**Higher Education and Knowledge Economy: Challenges for Taiwan**

***Hsiou-Hsia Tai***
**Professor, Institute of Education**
**National ChaioTung University**

## Content

- **Introduction**
- **The Characteristics of Knowledge Economy**
- **Challenges Posed for Taiwan**
- **Higher Education Policy Initiatives Responding to the Challenges**
- **Issues and Problems**
- **Concluding remarks**

## Introduction (1/2)

- Cummings (2006: 34-35): two models of knowledge production.
- The linear model pioneered by the United States of America, emphasizes the importance of basic research and strong government support.
- The interactive model, noticeable first in Japan and then in Korea, Singapore and Taiwan, stresses the role of applied and developmental research, and relies on both private and public sector for research funding.
- Both models rely on the university to play a critical role in the development of human resources .

## Introduction (2/2)

- In response to the challenges posed by the knowledge economy, Taiwanese higher education underwent a series of reforms to enhance the university's ability in performing cutting-edge research and fostering capable human resources.
- However, the effects are mixed and controversial at their best.

## The Characteristics of Knowledge Economy

- The emergence of innovation as the corner stone of national competitiveness
- The emergence of post-Fordism as the major production mode
- The emergence of employability as quality indicator of university graduates

## Challenges Posed for Taiwan

### Knowledge creation and R&D

- Inadequate investment in R&D: Though Taiwan's R&D expenditure as a percentage of GDP has displayed a steady upward trend, rising from 2.31 % in 2003 to 2.62 % in 2007, it is much less than Japan at 3.39 % and South Korea at 3.23 %.

### Human resources and education

- 3 concerns: 1.'narrow gate' policy restricting access to higher education; 2. the quality of university teaching; 3.the discontent of the industry about the competences and skills of the graduates.

## Higher Education Policy Initiatives Responding to the Challenges (1/3)

- **Expansion of the university sector**

The expansion of the university sector is achieved by two ways: the first is by establishing new universities and colleges, the second by upgrading the junior colleges to the status of 4-year colleges and then to university.

| Year | Junior College | | University/ College | |
|---|---|---|---|---|
| | Number of institutions | Number of students | Number of institutions | Number of students |
| 1960 | 12 | 7,888 | 15 | 27,172 |
| 1965 | 35 | 29,534 | 21 | 55,812 |
| 1970 | 70 | 108,328 | 22 | 95,145 |
| 1975 | 76 | 150,226 | 25 | 139,209 |
| 1980 | 77 | 183,134 | 27 | 159,394 |
| 1985 | 77 | 236,824 | 28 | 191,752 |
| 1990 | 75 | 315,169 | 46 | 261,454 |
| 1995 | 74 | 394,751 | 60 | 356,596 |
| 2000 | 23 | 444,182 | 127 | 647,920 |
| 2005 | 17 | 180,886 | 145 | 1,115,672 |
| 2008 | 15 | 117,653 | 147 | 1,219,802 |

## Higher Education Policy Initiatives (2/3)

**Unfortunately, the expansion is not accompanied by commensurate increase in higher education funding. The annual expenditure on university/college per student, after reached its peak in 1996, declined dramatically**.

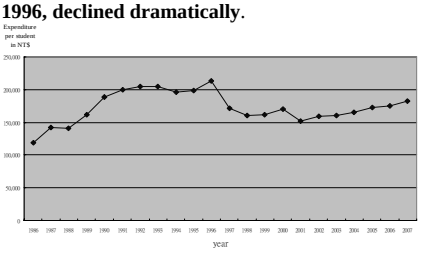



Figure 1: Annual expenditure on universities/colleges per student (1996-2007)

## Higher Education Policy Initiatives (3/3)

**Enhancement of university research and teaching**

- the Project for Developing First-class Universities
- The Teaching Excellence Project

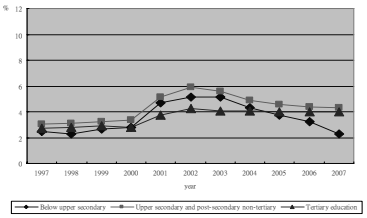
**Stronger link between industry and the university**

- financial incentives to patent knowledge with commercial potential
- measures to facilitate the exchange of manpower between university and industry

## Issues and Problems

- **The issue of "higher the education, higher the unemployment rate"**

The unemployment rate of college graduates is on the steady rise. In 2006 and 2007, it is even higher than that of people with primary and secondary education.




## The issue of "higher the education, higher the unemployment rate"

**It is a strong contrast to most OECD countries, where the unemployment rate for those with tertiary education was markedly lower than those with a lower level of education**

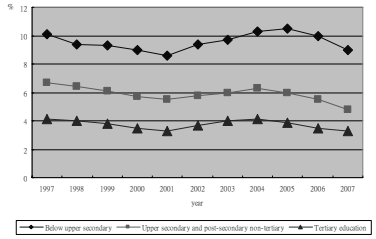



Figure 3: OECD country average unemployment rates by educational attainment (1997-2007)

## The issue of "higher the education, higher the unemployment"

- The relatively high unemployment rate of college graduates has caused widespread concern. Doubts about the private and public benefits of higher education have been raised. The rapid expansion of the university sector by upgrading the junior colleges is commonly considered the major contributory factor.

## The issue of "higher the education, higher the unemployment"

- "**Nowadays, so many graduates from the newly-upgraded universities say they expect to be recruited as engineers, but from the company's point of view, despite the change of status, the university they attended is not much different from what it used to be, i.e. a junior college. We don't really have confidence on their knowledge and skills necessary for the position as engineers. To compromise, we create a new job title—"assistant engineer" to accommodate their job expectations on the one hand, and to fill our manpower need on the other. But frequently these people feel frustrated and the labor turnover rate is therefore high."**

## Issues and Problems

- **College students lack confidence on higher education and show insufficient job preparedness**

In a survey a total of 64 % of the respondents think that the present university education is not adequate in preparing them for labor market.

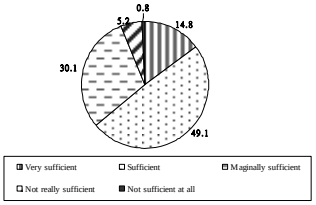



Figure 4: The perception of respondents on their preparedness for job market
Source: *CommonWealth* Magazine (2008)

## Lack of confidence and job preparedness

One of the important reasons for students' lack of confidence is the gap between academic education and the demands of workplace. Some 87 percent of the surveyed students think that there is a considerable gap between what they learn at school and what is needed in the workplace

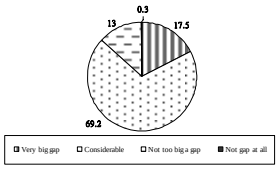



Figure 5: The gap between the needs of job market and university education according to the respondents
Source: *CommonWealth* Magazine (2008)

## Lack of confidence and job preparedness

In *The 2009 Report on Employability Survey of Tertiary Students and Graduates*, 45.3 % of the surveyed students say they would choose another major, if given the opportunity. The main reasons are: no interest (45.3%), poor job opportunity (28.0%), and course content not as expected (21.6%).

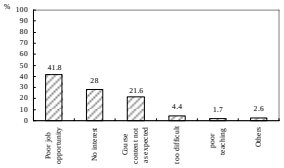



Figure 6: The reasons to change their major according to the surveyed students
Source: National Youth Commission (2009)

## Lack of confidence and job preparedness

College graduates surveyed are even more negative on their major, 54.4 per cent say they will choose other major if given the opportunity, and the main reason are: poor job opportunity (50.0%), no interest (32.2%) and course content not as expected (14.5%).Besides, 37.8 per cent of the surveyed graduates say their major at college is not relevant to their current work.

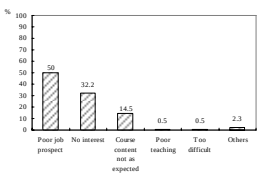



Figure 7: The reasons to change their major according to the surveyed graduates
Source: National Youth Commission (2009)

## Issues and Problems

- **The mismatch of employability**
- In the *CommonWealth* survey, when asked what abilities should be strengthened at college education to make graduates more competitive in the labor market, students cite the following top three factors: professional knowledge (63%), language ability (46%), and dedication and responsibility (43%). Surprisingly few point to teamwork skills or moral character, mentioned by 15 percent and 9 percent, respectively. This sharply contrasts with what employers want to see in newly recruited staff (*CommonWealth*, 2008).

## The mismatch of employability

- The discrepancy between the employers' and recent graduates' perception of employability could be found in the National Youth Commission survey.
- In the survey, the graduates' self-assessment of various employability skills which they think they have fostered is very different from employers' assessment of their newly recruited staff.
- In the top ten employability factors listed by the employers, other than the last one—computer skills, the graduates tend to overestimate what they have fostered. For example, 95.9 per cent of the graduates think they have satisfactory work attitude, while only54.2 percent of the employers agree. In "stability and ability to deal with pressure, the difference is even as great as 66.8 points

## The mismatch of employability

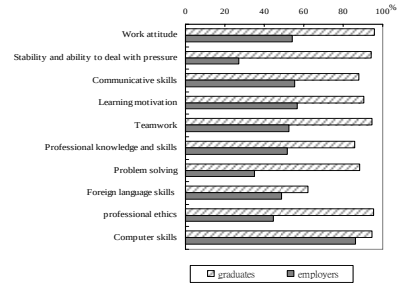



Figure 8: Graduates' self-assessment and employers' assessment of employability skills possessed by graduates
Source: National Youth Commission (2009)

## The mismatch of employability

- The survey evidence shows that both university students and graduates have a very different perception of employability from what is really demanded in the working life. This mismatch reinforces the employer's reliance on the hierarchical positioning of higher education institutions as the most efficient screening device in recruitment.

## The mismatch of employability

"We surely know that a good academic credential is not enough to make an employee competitive, and there is a whole range of factors essential to make a graduate employable. But since academia is not really concerned about how to prepare their graduates for the industry, we could not but rely on the institutional reputation and positioning as an indicator of employability. Graduates from the leading universities have special positional advantages and usually stand out from the crowd of applicants especially during the initial stages of recruitment. Their degree is an indication of academic excellence and signals their potential to meet the demands of the company."

## Concluding remarks

- Despite lacking sufficient evidence, it is widely believed that the employability issue has exacerbated the polarization of higher education institutions and their graduates. The graduates form the high status universities generally fare well in the job market, while graduates from the lower status institutions often experience disappointing competition for jobs, and end up in not decently paid jobs or unemployment.
- Inclusive exclusion?