

the university, an issue seen as a question of life or death concerning China's traditional culture. They raised the matter to the level of principles and accused the reformists of breaking the law.

The reform plan received strong support from other university leaders, such as Zhu Qingshi—president of the University of Science and Technology of China—who saw Peking's policy as pioneering work and wanted to follow suit. The proposal was also well received by higher education experts—including Pan Maoyuan and Yang Dongping, respectively, from Xiamen University and Beijing University of Science and Technology. Ji Baocheng, president of Renmin University, stated that the reform was an important step forward as China's higher education reform reached a critical time. He insisted that reform of the personnel system was the primary reform needed. A similar viewpoint was expressed by Hou Zixin, president of Nankai University.

The most meaningful part of the debate was the notion of the Chinese idea of the university. The argument was that the fundamental mission of Chinese universities must be a judicious combination of learning from Western university traditions and the ideological, intellectual, cultural, and educational independence of the Chinese. The orientation of Chinese university reforms should be toward developing such a mission. Support for this notion appeared on both sides of the debate. The differences lay in practical priorities.

Shortly after the draft plan was launched, all the six major moves proposed in the draft plan were heavily criticized as well as strongly defended.

REALISTIC OBSERVATIONS

In marked contrast to the early wide publicity, little discussion has recently been raised about the reforms. Indeed, by the time when the communist China celebrated its 60th birthday, Peking University personnel reforms had almost fizzled out completely as Peking University President Xu Zhihong departed. Several years have passed since the policy was put into operation, and little difference has been made.

Similar to China's reforms in other major arenas since the 1980s, the approach employed by Peking University in its personnel reforms was top-down, expressing mainly official wishes. The reforms were pushed forward at the highest level of the university, designed and orchestrated by economists who had completed their doctorates in major English-speaking countries. Unlike China's previous reforms implemented through administrative power soon after decision making at the central with little room for discussion, Peking University's reforms sought soft-landing and agreement by trying to balance various groups' interests. In this sense, the reforms should be given some credit despite falling short of most of the intended goals.

The reforms extended well beyond the personnel sphere and far outside the university campus, taking in some fundamental issues underlying Chinese higher education development. The responses to the reform plan demonstrated the difficulty of China's university reforms as "the last fortress of a command-and-control society." A number of issues that emerged during the process of Peking University's personnel reforms illustrated China's long-standing struggle to strike a balance between dominant Western models and carrying forward its own rich cultural and educational traditions. The experience reiterated the complexity of the internationalization of Chinese universities. ■

The Polytechnic Universities in China's Transformation

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Polytechnic postsecondary institutions have a long history. France was the first nation to raise engineering to the status of a learned discipline, with the creation of the Ecole Polytechnique in 1794, shortly after the French Revolution. The status of this and other *grandes écoles* in the French higher education system was clearly higher than that of the traditional universities. This was in striking contrast to the position given to Germany's Technische Hochschule in the early 19th century, although some attained the same status as universities later in the century. The Soviet Union went somewhat further than either France or Germany in elevating the polytechnical university to a leading role in the socialist higher education system. It served well a system of macrosocial and macroeconomic planning that slotted all varieties of engineering expertise into clearly designated professional and geographical sectors.

POLYTECHNIC UNIVERSITIES IN CHINA

When China adopted Soviet patterns for higher education after the revolution of 1949, it was not surprising to see the percentage of engineering enrollments rise from 15 percent to 36.5 percent by 1960, and to see highest status and prestige accorded to polytechnic and specialist engineering universities. Institutions such as Tsinghua in Beijing and Zhejiang

University in Hangzhou were forced to get rid of their historic programs in the arts and basic sciences, while Harbin Institute of Technology in the Northeast and Jiao Tong University in Shanghai were suddenly given a new level of recognition within the socialist system. Most of China's Communist leaders have been graduates of these institutions, while prestigious comprehensive universities such as Peking, Fudan, and Nanjing Universities have tended to produce university professors, basic scientists, writers, and artists.

In the early years of Chinese communism, polytechnic universities were expected to focus on applied fields and maintain only enough basic science and mathematics to ensure good technological standards. By the mid-1950s, the problems with this approach were becoming evident, and the Chinese Academy of Sciences took the unprecedented step of creating a university of its own in 1958—the University of Science and Technology of China (USTC)—dedicated to the highest levels of pure scientific research and the integration of basic science with technology and teaching with research. Its subsequent influence triggered similar reform directions in other polytechnic universities.

The curricular broadening that has resulted, together with unprecedented opportunities for collaboration with high-tech industries around the nation, has kept these institutions in a leading position within the Chinese higher education system. Most recently the affluent coastal city of Shenzhen has decided to invest 10 billion yuan RMB to create a Southern University of Science and Technology to boost the local economy, rather than investing heavily in Shenzhen University, an existing comprehensive university.

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When the first nine universities were selected for the elite 98/5 project shortly after Peking University's centenary in 1998, six of them had polytechnic backgrounds (Tsinghua, Zhejiang, Shanghai Jiao Tong, Xi'an Jiao Tong, USTC, and Harbin Institute of Technology), while only three were traditional comprehensive universities (Peking, Fudan, and Nanjing). When other universities found their way into this elite project, the original nine members formed a coalition, nicknamed the "Chinese Ivy League," to preserve their special status. China's science and technology universities are thus positioned for leadership in the revolutionary changes coming about with China's move to mass higher education and its determined efforts to compete in the global knowledge economy.

ADVANTAGES OF CHINA'S POLYTECHNIC UNIVERSITIES

China's top polytechnic universities have unique advantages when it comes to fostering science and technology that will serve national competitiveness. In recent years the Chinese government has established a number of national laboratories in areas of key importance for China's ambitious economic goals. In most cases, these laboratories were located near top polytechnic universities, and the universities have been encouraged to take up leadership in these national efforts. For example, the president of the Huazhong University of Science and Technology (HUST) in Wuhan also serves as chairman of

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the National Opto-Electronics Laboratory, and China's Optics Valley is situated next to HUST's campus. The Yangling High Tech Agriculture Demonstration District, supported by 19 national ministries, is located next to the Northwest University of Agriculture and Forestry Science and Technology, and the State Synchronon Radiation Laboratory is on the campus of the USTC in Anhui. None of these universities are in major cities such as Beijing or Shanghai. Yet, the government has chosen to locate some of its key engines of research for economic development close by, providing remarkable research funding, facilities, and opportunities. Many of these universities have also become actively involved in consulting for some of China's major multinational companies, thus providing a significant flow of funds from the private sector. The problem with this trend is the temptation for faculty to focus on these relatively easier research dollars rather than the challenging demands of basic scientific research.

LIMITATIONS

The greatest disadvantage faced by polytechnic universities is their limited curricular coverage of areas outside the sciences and engineering. Some—such as Tsinghua, HUST, Zhejiang, and Shanghai Jiao Tong—have merged with nearby medical universities in recent years, creating excellent research opportunities in the biomedical sciences and in some cases in social aspects of health provision. However, few have been able to recover the heritage in philosophy, culture, and the arts, which universities such as Tsinghua and Zhejiang University were famous for before they were turned into polytechnics in 1951.

As China's economic transformation is increasingly accompanied by an emerging new geopolitical role as well as the

development of a broad program of cultural diplomacy, polytechnic universities are less able to contribute to debates over global governance or exercises in cross-cultural dialogue than comprehensive universities such as Peking, Fudan, and Nanjing. While some polytechnic universities have partnered with institutions abroad in the founding of Confucius Institutes, their orientation is more likely toward Chinese language for business purposes rather than philosophical exchange or intercultural understanding.

The most striking example of the spirit of China's contemporary polytechnic universities comes from the world-famous Academic Ranking of World Universities spawned by Shanghai Jiao Tong University. The indicators it uses for comparing universities globally are almost entirely in the arena of scientific research and publication, with little attention to teaching quality or educational reputation and ethos. This puts China's universities generally in lower positions than does the ranking system of the *Times Higher Education* Supplement, which has a broader array of indicators. It also reflects the limitations of a university such as Shanghai Jiao Tong, which has a brilliant history in the engineering sciences going back to 1897 and has recently taken over one of Shanghai's top medical universities but is relatively weak in the humanities, social sciences, and education. ■

Inclusiveness in Elite Universities: The Case of Oxford

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Surrounding elite universities—like Oxford, Cambridge, Harvard, Tokyo, and the *grandes écoles*—is the myth that access is hard to acquire. Not everyone who wishes to attend is selected to enroll. Harvard, ranked number one in various national and international league tables, admits fewer than 1 in 10 of its applicants for undergraduate study. The ancient English universities, Oxford and Cambridge, admit about 1 in 4 of their applicants.

The University of Oxford can be used as a case study to illustrate three basic challenges faced in admitting undergraduates at highly selective universities. These issues arise at a normative (philosophical), empirical (social research), and policy level: Who *should* gain admission to our most prestigious and selective universities? What is the profile of those who are actually admitted? And, lastly, how could we *change* enrollment pat-

terns if we wished to do so? While the specific answers to these questions may vary by country, the three issues themselves are relevant regardless of national context.

WHO SHOULD BE ADMITTED?

Universities are responsive to their social context and to ideas about who deserves to be successful in their society. The social context in Britain—in politics or the media—is dominated by discussions of social class. A strong sense exists that one's life chances should not be determined by the accident of having been born to parents in professional occupations rather than

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those employed in manual jobs. Nonetheless, and to the dismay of large sections of society and policymakers, what one's parents do for a living continues to influence educational achievement, and more affluent parents frequently opt out of the public (meaning, state) school system to give their children an advantage through private education. In Britain, fewer than 1 in 10 school learners are enrolled in private schooling, but about 1 in 2 of the top results in school leaving examinations and 1 in 2 of the most desirable university places, such as Oxford and Cambridge, are awarded to those who attended private schools.

While these specific figures might be unique to Britain, it will not be a surprise to see some link between social origin and educational attainment. The recent Organization for Economic Cooperation and Development's Program for International Student Assessment reveals that no industrialized country has managed to neutralize the influence of schooling and class origin. What makes the British case unusual is that the government has established a body dedicated to overseeing university enrollment figures by school type. This Office for Fair Access sets targets for individual universities, regarding the percentage of private and public school students they are expected to admit. The mission is to increase the representation of those educated in the public school system and to enhance fairness in education.

Universities are expected not to exacerbate—perhaps, instead, even to reprove—some of the limitations of primary and secondary education, to provide a completely level playing field for every child to develop his or her academic potential. The focus is on private and public schools and social class, as opposed to the well-publicized focus on race in US university