

On Training Excellent Students in China and the United States

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INTRODUCTION

In many countries, the training of researchers who will be internationally competitive has become a primary objective, leading to extensive discussion of the curricula, educational content, and methods that may ensure a high level of student achievement. In this global climate, only the most excellent students have the potential to engage successfully in international competition and become leading-edge researchers in the world-wide marketplace of research. Thus, any country seeking to be internationally competitive must consider ways to further raise the level of excellent students.

In this study, we investigate university programs, specifically honors programs, that take special measures for training the most excellent students. Honors programs can be found in the United States, Canada, the Netherlands, China, Singapore, Chile, and other countries; among these, the highest number of honors programs in 2005 were in the U.S. (Digby) and China. Consequently, the authors chose these two countries as the objects of this study, surveying and comparing the characteristics of honors programs as training courses for excellent students. In both countries, the focus of our study was limited to higher-level universities. In the case of China, only universities identified by Kitagaki & Fuang in 2008 as “Key Chinese Universities” were investigated. A small sample of universities in the U. S. was selected from the 2006 *America's Best Value Colleges* (Owens & Meltzer et al.). Our other major sources of information were university websites and the literature available through the National Collegiate Honors Council.

In both China and the U.S., honors programs have a common aim to gather and train particularly excellent students in the universities while the

specific content of each program and training course is distinct. The characteristics observed in the two countries as well as the comparison of such characteristics may help serve as models for Japan and other countries wishing to create honors programs.

CHINA

Starting in 1993, the “211 Project” in China targeted key universities for the twenty-first century with the aim of creating a global revolution in new technology. This project has now been succeeded by the “985 Project,” with its central concept being to create world-class universities. As of 2007, over a hundred universities, including Peking University and Tsinghua University, have been designated as key universities for developing honors programs.

Our research on these universities has shown that honors programs have been put into practice in 42 universities. It can be assumed that the existence of these and future honors programs will exert a great influence on the development of science and technology in China.

The authors provide below an overview of the characteristics of honors programs practiced in the key universities.

CHRONOLOGY

The chronological development of honors programs in China can be summarized by division into the periods indicated in Table 1, which shows a rapid increase in the number of honors programs after 1990. The first university to introduce an honors program was the University of Science & Technology of China, which in 1978 initiated a program called “Special Class for the Gifted Young” for students who had not yet completed a secondary education. This program was set up to train gifted students in the fields of science and technology. Making the most of its successful experience, this university also founded the “Experimental Class of Teaching Reform” in 1989 for the purpose of training students who had been evaluated as the most excellent at the entrance examination of the university.

In 1986, the “Special Class of Mathematics” was established at Nankai University, and in 1989 Nanjing University established an honors program by adding two intensified classes to the science curriculum and the humanities curriculum. Among the key universities, the University of Science & Technology of China, Nankai University, and Nanjing University were the first to adopt honors programs.

Other general honors programs have been put into practice since 1985. The authors counted the number of such honors programs in each specified time division from 1985 up to 2004. The results of four different data sets are shown in Figure 1 together with the approximate regression line.

DISCIPLINES

Table 2 shows the number of honors programs arranged by discipline, showing that “science” courses comprise over 66% while “humanities” courses comprise fewer than 25%. It should be noted that “humanities” courses in this instance include economics and business administration.

Because the Fundamental Science Class of Tsinghua University, the top-ranking university (Searchina Research Institute), was included in the science

Table 1: Chronological Development of Honors Programs in the Key Universities of China

Chronological Period	1975–	1980–	1985–	1990–	1995–	2000–	2005–	Total
Percent (Number of Programs)	1 (1)	0 (0)	3 (3)	5 (5)	13 (12)	41 (39)	38 (36)	100 (95)

Figure 1: Changes in the Number of University-Level Honors Programs in China (1985–2004)

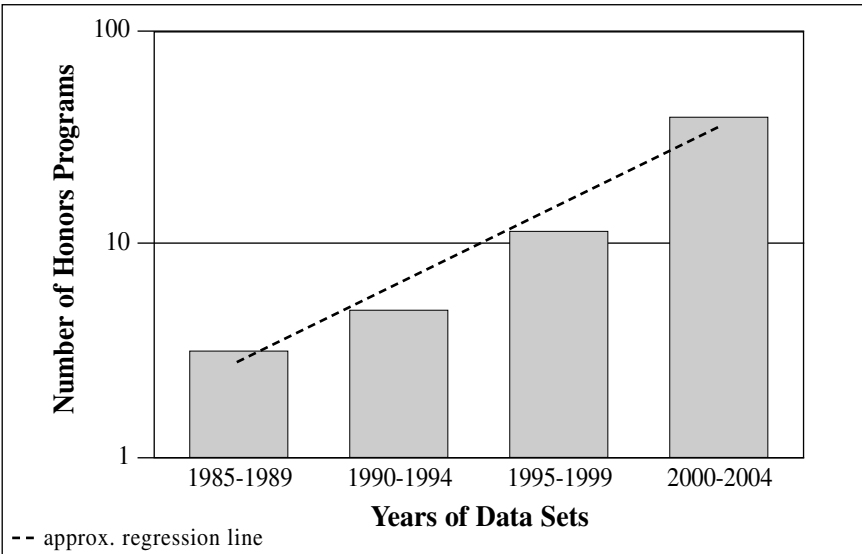


Table 2: Disciplinary Focus of Honors Programs

Course	Science	Humanities	Other	Total
Percent (Number of Programs)	69 (66)	25 (24)	5 (5)	100 (95)

courses, the authors will describe the outline of its honors program. The Center for Advanced Study at Tsinghua University was founded in 1997. This Center has as its objectives to strengthen fundamental research, foster creative human resources, and expand international academic exchange and cooperation. Toward these objectives, the Fundamental Science Class was established in 1998, and the sixty most excellent students were recruited in 1999. In this Class, great importance has been attached not only to fostering talents in mathematics and physics but also to emphasizing education in the liberal arts.

Tsinghua University also has an honors program called the “Sino-Foreign Culture Integrated Class,” which corresponds to the humanities course. This class was started in 1999 with the recruitment of nearly thirty students. The objective of this program was to remove a traditional barrier existing between courses of study and to promote the coordination and unification of multiple courses, thus establishing the basis for “Chinese and English Culture” or, in American terms, interdisciplinary study. Through reading the sutras as literature, the program has been putting an emphasis on strengthening the exchange of “Sino-Foreign Culture” as well as the global expansion of Chinese culture.

Training programs that are difficult to categorize as either humanities or science courses are classified as “Other.” For instance, the “21st-Century Student Union” of East China Normal University, which was founded in 1994, is a program aimed at training future leaders and is included in “Other.”

TRAINING

In general, five major points about honors education in China can be identified.

The first point relates to the goals. Some honors programs have included education in the liberal arts, but on the whole they have focused on science and technology. In an attempt to model themselves after world-class universities, about 70% of all honors programs are focused on science.

The second point relates to preferential treatment. Students who have been admitted to honors programs are given various privileges such as library access, scholarships, and residency in privileged dormitories.

The third point is the retention system. An excellent student who has been admitted to a special class may be eliminated and returned to a normal class if he/she cannot maintain excellence in examination results. East China University of Science and Technology, for instance, has a dropout system for the lowest-ranking students in which roughly 20% of the students—those whose performance is lowest on a school end-of-term examination—are weeded out.

The fourth point is the tutorial system. The number of students admitted to an honors program is naturally small. Specific teachers are assigned to these students as individual tutors. In many cases, teachers and students mutually choose each other.

The fifth point involves the method of selecting excellent students. As is the case with college entrance exams like the SAT or ACT, the selection method is based on test results and can be said to be objective. In this way, a set percentage of all students is selected.

UNITED STATES

The 2006 *America's Best Value Colleges* (Owens et al.) lists the names of respected and competitively priced universities in the U. S. We cross-checked this list with the information collected in the 2005 edition of *Peterson's Smart Choices: Honors Programs & Colleges* (Digby) and took a sampling of 71 institutions of higher education broken down into 60 public and 11 private universities. In view of the quantitative underrepresentation of private universities, we restricted our survey to state universities in this study.

CHRONOLOGY

Sixty state universities listed honors programs and/or colleges in *Peterson's Smart Choices*; one of them listed two programs and another listed three, so we found a total of 63 honors programs/colleges. Forty-two program descriptions among these 63 included the year in which they were established. Table 3 shows the chronology of the establishment of these programs by decade, starting in the 1950s. Some universities did not record the establishment year of their program, so the authors computed the year themselves. For example, Ohio State University indicated that their honors program was twenty years old, so we assumed it was founded in 1985, twenty years before the publication of this Peterson's guide.

In the changes seen from the 1950s to the 1990s, there is little evidence of a steady growth in the number of honors programs despite a general assumption that such growth has occurred. Instead, within this limited sample there seem to have been two periods of rapid growth in the 1960s and 1980s. The influence of the Sputnik launch in 1957 on the rapid growth in the 1960s would be an interesting topic for further study. [Editor's note: *The influence of Sputnik and the Cold War on the growth of honors has been a focus of several recent studies, most notably "The Wisdom of Our Elders: Honors Discussions in The Superior Student, 1958–65" by Larry Andrews in JNCHC 12.2 (fall/winter 2011): 17–46.*]

PROGRAM CHARACTERISTICS

The literature about honors programs and colleges in the United States contains a great variety of essays about leadership (Wilson), internships, social service (Parker), creation of community (Cobane, Thurman, and Lindsey), and interactions among class participants. The authors examined references to four key concepts—interaction among class participants, involvement in society, leadership, and internships—and tabulated the number and percentage of programs that referred to these concepts. The results are shown in Table 4.

One example—the concept of “interaction among the class participants”—will illustrate the methodology we used in devising this table. First, from the many descriptive sentences that attached importance to this concept, we took a sampling of the words that appeared frequently. As a result, four words—“seminar,” “colloquium,” “interaction,” and “communication”—together with their variations (such as plural forms and other parts of speech) were obtained and identified as keywords. Then we examined descriptions of all 63 honors programs and counted the number of keywords. Consequently, it can be said that, in 45 out of the 63 programs, “interaction among class participants” was an important concept. We used the same method of calculation for the concepts of “involvement in society,” “leadership,” and “internship.”

From Table 4, it can be seen that 75% of program descriptions focused on the concept of “interaction among the class participants”; almost half focused on “involvement in society”; and nearly 40% stressed “leadership.”

Table 3: Establishment of U.S. Honors Programs by Decade Since the 1950s

Chronological Period	1950–	1960–	1970–	1980–	1990–	2000–	Total
Percent (Number of Programs)	5 (2)	33 (14)	12 (5)	29 (12)	14 (6)	7 (3)	100 (42)

Table 4. Use Situations of the Words for Explanation of Honors College/Programs

Concept	interaction among class participants	involvement in society	leadership	internship
Key words	seminar/colloquium/ interact/communicate	social/service/ community	leader	internship
Percent (Number of Programs)	75 (45)	48 (29)	38 (23)	32 (19)

CHARACTERISTIC PRACTICES

For the 2005 edition of *Peterson's Smart Choices: Honors Programs & Colleges*, Digby sent a questionnaire to universities with honors programs in order to obtain details about each program, and she published the replies without modification. Using these data, we calculated our basic statistics.

Among the respondents, 80% reported on general honors programs that required more work than departmental honors. In terms of the relative size of honors programs, 52% were large (with the number of enrolled students over 500), 22% mid-sized (100–500), and the rest small (<100). These results indicate that most major public research universities in the United States have adopted general programs and that more than half of these enroll over 500 students. However, 62% of the universities have no specialized honors advising system; 37% do have special academic advising for honors; 22% have a special honors fellowship advising system; and 5% have special honors graduate advising. Ten percent have both a special academic advising system and a special fellowship advising in honors.

The literature indicates that the roles of honors directors or deans differ according to program size. In a small program (fewer than 100 enrolled students), the director seems to be responsible for all components and activities of the program. Large programs (over 500 students), employ several administrators who divide and/or share the responsibilities (Shuman, 2006; Long, 1995).

FINDINGS

Our comparison between honors programs in China and the United States yields the following results:

1. In China, there has been a steady increase in the number of honors programs since they were introduced in the 1970s. In the United States, where honors programs have existed for a longer period of time, growth may have been more sporadic.
2. Two of the earliest programs in the United States were established at Colorado State University in 1957 and Purdue University in 1958. The initial honors program at a major university in China was started at Nankai University in 1986, two decades later than in the U. S.
3. Descriptions of honors colleges and programs in the United States focus significant attention on communication, leadership, internships, social service, etc.; it seems that great importance has been attached to such activities as preparation for students' social and professional futures. By contrast, descriptions of honors programs in China focus on traditionally

distinct courses of study in the humanities and in science courses such as electricity, mechanics, physics, and economics.

4. Frequently, science-oriented honors programs in China emphasize the importance of studying a foreign language as part of the required curriculum. For instance, the importance of learning English is implemented in the following honors curricula: Special Class for Excellent Students of Nanjin University of Science and Technology; Longji Class of Lanzhou University; Experimental School of Harbin Institute of Technology; Fundamental Science Class of Central South University; and the Department of Excellent Students of Science and Technology of East China University of Science and Technology.
5. In both countries, it is usual that the results of nation-wide examinations are taken into consideration in the admission of students into an honors system. In China, the entrance examinations are nation-wide and unified; in the U. S., the SAT and ACT are standard requirements for honors admission.
6. In any university of either country, there is a tendency to provide various kinds of preferential treatment to students who are admitted to honors classes. Such students receive such privileges as access to libraries, scholarships, and admission to special dormitories.
7. At a university in either country, even after students are admitted to an honors class, they must maintain a certain minimum level of grades and/or examination results. If they fall short of such a level, they are obliged to return to a non-honors class. In the case of East China University of Science and Technology, students with a relatively low level of accomplishment are automatically eliminated at the end of each school term, and vacancies are filled by recruiting from the general student population. United States universities tend to have more diverse and complex policies on retention.
8. In U.S. universities, special honors academic advisers are often appointed. At some universities, honors fellowship advisers take on the role of honors advisers. In China as well, there is a tutorial system in which a teacher individually advises each honors student. However, honors fellowship advising was not found at universities in China that were surveyed for this study.

CONCLUSION

In the universities of Japan, honors programs are virtually nonexistent. One of the reasons lies in the fact that there is a cultural emphasis on equality and distrust of elitism. On the other hand, as the percentage of students

who go on to higher-level schools has grown to almost 50%, a wide variety of learning capabilities is now found in university students. Unless honors programs are put into practice, Japanese universities will find it difficult to cultivate excellent students who are able to stand up in international competition. Our study has resulted from awareness of this issue, and we believe that the situations of honors programs in China and the United States, including a comparison between the two, will be a good guide for Japan and for other countries facing similar situations.

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