a misalignment between the skills desired by Ukrainian employers and the skills of university graduates. Although research does not indicate which skills Ukrainian employers specifically want from university graduates, several recent surveys of Ukrainian employers offer some ideas about desired workforce competencies.[45] In one survey, employers identified the types of tests they use to screen job applicants. Employers overwhelmingly assess motivation (90 percent of employers), teamwork (75 percent), knowledge of foreign languages (55 percent), and job competence (55 percent).

Another survey of Ukrainian employers indicates that employers experience difficulties when searching for good specialists in the "new market."[46] If employers cannot fulfill this workforce

[35] "Ukraine is flagrant in maintaining the secrecy of data on the [education] sector." In Berryman, S.E. (2000). *Hidden challenges to education systems in transition economies*. Washington DC: World Bank., p. 83

[36] State Statistics Committee of Ukraine (Derzkomstat), accessed November 2007.

[37] Ibid.

[38] Data from State Statistics Committee of Ukraine (Derzkomstat) indicate more than 100 percent graduation rates for universities of 3rd and 4th level of accreditation between 1998 and 2003. The author (Prytula) believes this is due to double counting of those studying for two degrees simultaneously. In 2004, Derzkomstat changed its calculation of the graduation rate, and beginning that year, the reported graduation rate was below 100 percent, albeit remaining at an unbelievably high level of 98.8 percent for 2005 and 2006. The graduation rates for universities of 1st and 2nd levels of accreditation for 2005 and 2006 were 71 percent and 68 percent, respectively.

[39] Organization for Economic Cooperation and Development (OECD), *Education at a Glance 2007. OECD Indicators* (Paris: OECD, 2007).

[40] The candidate of sciences degree is the first postgraduate degree offered in Ukraine, and it corresponds to the Western PhD. The second, and highest, postgraduate degree in Ukraine is the doctor of science.

[41] State Statistics Committee of Ukraine (Derzkomstat), accessed November 2007.

[42] Ibid

[43] M. Cervantes, "Scientists and Engineers: Crisis, What Crisis?" *OECD Observer*, no. 240/241 (December 2003). See: http://www.oecdobserver.org/news/fullstory.php/aid/1160Scientists_and_engineers.html.

[44] Reference Derzkomstat data on demand of enterprises for employees, by type of economic activity: www.ukrstat.gov.ua. Note: author's calculations do not account for those who find employment abroad; the estimated number of economic migrants from Ukraine is between 2 and 7 million.

[45] DengiUA, "Tests during Job Application," 2006, (www.dengi-ua.com/clauses/10685.html), retrieved March 18, 2008.

[46] DengiUA, "Why It Is Good to Have a Foreign Diploma," 2006, (www.dengi-ua.com/clauses/10654.html), retrieved March 18, 2008.

demand with new university graduates, they recruit, and compete against each other for, existing specialists in their industry by offering high salaries. Alternatively, many large companies have established corporate universities to train specialists and have begun recruiting graduates from prestigious foreign universities.

Students also recognize the shortcomings of Ukrainian higher education institutions in terms of workforce preparation, as can be gleaned from the results of a survey organized by the Consortium of Universities for Autonomy and financed by the International Renaissance Foundation.[47] The survey asked Ukrainian students whether they planned to work in their chosen field of study in the future: only 13 percent said "yes," while 57 percent said "no." Across all fields of study profiled in the survey—the technical, natural, social, and humanitarian sciences—students overwhelmingly expressed pessimism about the likelihood of working in their discipline. For example, 44 percent of students in the technical sciences believed that they would not work in their field of study, and only 13 percent believed that such opportunities would exist.

Internships

In theory, internships could help bridge the gap between academic and workforce skills in Ukraine. However, internships (practicums) often constitute an obligatory, for-credit part of the educational process. According to the Ukrainian state standards, undergraduate students must complete an 8- to 10-week internship during their study; graduate students must complete a pedagogical internship of approximately 4 weeks. The Ministry of Education and Science requires universities to find internship placements for each student. At the same time, recent increases in the number of students makes this obligation impractical (if not impossible) for universities, especially provincial ones. That said, the quality of internships is relatively better in vocational and professional institutions that have long-standing relationships with employers.

Not surprisingly, students consider internships one of several formal (and boring) steps toward receiving a degree rather than an opportunity to obtain new practical knowledge or search for employment. The formulaic, perfunctory nature of internships is highlighted, at least indirectly, by searching the Ukrainian or Russian translation of the words "internship report" on the Internet, which identifies dozens of online databases that contain written internship reports that students can download and submit to fulfill their requirements for the internship.[48]

Stakeholders

If Ukraine is to better develop its workforce through higher education, it will need to engage a diverse set of stakeholders, as described on the following pages. First, the Ukrainian government will need to become more engaged in facilitating conversations with other interested parties, such as higher education institutions and employers, to discuss workforce requirements. During their 2007 meetings associated with the Bologna Process—the reforms that intend to make European higher education more compatible and comparable, as well as more competitive and more attractive for Europeans and for students and scholars from other continents—the ministers responsible for higher education across Europe announced their priorities for the coming years. Among many priorities, ministers focused on the employability of graduates and the responsibility of national stakeholders, emphasizing "partnerships and cooperation with employers in the ongoing process of curriculum innovation based on learning outcomes."

Despite this declaration, Ukraine had not examined the relationship between higher education and workforce development until recently. In cooperation with the Ministry of Labor, the Ministry of Education organized a series of roundtable discussions focused on the employability of graduates. Recommendations from these meetings included curriculum reform, closer cooperation between universities and employers, and establishing

[47] V. Morynets, "Independent Accreditation of Higher Education Institutions: Way of Realization," 2006, (www.osvita.org.ua/articles/75.html), retrieved March 18, 2008.

[48] Interestingly, some of these databases provide a search service where users can find internship reports by certain professions, by city, and even by specific company, as well as order ready-to-submit internship reports.

university-based job agencies. However, the ministry has yet to pursue any of the recommendations.[49]

Instead of adopting recommendations such as improving higher education curriculum and more closely cooperating with employers, the government attempts to address workforce problems by changing the labor market regulations according to the output of higher education. For example, at the beginning of the Orange Revolution—the political protests occurring between November 2004 and January 2005 in the immediate aftermath of the 2004 Ukrainian presidential election—the Ukrainian Parliament passed a law aimed to guarantee youth their first job. According to the law, the government grants employers two-year subsidies when they hire youth for their first job in their chosen profession (specialty), and the state employment service assigns youth to the jobs. Employers receive monthly subsidies totaling the employer's actual cost for salary and benefits (but not more than the average salary in the region) of young employees. Employers must ensure employment to those accepted and not break labor agreements with these individuals due to a reduction in the number of employees during the two-year period.

The Cabinet of Ministers of Ukraine annually defines the list of professions—such as engineers, construction workers, and several metallurgy professions—for which employers may obtain the subsidy and reserves the necessary funds in the state budget. Beginning in 2008, the Cabinet of Ms. Tymoshenko decided to reserve UAH 32 million per year (approximately US$6.4 million) in the state budget for these purposes (although the amount may change in subsequent years). However, the Ministry of Labor's plans for granting subsidies affects only 1,085 graduates, less than 0.15 percent of all Ukrainian graduates.[50]

In addition to shortcomings in funding, this law may accomplish the opposite of its intent. First, in Ukraine, salaries in the subsidized professions are higher than the average salary. Yet the law limits the subsidy (which is equal to the salary) for youth to the average in a given region, not profession. This might induce recent graduates to disregard such job opportunities or encourage employers to make side, or "envelope," payments. Second, the law will be difficult to implement due to the changing nature of a market economy: it is difficult to know which fields will need workers in the future. Further, this approach did not work in the past because there were no funds reserved in the state budget for implementation.

The lack of governmental action to implement recommendations for enhancing the relationship between higher education and workforce development also highlights the need to design a new management structure for Ukrainian higher education. The current university management system is structured as it was during the Soviet era, but a new model is required to respond to the existing political and economic context, in which other sources of financing are available and universities are pursuing opportunities in the international educational market.

The government's reaction to addressing differences in the supply and demand of new specialist workers offers one example of management shortcomings in Ukrainian higher education. The collapse of the Soviet Union and the emergence of a market economy have affected the structure of the Ukrainian labor market. The virtual disappearance of the military industry and related production, together with the emergence of a new service sector, resulted in disequilibrium between the supply and demand of new specialists, which has prompted calls for immediate intervention by the government into the so-called *system of state order* for specialists. However, the reaction of the Ministry of Education, which is responsible for this state order, has been very rigid and lags behind several years in its implementation. As a result, the disequilibrium has persisted for

[49] V. Morynets, "Independent Accreditation of Higher Education Institutions: Way of Realization," 2006, (www.osvita.org.ua/articles/75.html), retrieved March 18, 2008.

[50] Ministry of Labor and Social Policy of Ukraine, December 27, 2007, http://mlsp.kmu.gov.ua/control/uk/publish/article;jsessionid=CF94A92E2EC616B9605B1C139CD6C67A?art_id=71331&cat_id=34950), retrieved March 18, 2008.

years, exacerbating the problem. According to the recent estimates of the Ministry of Labor, the overproduction of specialists in some fields is as high as 16 graduates for each job.[51]

Ukraine inherited an educational system from the Soviet Union that consisted exclusively of state-owned institutions. Although the system proved successful within the context of a Soviet planned economy, it does not properly respond to challenges of the new reality of a market economy (as mentioned above). S. E. Berryman[52] notes the following:

> ECA (European and Central Asian) education systems that were a good fit with planned economies and authoritarian political systems are a poor fit with market economies and open political systems. International evidence shows that they are not creating the best product for a market economy. Market economies—and open societies—require abilities to apply knowledge flexibly, to cope with the cognitive requirements of unfamiliar tasks, to recognize and solve problems, and to self-manage new learning. The content and structures of curricula and textbooks and prevailing teaching practices in ECA do not seem to support the acquisition of these skills.

Indeed, even with adequate resources and the best of intentions, universities have limited control over instruction due to prescribed state standards. With few exceptions, state standards for each of the approximately 1,500 specialties and specializations are developed by university administrators with almost no input from employers, and a majority of these standards remain the same as those in the Soviet planned economy. For each specialty, state standards are approved by the State Accreditation Commission and are obligatory for both public and private universities in order to be accredited. According to these state standards, the ministry prescribes 67 percent of courses, 23 percent are prescribed by the home university, and only 10 percent of courses are optional and can be chosen by students from a (very short) list.[53] The required curriculum is overloaded with a number of courses that are not directly relevant to the field of study. Only half (91 out of 172 credits) of a student's academic load is devoted to training in the field of specialization; the rest is devoted to general socio-humanitarian and science disciplines. As mentioned in the literature,[54] curriculum reform (including its decentralization) is a critical step in successfully reforming instruction. Recently, the Confederation of Employers of Ukraine elaborated a Concept of National System of Qualifications, in which they demand legal approval of their participation in elaboration of state standards.[55]

Ukrainian higher education institutions also confront the challenge of teaching students who come with inadequate academic preparation. Decreasing quality in the system of primary and secondary education impedes the ability of students to meet the challenges of the global, market economy. The organizers of the Ukrainian round of the Trends in International Mathematics and Science Study (TIMSS) concluded that although the general level of pupils' knowledge is close to the average for all countries, pupils in Ukraine demonstrated comparatively poor results in solving nonstandard or "real-life" problems.[56] In addition, the current labor market situation does not encourage students (at all levels) to perform better: returns to schooling are considerably lower in Ukraine as compared with similar countries (Russia, for example).[57]

[51] S. Melnyk, "Sample Overview of the Correspondence of Educational Services to National Labor Market Needs," 2008, (www.lir.lg.ua/osv_poslugi.htm), retrieved March 18, 2008.

[52] S. E. Berryman, *Hidden Challenges to Education Systems in Transition Economies* (Washington, DC: World Bank, 2000).

[53] For so-called national universities, the distribution is a bit different, with more courses at the discretion of a home university.

[54] See, for example, S. E. Berryman, *Hidden Challenges to Education Systems in Transition Economies* (Washington, DC: World Bank, 2000).

[55] Confederation of Employers of Ukraine, "Concept of National System of Qualifications," 2007, (www.confeu.org/assets/files/anons/Concept_21-10-2007.doc), retrieved March 18, 2008.

[56] O. Liyashenko et al., *Report on Quality Monitoring of Fourteen Age Pupil Knowledge in Mathematics and Sciences* (Kiev, Ukraine: Centre for Testing Technologies, 2005).

[57] Y. Gorodnichenko and K. S. Peter, "Returns to Schooling in Russia and Ukraine: A Semiparametric Approach to Cross-Country Comparative Analysis," *Journal of Comparative Economics* 33, no. 2 (2005): 324–350.

Conclusions and Recommendations

Despite the conservatism of the Ukrainian educational system and its slow reaction to reforms, several preventive policy interventions could significantly affect the mid- and long-term quality of the country's college-educated workforce. Other curative interventions immediately improve the ability of higher education institutions to prepare their graduates for the workforce.

First, universities could assume active roles in establishing employment-related services for their students, which may include professional counseling, sight visits, support for internships, training for jobseeking, as well as direct support in the job-search process.[58] In addition, universities, employers, and the government need to collaborate to offer special (for-credit) courses that focus on developing higher-order and affective skills desired by employers. Research shows that skills directly related to employment can be taught.[59]

In addition to curative policies, preventive policies could be considered to improve the long-term ability and capacity of universities to train graduates for a global economy. Academic and administrative decentralization should be considered to increase the efficiency of the higher education system. The first step toward decentralization might be to reform state standards and reduce the number of specialties, making higher education more interdisciplinary. Reform of university management (and the management of education at all levels) should also be a part of decentralization. Importantly, the initial steps toward decentralization have already been made; eight universities have formed a Consortium of Universities for Autonomy and proposed changes to the Law on Higher Education in the direction of decentralization.

In addition to decentralization, curriculum reform should be considered by Ukrainian stakeholders. University programs should reflect workplace competencies and knowledge, yet in many cases, curricula do not incorporate new ideas. With the assistance of new governmental policies, universities could replace traditional teaching methods—in which instructors serve as experts who convey knowledge to passive learners by emphasizing facts and "right answers"—with newer instructional methods that require students to assume responsibility for their learning and focus on framing complex ideas, issues, and problems within a meaningful context.[60] Such newer instructional methods reinforce many of the basic and applied skills desired by employers, including the expectation that workers assume responsibility for identifying and solving problems, analyzing and solving nonroutine issues, and making decisions within a broad organizational and operational context.[61]

Along with changing what is taught to students, curriculum reform should include examining how students are taught at universities. Existing research on developing work-related skills emphasizes that students most effectively learn such skills when instructors assume the role of facilitators and coaches rather than lecturers, requiring students to assume much of the responsibility for their own learning.[62] The same research stresses that teachers are most successful when they have considerable autonomy in establishing curriculum, classroom design, and instructional approach. Moreover, democratic instructional approaches are superior to indoctrinational approaches for imparting employability skills to students.

A final preventive recommendation is to improve data collection methods across institutions of higher education and the government. The success of future policy interventions depends on the gathering

[58] U. Teichler, "Students and Employment: The Issues for University Management," *Higher Education Management* 6, no. 2 (1994): 217–225.

[59] L. L. Buck and R. K. Barrick, "They're Trained, but Are They Employable?" *Vocational Education Journal* 62, no. 5 (1987): 29–31; J. A. Gregson, "Effective Pedagogical Strategies for Work Attitudes Instruction," *Journal of Industrial Teacher Education* 29, no. 3 (1992): 60–79; C. Stasz, D. J. McArthur, M. W. Lewis, and K. Ramsey, *Teaching and Learning Generic Skills for the Workplace*, R-4004-NCRVE/UCB (Santa Monica, CA: The RAND Corporation, 1990).

[60] S. E. Berryman, *Hidden Challenges to Education Systems in Transition Economies* (Washington, DC: World Bank, 2000).

[61] Ibid

[62] K. Cotton, *Developing Employability Skills* (Portland, OR: The Northwest Regional Educational Laboratory, 1993); J. A. Gregson, "Effective Pedagogical Strategies for Work Attitudes Instruction," *Journal of Industrial Teacher Education* 29, no. 3 (1992): 60–79; C. Stasz, D. J. McArthur, M. W. Lewis, and K. Ramsey, *Teaching and Learning Generic Skills for the Workplace*, R-4004-NCRVE/UCB (Santa Monica, CA: The RAND Corporation, 1990).

of relevant, timely data on the socio-economic, demographic, and educational status of the population. It is also important to have both public and private institutions gathering data.[63]

Policy implementation is always a challenge. This is especially true in a relatively conservative educational community that has experienced dramatic changes in different aspects of its society within the last 20 years. It is imperative to start a nationwide discussion of these issues. There should be the political will of the central government to make educational reforms. First steps should include (independent) collection of relevant data, its deep analysis, and reporting to the public. It is widely agreed that participatory strategic planning methods are particularly helpful in planning reforms in post-communist countries, which are going through the long-term process of changing their management practices.[64]

UNITED STATES

American higher education has assumed an expanded role in workforce development over the past several decades. As job creation has shifted toward occupations that require some college and nearly all jobs requiring postsecondary skills, an increasing percentage of Americans have attended at least some postsecondary education. In 1973, only 28 percent of American workers had at least some postsecondary education; by 2000, 59 percent of American workers had attended at least some college.[65] The growing demand for a more skilled workforce has prompted American education, government, and business leaders to emphasize both academic and applied skills in the college curriculum.

Yet looming demographic changes may challenge the United States' ability to meet expanding workforce needs. The imminent retirement of the baby boomers generation will deplete the American workforce over the next 20 years.[66] By 2020, approximately 46 million workers with at least some college will be over 55 years of age.[67]

The retirements of these workers are especially problematic in the context of broader demographic and employment trends in the country. The American workforce has grown by almost half (roughly 39 million workers) over the past 20 years, but its growth will slow to only 16 percent over the next several decades.[68] Some conclude that the combined effects of baby boomer retirements and slower growth of the workforce could result in labor shortages of at least 20 million workers, assuming moderate employment growth rates and a continuing increase in the skill requirements of jobs; two-thirds of the expected shortage in 2020 will exist in the most skilled jobs, resulting in a net deficit of workers with at least some college of about 14 million workers.[69]

Basic Skills

Within the context of projected shortages among skilled workers, American leaders are increasingly interested in aligning academic programs and workforce requirements to optimize the global

[63] Systematic Research Inc. (www.systemic.com) is an excellent example of a private educational research institution.

[64] Y. Prytula and S. Umpleby, "Improving the Performance of Universities in Transitional Economies" (March 2008). Prepared for the European Meeting on Cybernetics and Systems Research, Vienna, Austria.

[65] A. P. Carnevale and D. M. Desrochers, "The Political Economy of Labor Market Mediation in the United States," in *Workforce Intermediaries for the Twenty-first Century*, ed. R. P. Giloth (Philadelphia: Temple University Press, 2004), ch. 7. American workers have also enjoyed increasing returns on higher education in terms of personal income. The expected lifetime earnings of males with a bachelor's degree in 1979 were 51 percent higher than their peers possessing only a high school diploma; however, by 2004, this earnings difference had widened to 96 percent (Educational Testing Service, *America's Perfect Storm: Three Forces Changing our Nation's Future* [Princeton, NJ: Educational Testing Service, 2007]). In addition to enjoying higher earnings, college graduates have greater access than high school graduates to employer-provided benefits such as health care coverage and employer-sponsored retirement programs (A. P. Carnevale, "Discounting Education's Value," *The Chronicle of Higher Education* 53, no. 5 [2006]: 6).

[66] D. T. Ellwood, *The Sputtering Labor Force of the 21st Century: Can Social Policy Help?* (NBER Working Paper 8321), 2001, (www.nber.org/papers/w8321), retrieved March 18, 2008.

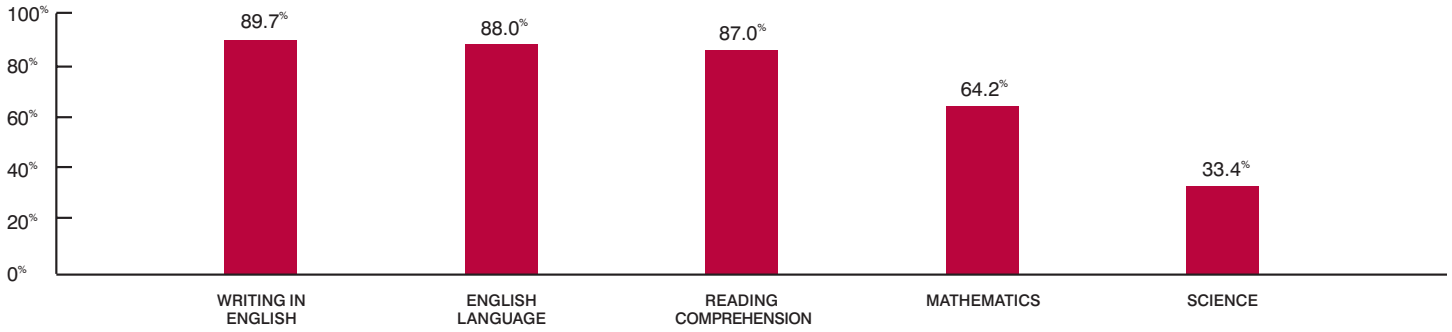
[67] A. P. Carnevale and R. A. Fry, *The Economic and Demographic Roots of Education and Training* (Washington, DC: National Association of Manufacturers, 2001).

[68] D. T. Ellwood, *The Sputtering Labor Force of the 21st Century: Can Social Policy Help?* (NBER Working Paper 8321), 2001, (www.nber.org/papers/w8321), retrieved March 18, 2008.

[69] A.P. Carnevale and D. M. Desrochers, "The Political Economy of Labor Market Mediation in the United States," in *Workforce Intermediaries for the Twenty-first Century*, ed. R. P. Giloth (Philadelphia: Temple University Press, 2004), ch. 7. The United States is projected to fall further behind other countries in the attainment of college degrees because of the United States' relatively low college graduation rates, particularly among students from minority and low-income groups (Jobs for the Future, *Hitting Home: An Analysis of the Cost, Access and Quality Challenges Confronting Higher Education Today* [Boston: Jobs for the Future, 2007]). The United States has dropped to 5th in the percentage of 18- to 24-year-olds enrolled in college and ranks 16th (out of 27 countries) in the proportion of students who complete college certificate or degree programs (National Center for Public Policy and Higher Education, *Measuring Up: The National Report Card on Higher Education* [San Jose: The National Center for Public Policy and Higher Education, 2006]).

FIGURE 4

Basic Skills of Four-Year College Graduates Identified as "Very Important" by American Corporations



SOURCE: THE CONFERENCE BOARD, INC., PARTNERSHIP FOR 21ST CENTURY SKILLS, CORPORATE VOICES FOR WORKING FAMILIES, AND SOCIETY FOR HUMAN RESOURCE MANAGEMENT, *ARE THEY REALLY READY TO WORK? EMPLOYERS' PERSPECTIVES ON THE BASIC KNOWLEDGE AND APPLIED SKILLS OF NEW ENTRANTS TO THE 21ST CENTURY U.S. WORKFORCE* (NEW YORK: THE CONFERENCE BOARD, 2006).

competitiveness of the college-educated workforce. A recent survey of more than 400 corporations provides an employer's perspective on the workforce readiness of college graduates.[70] For employers, the three basic skills overwhelmingly identified as "very important" for work were writing in English, speaking in English, and reading comprehension) **(FIGURE 4)**.

In addition to basic skills, the survey examined the most important applied skills that graduates need to demonstrate on the job. Employers considered five applied skills as particularly important: oral communication (95 percent identified as "very important"); teamwork (94 percent); professionalism (94 percent); written communication (93 percent); and critical thinking (92 percent). This survey also reports that although most employers characterize the overall preparation of four-year college graduates as either "adequate" or "excellent" (65 percent and 24 percent, respectively), they rank an alarming number of four-year college graduates as "deficient" in "writing in English" and "written communication" (26 percent and 28 percent, respectively) and in "professionalism/work ethic" (19 percent). The shift in expecting a rich set of work skills extends beyond jobs filled by four-year college and university graduates to high school graduates pursuing vocational-focused postsecondary education. It is estimated that more than 40 percent of factory jobs in the United States will require training in postsecondary education by 2012.[71] Similarly, high school graduates entering postsecondary workforce training programs (for jobs such as electricians and plumbers) need comparable levels of skills in reading and mathematics as their peers entering college-level academic programs.[72] Finally, corporations seek a similar set of basic and applied skills from two-year college graduates as they expect from four-year college and university graduates.[73] In short, employers expect many of the same skills from prospective employees, regardless of their level of educational attainment.

Internships

Given perceived deficits in the skills of college graduates, business leaders consider internships an important mechanism in preparing college graduates for the workforce. In fact, internships represent an increasingly common form of workforce[74] development in the United States. According to the National Association of Colleges and Employers, 62 percent of college and university graduates employed after graduation have participated in some form of an internship.[75]

In general, internships in the United States offer benefits to both college students and host organizations. By exposing college students to real-world problems in a work setting related to their career interests, internships enhance students' analytical and technical skills and emphasize the importance of "soft" skills such as creativity and adaptability.[76] In general, internships are positive developmental experiences for college students, particularly helping students to evaluate their career interests and to acquire job-relevant skills.[77] In terms of post-internship effects on college students, research has identified positive outcomes

[70] The Conference Board, Inc., Partnership for 21st Century Skills, Corporate Voices for Working Families, and Society for Human Resource Management, *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce* (New York: The Conference Board, 2006).

[71] The National Association of Manufacturers. (2005). *The looming workforce crisis: Preparing American workers for 21st century competition (Labor Day Report 2005)*. Washington, DC: National Association of Manufacturers.

[72] ACT, Inc. *Ready for college and ready for work: Same or different?* (Iowa City, IA: ACT, 2006).

[73] The Conference Board, Inc., The Partnership for 21st Century Skills, Corporate Voices for Working Families, & The Society for Human Resource Management. *Are they really ready to work? Employers' perspectives on the basic knowledge and applied skills of new entrants to the 21st century U.S. workforce.* (New York: The Conference Board, 2006).

[74] Although the terms internship and cooperative education (also known as co-ops) are often considered interchangeable—for example, this paper uses them synonymously—subtle differences exist between the two field experiences. Students in a cooperative education program typically alternate between a period of full-time academic study and a period of full-time, paid cooperative employment with organizations that may be located some distance from their institution, and the students are generally concentrated in technical disciplines such as engineering and manufacturing. In contrast, internships generally refer to part-time (or summer-only) field experiences over a broader range of academic disciplines and organizational settings and do not necessarily include compensation (J. Gault, J. Redington, and T. Schlager, "Undergraduate Business Internships and Career Success: Are They Related?" *Journal of Marketing Education* 22, no. 1 [2000]: 45–53).

[75] A. Athavaley, "Students Craft Internships to Fit Interests," Associated Press Financial Wire, March 6, 2008.

[76] M. Coco, "Internships: A Try before You Buy Arrangement," *Advanced Journal of Management* 65, no. 2 (2000): 41–44

[77] G. Callanan and C. Benzing, "Assessing the Role of Internships in the Career-Oriented Employment of Graduating College Students," *Education + Training* 46, no. 2 (2004): 82–89.

such as greater job satisfaction, stability, and success in the early stages of a graduate's career.[78] For host organizations, internships offer employers an opportunity to recruit future employees from college students who have proven themselves as interns. Internships provide organizations an opportunity to evaluate the work capabilities of students before extending an offer of full-time employment.

Despite their potential positive effect in preparing college students for the workforce, internships in the United States are far from perfect for students and employers. First, internships vary in the extent to which they actually develop workplace skills for students. One study asserts that employers need to collaborate with colleges and universities to develop more intense, meaningful internships that provide students with rich learning experiences that cultivate job skills, suggesting that internships too often just offer students a "glimpse" of the corporate environment.[79] Second, the nature of internships may exacerbate divisions among students of different socio-economic backgrounds; because many internships offer students little, if any, compensation and require students to enroll for academic credit, students from wealthier families are more likely to pursue internship opportunities than students from poorer families.[80] "The rich kids take the internships and improve their prospects. Their less-well-off peers, who simply can't afford to … graduate with significantly skimpier resumes."[81] In short, not all American college students may have an equal opportunity to pursue the benefits of internship experiences.

For internships to be successful mechanisms for workforce development, business leaders emphasize the need to offer students experiences that apply academic knowledge and skills to practical use. For example, a recent survey conducted on behalf of the Association of American Colleges and Universities found that 73 percent of employers believe that colleges and universities should place more emphasis on the ability to apply knowledge and skills to real-world settings through internships and other hands-on experiences.[82] The following quote from a business executive in the Washington, DC, area underscores the importance of internships in preparing students for the workforce, capturing the sentiment of many employer anecdotes profiled in the survey:

> I don't think colleges and universities within the United States really teach these individuals the real world, what it's like being out there in the real world, what the real job requirements are. … I think internships do an amazing job in terms of education, educating people versus your day-to-day everyday sitting in a class learning from a book perspective.

Interestingly, college students echo the sentiments offered by employers regarding the important role of internships in workforce development. In the aforementioned survey, 67 percent of recent graduates believed that colleges and universities should further emphasize the ability to apply knowledge in work settings like internships.[83] Of the recent graduates who completed an internship, 88 percent believed that their internship was important in preparing them with the knowledge and skills to achieve their professional and career goals.[84]

Stakeholders

The issue of higher education's role in workforce development is clearly important for a number of stakeholders, including elementary and secondary schools, institutions of higher education, federal and state governments, and companies. To address some of the issues mentioned above, all of these groups will need to collaboratively develop a solution. Many efforts have already begun, especially at the institutional level.

[78] G. Callanan and C. Benzing, "Assessing the Role of Internships in the Career-Oriented Employment of Graduating College Students," *Education + Training* 46, no. 2 (2004): 82–89.
[79] The Conference Board, Inc., Partnership for 21st Century Skills, Corporate Voices for Working Families, and Society for Human Resource Management, *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce* (New York: The Conference Board, 2006).
[80] B. Yagoda, "Will Work for Academic Credit," *Chronicle of Higher Education* 54, no. 28) March 21, 2008): 36.
[81] Ibid.
[82] Peter D. Hart Research Associates, Inc., *How Should Colleges Assess and Improve Student Learning? Employers' Views on the Accountability Challenge*, 2008, (www.aacu.org/advocacy/leap/documents/2008_business_leader_poll.pdf), retrieved March 3, 2008.
[83] Ibid.
[84] Ibid.

American schools (K–12) and institutions of higher education continue adjusting to the challenge of developing a more educated workforce. Since the 1980s, a core component of American education policy has focused on enhancing the ability of primary and secondary schools to prepare students for the competitive demands of a dynamic, and increasingly global, economy. In 1983, the National Commission on Excellence in Education's report, *A Nation at Risk,*[85] commanded attention for its assertion that the entire country was threatened by the inadequacies—"a rising tide of mediocrity"—of American primary and secondary schools. Throughout the 1980s and 1990s, numerous reports from foundations and public policy think tanks emphasized the increasing relationship between core academic skills (e.g., literacy, numeracy) and workforce requirements.[86] In response to these (and other) concerns, federal government involvement in primary and secondary education has evolved since the publication of *A Nation at Risk*, culminating with the passage of the No Child Left Behind Act in 2002, which strives to ensure that every primary and secondary school student acquires core academic knowledge and skills.

More recently, education, government, and business leaders in the United States have turned their attention toward determining whether colleges and universities can prepare workers capable of meeting increasingly complex and dynamic job requirements. Some argue that college graduates need more cross-disciplinary knowledge to succeed in a global economy—in science, global cultures, technology, and society; an expanded set of advanced skills, including in communication, teamwork, and analytic reasoning; and much more practice in applying what they learn to real-world problems.[87] Similarly, former Harvard University president, Derek Bok, asserts that college students are underperforming in many basic academic skills such as critical thinking, writing, and quantitative reasoning.[88]

Government leaders have also expressed concern over the ability of colleges and universities to prepare a globally competitive workforce. The United States Secretary of Education's *A Test of Leadership: Charting the Future of U.S. Higher Education* acknowledges that although the United States remains a leader in higher education, the country needs to develop new pedagogies, curricula, and technologies to improve learning, particularly in science and mathematics literacy, given these subjects' importance in the knowledge economy.[89] These perspectives from education and government—along with the corporate perspectives mentioned earlier in this section—offer an emerging consensus of what institutions of higher education need to teach their students for future workforce success.

In response to calls for higher education to strengthen connections between academic skills and workforce needs, colleges and universities have begun engaging external stakeholders such as business leaders for advice on enhancing academic curricula and programs. One emerging form of external stakeholder engagement is the creation of external advisory boards for specific academic colleges, schools, or departments. Unlike a board of trustees or regents, this type of advisory board does not possess any governing authority over the institution. Instead, an external advisory board aims to provide senior administrators the perspective of community or business leaders on strategic issues such as workforce development.[90] In addition, deans and department heads create advisory boards to solicit programmatic advice, cultivate political support, and stimulate fund raising.[91]

Advisory boards can assume a number of forms: a community advisory board consisting of influential political and community

[85] National Commission on Excellence in Education, *A Nation at Risk: The Imperative for Educational Reform* (Washington, DC: U.S. Government Printing Office, 1983).
[86] Educational Testing Service, *America's Perfect Storm: Three Forces Changing our Nation's Future* (Princeton, NJ: Educational Testing Service, 2007).
[87] Association of American Colleges and Universities, *College Learning for the New Global Century* (Washington, DC: Association of American Colleges and Universities, 2007).
[88] D. Bok, *Our Underachieving Colleges* (Princeton, NJ: Princeton University Press, 2006).
[89] United States Department of Education, *A Test of Leadership: Charting the Future of U.S. Higher Education* (Washington, DC: U.S. Department of Education, 2006).
[90] T. Hightower, "Advisory Groups: A New Model," *Community College Journal* 77, no. 2 (2006): 7.
[91] G. A. Olson, "The Importance of External Advisory Boards," *Chronicle of Higher Education* 54, no. 24 (February 22, 2008): 3.

leaders, an alumni board of distinguished graduates, and a professional board devoted to a specific career or discipline (e.g., engineering). An advisory board typically consists of 25 to 30 members who are invited to participate on the board based on their experience and expertise in a particular subject area.[92] In essence, external advisory boards offer senior administrators a sounding board from which to solicit ideas from key experts and stakeholders outside of the institution.

Conclusions and Recommendations

Higher education serves a critical role in preparing the future workforce of the United States. This case analysis highlights some recommendations that education, government, and business leaders should consider for enhancing the capacity of colleges and universities to meet the country's increasingly complex and dynamic workforce needs.

First, key stakeholders need to further discuss, and understand, each other's perception of key workforce requirements. As illustrated in this case study, education and business leaders are increasingly discussing the skills required of college graduates once they enter the workforce. These discussions, whether through national blue-ribbon commissions of experts or external advisory boards of specific academic programs, should continue to ensure that institutions of higher education and businesses quickly respond to changes in desired workforce competencies. In short, colleges and universities need to better understand the job requirements of employers, while employers need to better understand academic curricula and programs.

Stakeholders, particularly colleges and universities, should also create academic experiences that enhance the workforce skills of college students. Internships are an important way of exposing college students to complex work problems that require analytical, technical, and "soft" skills. In addition, student assignments and tests could more effectively measure students' ability to apply such skills to practical problems. For example, employers want colleges and universities to use assessments that demonstrate college graduates' ability to apply their knowledge to real-world challenges by integrating key competencies such as analytical reasoning, problem solving, and writing.[93] Instead of testing students' knowledge through multiple choice tests, colleges and universities might better prepare students for the workforce by relying on assessment methods such as comprehensive individual assignments (e.g., senior thesis, "capstone" projects) and essay tests.

Finally, all stakeholders should continue to appreciate and recognize how expanding access to higher education affects national economic competitiveness. The global economy demands that American workers possess higher levels of education, but demographic changes—particularly the looming retirement of the baby boomers generation and the relatively low graduation rates among college students from minority and low-income groups—may challenge the country's ability to meet these workforce needs. To retain a leading role in the global economy, the United States will need to prioritize college access and completion as it did in the decades following World War II, when opportunities for education and training beyond high school were extended to an unprecedented number of Americans.[94] In response, the federal and state governments need to pledge a sustained investment in higher education, which would help to maintain affordable rates of tuition and fees and adequate levels of financial aid for students. Within the context of workforce development, this paper highlights that "access to higher education" not only includes facilitating enrollment and broad opportunities to academic programs for students of different socio-economic backgrounds, but also offering important learning experiences such as internships to a diverse set of students.

[92] G. A. Olson, "The Importance of External Advisory Boards," *Chronicle of Higher Education* 54, no. 24 (February 22, 2008): 3; T. Hightower, Advisory Groups: A New Model," *Community College Journal* 77, no. 2 (2006): 7.

[93] Peter D. Hart Research Associates, Inc., *How Should Colleges Assess and Improve Student Learning? Employers' Views on the Accountability Challenge*, 2008, (www.aacu.org/advocacy/leap/documents/2008_business_leader_poll.pdf), retrieved March 3, 2008.

[94] National Center for Public Policy and Higher Education, *Measuring Up: The National Report Card on Higher Education* (San Jose: The National Center for Public Policy and Higher Education, 2006).

Conclusion

Given the economic, political, and social context of globalization, academic, business, and governmental leaders around the world have taken a keen interest in reexamining the role of higher education in workforce development over the past decade. Indeed, this paper has examined how four countries—Brazil, Mongolia, Ukraine, and the United States—each with different economic, political, and social circumstances, are confronting a universal challenge: learning how to adjust to and compete in an increasingly dynamic global economy, and understanding the role their institutions of higher education should assume in this transition.

Several themes emerge in reviewing each case study, although the interpretation of each theme may differ slightly across national contexts. First, the four case studies illustrate a general lack of agreement among key stakeholders regarding desired workforce competencies. Accounts from each country highlight a misalignment between what colleges and universities typically teach students and what employers expect graduates to know when they enter the workforce. A related issue associated with this mismatch is a tension in the labor market between balancing demand for specialized, technical training with needs for universal basic and applied academic skills. Second, this tension highlights an important open question facing many countries: what is the appropriate role of the government in directing, regulating, or influencing how institutions of higher education prepare students for the workforce? Answers to this question influence other aspects of higher education, beyond its role in workforce preparation. For example, trends toward increasing access to higher education to adequately prepare more citizens for the global economy seem to have resulted in decreases in educational quality for some countries, as indicated by the skill deficiencies of graduates.

Although the four profiled countries are quite different, three common recommendations emerge in reviewing the challenges facing institutions of higher education in each of the profiled countries. First, institutions of higher education, in collaboration with business and government, should examine whether academic programs and curricula develop the *academic, applied, and "soft" skills needed by employers* in their country. In doing so, institutions of higher education should engage a wide range of external stakeholders, particularly business leaders, to better understand desired workforce competencies and develop assessments and experiences that appropriately apply and integrate students' understanding of key knowledge within real-world contexts. As mentioned in one country profile, departmental and school external advisory boards provide one mechanism to accomplish this objective.

Similarly, institutions need to ensure that students demonstrate proficiency in the *basic academic skills* needed by employers: writing, reading, mathematics, and critical thinking. Many universities consider this form of education as beyond the scope of higher education, so many students graduate from universities without these skills. Developmental education courses in basic skills offered simultaneously with general education and major courses could help strengthen the skills of students in their academic courses, while also improving the employability of students after graduation.

Finally, institutions should establish *internship opportunities* for students to get first-hand experience in the workforce in their chosen field. In collaboration with employers, institutions need to create accountability mechanisms to manage both sides of the internship relationship. For students, there needs to be credible assurances that they actually participate in the internship. For employers, there needs to be accountability to ensure that internships engage students in important workforce functions and that there is no exploitation of students as cheap labor. Ideally students should be paid for the work they provide.

These recommendations can be considered and implemented across country contexts, including both developed and developing countries. Each country will have its own challenges of implementing these recommendations. And human and financial resources will likely need to be deployed to support these recommendations. Despite such costs, interested stakeholders cannot afford the alternative policy of maintaining the status quo. With an increasingly globalized marketplace, countries with university systems that fail to meet workforce needs will fall behind countries that pay significant attention to the evolving needs of the labor market.

The Institute for Higher Education Policy (IHEP) is an independent, nonprofit organization that is dedicated to access and success in postsecondary education around the world. Established in 1993, the Washington, D.C.-based organization uses unique research and innovative programs to inform key decision makers who shape public policy and support economic and social development. IHEP's Web site, www.ihep.org, features an expansive collection of higher education information available free of charge and provides access to some of the most respected professionals in the fields of public policy and research.

IHEP

INSTITUTE FOR HIGHER EDUCATION POLICY
1320 19th Street, NW, Suite 400
Washington, DC 20036

202 861 8223 **TELEPHONE**
202 861 9307 **FACSIMILE**
www.ihep.org **WEB**

The Ford Foundation is an independent, nonprofit grant-making organization. For more than half a century it has been a resource for innovative people and institutions worldwide, guided by its goals of strengthening democratic values, reducing poverty and injustice, promoting international cooperation and advancing human achievement. With headquarters in New York, the foundation has offices in Africa, the Middle East, Asia, Latin America, and Russia. For more information about the Ford Foundation, go to www.fordfound.org.

FORD FOUNDATION

FORD FOUNDATION
320 East 43rd Street
New York, NY 10017

212 573 5000 **TELEPHONE**
212 351 3677 **FACSIMILE**
www.fordfound.org **WEB**

INSTITUTE FOR HIGHER EDUCATION POLICY
1320 19th Street, NW, Suite 400
Washington, DC 20036

202 861 8223 **TELEPHONE**
202 861 9307 **FACSIMILE**
www.ihep.org **WEB**

FORD FOUNDATION

FORD FOUNDATION
320 East 43rd Street
New York, NY 10017

212 573 5000 **TELEPHONE**
212 351 3677 **FACSIMILE**
www.fordfound.org **WEB**