

Research on the Development of Number of Postgraduate Students on Campus in China

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Abstract. Graduate education is an important part of higher education; it plays an important role in promoting national innovation capability and economic development. This paper uses the data from China Statistical Yearbook to analyze the development of number of postgraduate students on campus in China, analyze the growth of the total number of postgraduate students on campus, compare the number of doctoral and master students, and the number of students from universities and institutions, at last, analyze the distribution of postgraduate students in different disciplines. The result shows that, from 1952 to 2015, the number of postgraduate students on campus in China has increased from 2763 to 1911406. From 2005 to 2015, the number of doctoral students on campus increased by 70.76%, the number of master students on campus increased by 101.29%; the proportion of doctoral students on campus is less than 20%, and the proportion of master students on campus is over than 80%. In 2015, the proportion of academic degree students is 64.79%, and the proportion of professional degree students is 35.21%. The proportion of postgraduate students on campus from universities is over than 95%, and the proportion of postgraduate students on campus from institutions is less than 5%. In the 12 disciplines, education is growing fastest in the last 10 years, and engineering has the largest proportion in 2015.

Introduction

Graduate education is an important part of higher education; it plays an important role in promoting national innovation capability and economic development.^[1-8] With the development of higher education in China, the number of postgraduate students in China has been increasing.

There are three main indicators that can be used to describing the number of postgraduate students, including number of enrollment, number of postgraduate students on campus and number of graduate students. Among them, the number of postgraduate students on campus is the most representative indicator.^[9]

This paper uses the data from China Statistical Yearbook^[10] to analyze the development of number of postgraduate students on campus in China, analyze the growth of the total number of postgraduate students on campus, compare the number of doctoral and master students, and the number of students from universities and institutions, at last, analyze the distribution of postgraduate students on campus in different disciplines.

Total Number of Postgraduate Students on Campus

In 1952, there are only 2763 postgraduate students on campus in China. In 1962, it grew to 6130. In 1965, it dropped to 4546. From 1966 to 1977, there is no statistical data. In 1978, it was 10934, breaking through 10 thousand. In 1986, it was 110371, breaking through 100 thousand. In 2006, it was 1104653, for the first time exceeded one million. From 2000 to 2010, the number increased very fast (refer with: Fig. 1), the linear regression function is $y=112455x+237261$, $R^2=0.9859$.

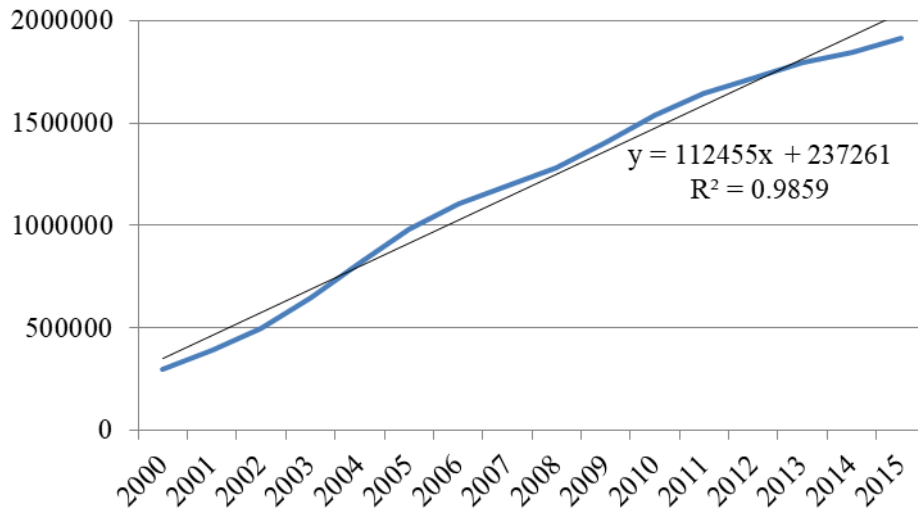


Figure 1. The number of postgraduate students on campus (2000-2015)

The Number of Doctoral and Master Students on Campus

The number and percentage of doctoral and master students on campus are listed in Table 1. From 2000 to 2015, the number of doctoral students on campus in China has increased from 191317 to 326687, increased by 70.76%; the number of master students on campus in China has increased from 787293 to 1584719, increased by 101.29%. The proportion of doctoral students on campus is less than 20%, and the proportion of master students on campus is over than 80% (refer with: Fig. 2).

Table 1 The number of doctoral and master students

Category	Degree	2005	2010	2015	Changed in 10 years
Number	Doctoral	191317	258950	326687	+70.76%
	Master	787293	1279466	1584719	+101.29%
	Total	978610	1538416	1911406	+95.32%
Percentage	Doctoral	19.55	16.83	17.09	-2.46%
	Master	80.45	83.17	82.91	+2.46%

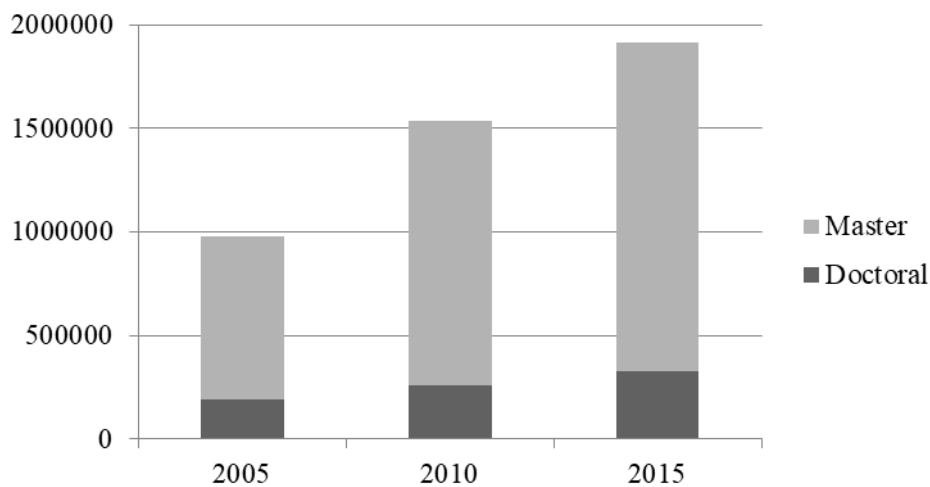


Figure 2. The total number of doctoral and master students

Two Types of Postgraduate Students on Campus

In China, postgraduate students are also separated by two types, academic degree and professional degree. In 2015, the contingency table of degree and type is listed in Table 2 and 3.

Table 2 Contingency table displaying degree and type for postgraduate students of China in 2015

	Doctoral Degree	Master Degree	Total
Academic Degree	319142	919264	1238406
Professional Degree	7545	665455	673000
Total	326687	1584719	1911406

Table 3 Contingency table displaying degree and type based on percentage of overall total (%)

	Doctoral Degree	Master Degree	Total
Academic Degree	16.70	48.09	64.79
Professional Degree	0.39	34.81	35.21
Total	17.09	82.91	100.00

The Number of Postgraduate Students on Campus from Universities and Institutions

In China, only the universities and institutions can train postgraduate students. The number and percentage of postgraduate students on campus from universities and institutions are listed in Table 4. From 2000 to 2015, the number of postgraduate students on campus from universities has increased from 932711 to 1885789, increased by 102.18%; the number of postgraduate students on campus from institutions has decreased from 45899 to 25617, decreased by 44.19%.

The proportion of postgraduate students on campus from universities is over than 95%, and the proportion of postgraduate students on campus from institutions is less than 5%, in 2015, is was only 1.34% (refer with: Fig. 3).

Table 4 The number of postgraduate students on campus from universities and institutions

Category	Come From	2005	2010	2015	Changed in 10 years
Number	Universities	932711	1482680	1885789	+102.18%
	Institutions	45899	55736	25617	-44.19%
	Total	978610	1538416	1911406	+95.32%
Percentage	Universities	95.31	96.38	98.66	+3.35%
	Institutions	4.69	3.62	1.34	-3.35%

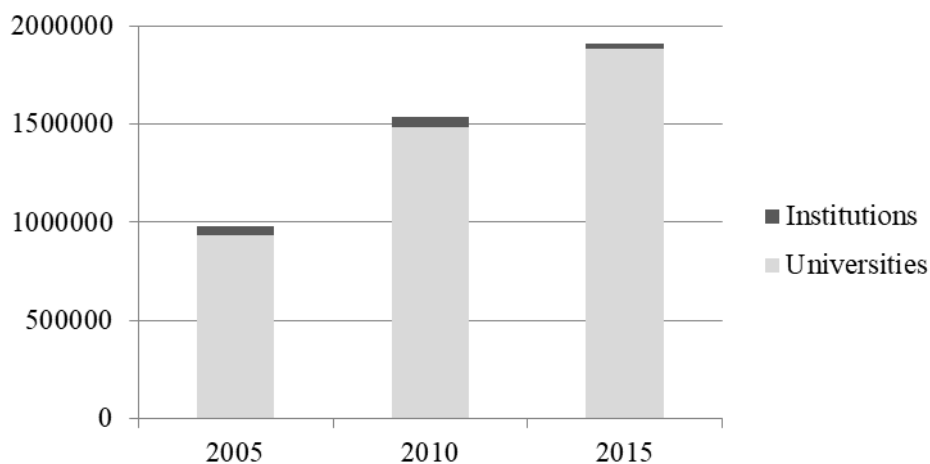


Figure 3. The number of postgraduate students on campus from universities and institutions

Discipline Distribution of Postgraduate Students on Campus

Based on the academic field, the discipline in China is separated into 12 area, including philosophy, economics, law, education, literature, history, science, engineering, agronomy, medicine, military and management. The discipline distribution of postgraduate students on campus in China is listed in Table 5 (in 2015 refer with: Fig. 4).

Table 5 The discipline distribution of postgraduate students on campus in China

Discipline	2005	2015	Changed in 10 years
Philosophy	11632	14323	+23.13%
Economics	49752	81127	+63.06%
Law	65272	125335	+92.02%
Education	29855	92249	+208.99%
Literature	73000	152255	+108.57%
History	13790	18610	+34.95%
Science	120510	196859	+63.35%
Engineering	369738	689597	+86.51%
Agronomy	36061	68212	+89.16%
Medicine	100343	215232	+114.50%
Military	546	688	+26.01%
Management	108111	256919	+137.64%
Total	978610	1911406	+95.32%

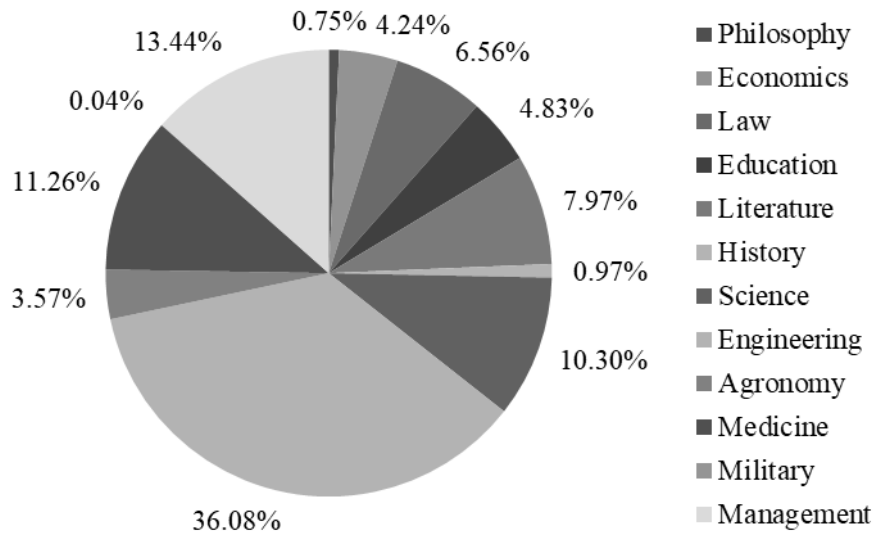


Figure 4. The discipline distribution of postgraduate students on campus in China in 2015

Summary

This paper uses the data from China Statistical Yearbook^[10] to analyze the development of number of postgraduate students on campus in China, analyze the growth of the total number of postgraduate students on campus, compare the number of doctoral and master students, and the number of students from universities and institutions, at last, analyze the distribution of postgraduate students on campus in different disciplines.

The result shows that, from 1952 to 2015, the number of postgraduate students on campus in China has increased from 2763 to 1911406. From 2005 to 2015, the number of doctoral students on campus increased by 70.76%, the number of master students on campus increased by 101.29%; the proportion of doctoral students on campus is less than 20%, and the proportion of master students on campus is over than 80%. In 2015, the proportion of academic degree students is 64.79%, and the proportion of

professional degree students is 35.21%. The proportion of postgraduate students on campus from universities is over than 95%, and the proportion of postgraduate students on campus from institutions is less than 5%. In the 12 disciplines, education is growing fastest in the last 10 years, and engineering has the largest proportion in 2015.

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References

- [1] H.S. Becker: *American Sociologist*, Vol.18 (1987) No.1, p.42-45.
- [2] N. Liu, L. Liu: *Higher Education in Europe*, Vol.30 (2005) No.1, p.217-227.
- [3] C. Arrigoni, R. Caruso, F. Campanella: *G Ital Med Lav Ergon*, Vol.37 (2015) No.1, p.39-45.
- [4] S. Collins, N. Arthur, C. Brown, B Kennedy: *Training & Education in Professional Psychology*, Vol.9 (2015) No.2, p. 153-160.
- [5] A. Leshner: *Science*, Vol.349 (2015) No.6246, p.349.
- [6] L. Hakkola, J. King: *Innovative Higher Education*, Vol.41(2016) No.2, p. 137-152.
- [7] K. Shih: *European Spine Journal*, Vol.9 (2016) No.3, p.213-217.
- [8] L. Neuhauser, C. Pohl: *Springer International Publishing*, Vol.116 (2015) No.7, p.2931–2938.
- [9] G. Sherwood, H Liu: *Nursing Outlook*, Vol.53 (2005) No.1, p.15-20.
- [10] Information on <http://www.stats.gov.cn/>.