

# On Employment Imbalance Issue based on Higher Education Major Structure and the Countermeasures —A Case Study of Wuhan Colleges and Universities

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**Abstract.** This paper mainly concerns the employment imbalance issue of the graduates in Wuhan colleges and universities from 2006 to 2011 based on the analysis of the higher education major structure and statistical analysis, and then comes up with the corresponding countermeasures to increase the employment rate from the perspective of optimizing and reshaping the major structure in Wuhan colleges and universities.

## Introduction

The optimization level of higher education structure is directly linked to the employment rate of college graduates, in other words, the latter is the touchstone of the former, so in the context of the universalization of higher education in China, researchers are paying increasing attention to the correlation between the higher education structure settings and employment rate of college students. Wuhan has a considerable number of universities and colleges, and the higher education structure has been somewhat improved in terms of disciplines, hierarchical structure and overall arrangement since the substantial resource restructuring in 2000, but it is still accompanied by unreasonable major structure and inappropriate hierarchical structure. In this paper, it deals with a case study of Wuhan colleges and universities, analyzes the current situation and problems of the employment rate of different majors and then discusses the strategies to boost the employment rate of college graduates from the standpoint of the higher education structure.

## Composition of Higher Education Structure

Regarding the composition of higher education structure, almost all scholars at home and abroad share the same viewpoint that it consists of macrostructure and microstructure. The macrostructure comprises hierarchical structure, formal structure, distribution structure and management system structure while the microstructure is mainly about the internal composition structure, major structure of disciplines, curriculum structure and teaching material structure of colleges. This paper focuses on the analysis of the major structure of higher education microstructure[1].

## The Employment Current Situation and Problem based on Higher Education Major Structure in Wuhan

### A. The overall employment situation of the graduates in Wuhan colleges and universities

Since the implementation of the recruitment expansion policy in 1998, the higher education in Wuhan has gradually experienced a fundamental shift from elite cultivation to mass education, but it also comes with increasing employment pressure for many college graduates. Table 1 shows that the employment rates in 2006 and 2007 are almost the same while that in 2008 is far from optimistic. According to the employment rate defined by the labor economics, the quantity of employment excludes the number of those attending postgraduate schools and studying abroad. The non-unemployment rate in 2010 is 89.1% and the percentage of students attending post-graduate school in 2010 is 17.99%, so it suggests that the employment rate of the graduates in Wuhan colleges and universities in 2010 is only around 71%. The employment rate of the graduates in Wuhan colleges and universities in 2011 can also be derived according to above manner, nearly equaling the employment rate in 2010.

Table1. Employment Rate of Graduates in Wuhan Colleges and Universities in the Past 6 Years

Year	2006	2007	2008	2009	2010	2011
Employment rate (Non-unemployment rate)	72.64%	74.12%	67.53%	86.6%	89.1%	89.61%

Note: The “non-unemployment rate” index has been adopted in the Employment Report for the Graduates in Wuhan Colleges and Universities in 2011 released by Wuhan Human Resources and Social Security Bureau for the first time, to evaluate the employment situation of college students; “non-unemployment rate” covers “employment rate + the percentage of students attending post-graduate schools + the percentage of students studying abroad”, i.e. the “non-unemployment rate” is used to assess the employment situation of the graduates from 2010.[2]

**B. Employment imbalance problem based on the higher education major structure**

Table2, 3 and 4, present the employment rates of various majors for college graduates in 2007, 2008, 2010 and 2011. The employment imbalance problems can be summarized as follows according to these tables along with practical realities.

1) The employment imbalance between polytechnic majors and liberal arts majors

These tables suggest that the employment rate of polytechnic majors is generally higher than that of liberal arts majors in recent years, which is particularly obvious in junior college level.

2) The employment imbalance between undergraduate majors and junior college majors

For instance, the employment rate of top 10 majors for the undergraduate in 2010 ranges from 74.6% to 62.5% while that for the junior college in 2010 is 98.5% to 89.1%; the employment rate of top 10 majors for the undergraduate in 2011 ranges from 90.94% to 74.77% while that for the junior college in 2011 is 98.95% to 91.74%. Obviously, the employment rate of junior college majors is higher than that of undergraduate majors.

3) The employment imbalance among undergraduate majors

Aside from the top 10 majors, the employment rates of other undergraduate majors in 2007, 2008, 2010 and 2011 are lower than 59.79%, 65.7%, 62.5% and 74.77% respectively, which are unoptimistically lower than that of the top 10 majors.

4) The imbalance between social demand and employment for polytechnic majors in universities

With the rapid development of modern industry-based economy, there is a great need for application-oriented talents in the production process. To achieve a shift from “Made in China” to “Created in China”, China is badly in need of many high-caliber and technical talents. As shown in the tables, the employment rates of the polytechnic majors in universities in 2007, 2008, 2010 and 2011 are lower than 72.81%, 76.9%, 74.6% and 82.45% respectively, leading to the imbalance between the supply of graduates and social demand, i.e. college graduates have difficulty finding jobs while companies suffer labor shortage.

Table 2. Top 10 Majors for the Employment Rate of the Graduates in 2007 and 2008 in Wuhan Colleges and Universities

Undergraduate majors in 2007	Employment rate	Undergraduate majors in 2008	Employment rate
Foreign languages	77.44%	Foreign languages	81.3%
Management	76.42%	Management	80.9%
News	73.12%	News	78.6%
Mechanics	72.81%	Economics	77%
Economics	71.36%	Mechanics	76.9%
Chinese	66.72%	Chinese	76.7%

Electrics and Information Engineering	65.91%	Electrics and Information Engineering	72.5%
Materials	61.42%	Law	71.4%
Law	60.50%	Materials	66.5%
Agriculture	59.79%	Medicine	65.7%

a. Source of Data: Employment Rate Index Report of the Graduates in Wuhan Colleges and Universities in 2008

Table 3. Top 10 Majors for the Employment Rate of the Graduates in 2010 in Wuhan Colleges and Universities

Undergraduate majors	Employment rate	Junior college majors	Employment rate
Transportation and communications	74.6%	Energy & power	98.5%
Materials	71.4%	Public utilities	97.5%
Civil engineering	65.6%	Transportation and communications	96.9%
Oceanering	65%	Environmental protection	96.3%
Energy & power	63.8%	Civil engineering	95.7%
Mechanics	63.4%	Surveying and mapping	95.5%
Public security	63.2%	Hydraulic engineering	94.7%
Electronic information	63.2%	Mechanics	91.7%
Geology and mineral exploration	63%	Materials	89.5%
Instruments	62.5%	Electronic information	89.1%

b. Source of Data: Employment Report of the Graduates in Wuhan Colleges and Universities in 2011

Table 4. Top 10 Majors for the Employment Rate of the Graduates in 2011 in Wuhan Colleges and Universities

Undergraduate majors	Employment rate	Junior college majors	Employment rate
Business administration	90.94%	Energy & power	98.95%
Management science and engineering	87.26%	Public utilities	97.44%
Public security	85.76%	Transportation & communications	96.80%
Oceanering	82.45%	Surveying and mapping	95.88%
Energy & power	80.04%	Hydraulic engineering	95.72%
Mechanics	77.54%	Mechanics	95.52%
Electronic information	75.93%	Resource development and surveying	94.16%
Geology and mineral exploration	75.70%	Environment Protection, meteorology and safety	93.65%
Transportation & communications	74.88%	Public security	93.19%
Instruments	74.77%	Journalism and communication	91.74%

c. Source of Data: Employment Report of the Graduates in Wuhan Colleges and Universities in 2012

## **Studies on the strategies to boost the employment rate of college graduates in Wuhan**

In view of the employment imbalance based on the higher education major structure, the author has proposed the following strategies to boost the employment rate of college graduates in Wuhan.

A. The majors should be tailored to the needs of the job market.

Following the employment report of college graduates in May 2010, the Labor and Social Security Information Center of Hubei Province conducted a follow-up survey on the employment situation of the fresh college graduates from June 19, 2010 to June 30, 2010. The sample survey (about 1%) involved about 250,000 graduates from 5 key universities, 5 average universities and 5 vocational colleges with 2,800 questionnaires. The report shows that the employment of the college graduates is “Two High One Low”, that is, the employment rates of key universities(88.2%) and vocational institutes (86.2%) are considerably high, while the employment situation of the average universities is lackluster, lower than the former two by a margin of 30%. It indicates that the prestigious reputation of key universities and appropriate major structure of the vocational institutes tailored to the need of the job market make the college graduates from these two preferred by the employers.

The report also provides some useful insights into the average universities if which are not so famous as the key universities, should be tailored to the need of the job market, just as the vocational institutes do to serve the need of the market. In a word, the major design should follow the trends of the economic development, featuring an emphasis on application and hands-on skills. The education goal should be job market-oriented and focus on knowledge and problem-solving skills[3].

B. Optimize the major structure and establish or remove majors scientifically

Employment rate is not only a very important index of the quality of the talent nurturing of a college or a major, but also is a touchstone of the compatibility of a college or a major with the need of the job market. Although the higher education department of Wuhan is constantly making some positive adjustments, further concrete strategies (like downsizing or suspending some majors) have not been introduced to tackle the problems of low employment rate of some majors. To solve the problem of employment imbalance, the macro control of the government and the proactive adjustment of colleges and universities should be integrated. On one hand, the majors with a low employment rate should be downsized, suspended or even removed. On the other hand, the government and colleges should take into account of the dominant sector and sunrise industries of the local economy and develop related promising majors accordingly.

C. Reposition application-oriented undergraduate education; promote the reform of teaching model

In view of the employment imbalance of undergraduate and junior college majors, the imbalance among undergraduate majors, the higher education institutes should take the following steps according to the current economic development situation: first of all, the college should clearly reposition application-oriented undergraduate education and set the goal of fostering application-oriented talents; secondly, brainstorming discussions and seminars should be organized to promote the transformation of the education and get rid of the outdated traditional education concepts. Thirdly, the colleges and universities should conduct some systematic theoretical study, such as to realize a shift to application-oriented undergraduate education through initiating national, provincial and school-level educational reform projects. Such theoretical studies can deepen the understanding of the pedagogical laws of application-oriented undergraduate education and provide a theoretical basis for the strategic transformation. Finally, the colleges and universities should vigorously undertake an all-round teaching model reform. In terms of the teaching forms, the schools can launch extensive cooperation with the enterprises, such as establishing internship and training bases, R&D projects, seminars, etc. As for the teaching contents, the relevant teaching materials and contents should be updated timely to attain the goal of “the teaching should cater to social needs”. With regard to the teaching methods, the typical case study can be highlighted in the form of discussion, inspiration and Q&A to encourage students’ independent and active learning initiatives. With respect to the evaluation methods, the schools should focus more on process-based evaluation

than result-based evaluation, more on open evaluation than closed evaluation, more on enterprise-school evaluation than school-dominated evaluation; the students should be placed in the central position.

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