

HIGHER EDUCATION

Taiwan enjoys excellent global competitiveness in spite of limited land and natural resources. According to the World Competitiveness Yearbook 2011 published by the International Institute for Management Development (IMD) in Switzerland, Taiwan ranked sixth overall in global competitiveness among 59 countries, and was notably outstanding in “Economic Performance” and “Business Efficiency.”

One reason for Taiwan’s economic prowess is its quality human resources, an accomplishment closely tied to the issue of higher education. In the competitiveness evaluation report of the World Economic Forum (WEF) published in 2011, Taiwan ranked tenth in “Higher Education and Training.” Taiwan’s human resources provide highly-qualified workers in sufficient supply to the labor market and brings positive benefits for industry innovation.



◆ Universities and Colleges

Higher education institutions in Taiwan include 2-year junior colleges, 5-year junior colleges, and universities. Like most countries, the study period is 4 years for an undergraduate university degree, 1 to 4 years for a masters degree, and 2 to 7 years for a doctoral degree.

The popularization of education has led to a rapid increase in universities, colleges and student enrollment numbers, although the figure has levelled off in recent decades. In the 2011 academic year there were 163 universities and colleges and 1,352,084 students.

Reforms in teacher training has played an important part in the expansion of higher education. Significant improvements in teacher quality can be attributed to policy adaptations and the newly implemented evaluation system. Currently, Ph.D. degree holders account for over 80% of faculty in universities, the figure having increased by 15% in the past 10 years. Professors account for one-third of all teaching personnel.

To maintain competitiveness, Taiwan's government has invested \$300 million in higher education annually to encourage universities to enhance their standards for research and teaching, and the results have been remarkable.

Although Taiwan's higher education system has gained recognition for its achievements in many areas, tuition still remains very reasonable. Tuition is \$1,924 dollars per year at public universities, and \$3,552 dollars at private universities. College tuition stands at only 10~20% of the national per

capita GDP, considerably lower than that of many other countries, which in some cases is over 30%.

The Ministry of Education and several universities have jointly established the Higher Education Evaluation and Accreditation Council of Taiwan to conduct evaluations of universities. This evaluation consists of Institutional Evaluation and Program Evaluation. The former is held every 5 years to examine whether schools have achieved their strategic goals, while the latter examines the quality of faculty, teaching, research, and service. The Ministry also encourages universities to obtain international certification. The Higher Education Evaluation and Accreditation Council of Taiwan, for example, is a member of several international organizations, such as the Asia-Pacific Quality Network (APQN) and the International Network for Quality Assurance Agencies in Higher Education (INQAAHE).

Another of Taiwan's significant achievements is in the area of "Innovation". In a report from the World Economic Forum (WEF), Taiwan ranked ninth among 133 countries in innovation. To encourage students to unleash their creativity, the Ministry screens and selects outstanding students to study abroad under sponsorship by the government. In recent years, students from Taiwan have been making their mark in international design competitions such as Germany's iF Awards and Red Dot Award every year.



More Signs of Progress in Education

Everywhere around the world competition is getting fiercer and more talent is migrating across borders. How can Taiwan's higher education industry face up to these challenges so as to promote commercial innovation while strengthening Taiwan's international competitiveness?

Knowledge and innovation is the only way to increase global competitiveness. Countries the world over spare no effort in investing in the cultivation of innovation and talent by improving their higher education systems. Thus since 2006, the Ministry of Education has invested NT\$50 billion to launch a plan to develop world-class universities and research centers. After 5 years, we are now reaping the rewards:

1. Taiwan is reaching out to the world

Many of Taiwan's universities are ranked in the World's Top 100 universities in global university rankings. Moreover, according to global university rankings by the UK's Times Higher Education Supplement and Quacquarelli Symonds (QS), National Taiwan University has been in the Top 100 every year since 2007 while other universities have broken into the lists as well.

2. The quality of students continues to improve

Top universities in Taiwan have instigated reforms in their general education systems and interdisciplinary programs. Currently, there are 55,475 students enrolled in interdisciplinary programs. The universities are also fulfilling

their social responsibilities, as seen in actions like support of disadvantaged students. There are currently a total of 11,065 disadvantaged students enrolled in colleges and universities, a figure growing at an average rate of 17% annually. In addition, the top universities have also responded to public outcry at poor higher education quality, promising to improve the learning environment and boost student motivation to enhance the quality of university students.

3. The University is becoming a place for innovation in business

Taiwan's innovative ability has been recognized in the global competitiveness report published by IMD. In recent years, the number of patents and new breeds developed by Taiwanese universities has grown by 78%, and income from intellectual property rights has increased by 139%. This momentum will in turn stimulate more innovations and increase contributions to society.

4. Campuses play host to the world

"Internationalization" is key to global visibility. Whether the universities in a country are attractive to foreigners is also a criterion in evaluating national power. In the past 5 years, more than 30,000 foreign scholars have visited Taiwan, and nearly 30,000 foreign students are studying in Taiwan's top universities. On average, almost 400 international conferences are held in top Taiwanese universities each year, thereby broadening the horizons of Taiwanese students.

◆ Vocational and Technological Colleges and Universities

The institutions in this category include junior colleges, technical colleges, and universities of technology, accounting for a total of 91 schools. Junior colleges are divided into 2-year programs and 5-year programs. Technical colleges and universities of technology can admit students for associate degrees, bachelor degrees, and masters degrees, while universities of technology can also accept Ph.D. students.

In accordance with government policy, the key points for development in these schools are:

1. Implement multiple-route admissions

Vocational and technological colleges and universities recruit students through separate examination and enrollment systems:

—(1) 5-year junior colleges recruit graduates of junior high schools. Entrance methods include examination-free entrance, application and drawing lots, and placement.



2. Enhance teaching quality: promotion of government programs, enhancement of teaching quality, and adoption of a practical approach towards teaching

—(1) Implement the Program for Promoting Teaching Excellence for vocational and technological colleges and universities, the goals of which are: 1. Enhance professional teaching skills; 2. Strengthen curriculum design; 3. Strengthen student motivation; 4. Set up teaching evaluation systems; 5. Implement and/or improve all areas related to teaching quality.

—(2) Establish areas of specialization for each school

Since 2001, subsidies have been provided to establish areas of specialization for each school. Many have now established specialties and expertise in various professional realms.

—(3) Strengthen teaching and learning abilities
 1. Offer subsidies for instructors to gain work experience in public and private firms.
 2. Recruit from industry to enhance teaching.
 3. Promote off-campus internships.

—(4) Encourage students to participate in various competitions

—(2) The 4-year colleges/universities and the 2-year junior colleges employ the following methods: 1. screening by skill; 2. recommendation; 3. registration and placement; 4. The Star Plan, which is designed to balance the gap between urban and rural areas and support disadvantaged students in remote areas; 5. application using the Subject Competence Test for a given year and other written reviews.

—(3) Two-year colleges accept the graduates of five-year and two-year vocational schools through several methods: 1. recommendations of students with outstanding skills; 2. registration and placement; 3. individual recruitment.

Since 2010, outstanding students have been able to apply for airfare subsidies to take part in international competitions and exhibitions.

—(5) Encourage professional certification
 Instructors and students are encouraged to obtain professional certification to improve teaching quality and enhance students' competitiveness in the job market.

3. Promote evaluations of vocational and technological colleges and universities

Each school is evaluated as an integral unit every 5 years.

4. Promote cooperation with industry

Encourage interaction between academia and industry; design specific courses or curricula to meet the needs of industry personnel.

—(1) Collaboration between industry and academia

Develop vertical education systems, i.e., 3 in 1 (vocational high schools + vocational colleges + enterprises) programs in various combinations of education plans:

3+2 (3 years in vocational high school and 2 years in 2-year junior college);

3+2+2 (3 years in vocational high school, 2 years in 2-year junior college, and 2 years in a 2-year technical college/university completion program);

3+4 (3 years in vocational high school and 4 years in a technical college/university);

5+2 (5 years of junior college plus 2 years in a technical college/university completion program)

—(2) Masters Degree Program for Industry Professionals

—(3) "Final Mile" Program

—(4) Second-Baccalaureate Program

—(5) Interdisciplinary Program

5. Emphasize innovation and research/development

To encourage collaboration between schools and industry, the government offers subsidies to schools that establish regional cooperative work-study centers and promotes various programs, such as the "Industrial Region Work-Study Program", the "Collaboration Efficiency Enhancement Program", and the establishment

of a "Joint Technology Development Center", all with the goal of improving the national economy and contributing to society.

6. Launch international partnerships and exchanges

To cultivate international talent, the government encourages schools to establish an international environment, including internationalized campuses, curricula, and administration systems, and promote global cooperation and exchanges, including international collaboration in research and teaching, teacher and student exchanges and other collaborative programs.

7. Promote flagship schools

Encourage schools and industry to work seamlessly together so that the schools will be able to supply the manpower needed by small and medium enterprises, so as to strengthen the industrial base.





The Ministry of Education Lends Full Support to the Hosting of the 2017 Universiade

Taiwan has shouldered the responsibility for hosting the XXIX 2017 Universiade, which will be the largest scale and highest level international athletic event ever to be held in Taiwan. The Universiade, dubbed the junior Olympics, has always drawn many outstanding athletes to compete, and thus requires the host country to invest much effort in preparation and maintenance. The Ministry of Education will provide full support to the Taipei City Government in making preparations for the 2017 Universiade. We have established a Preparation Task Force for the 2017 Universiade and will work to provide resources and assistance in the areas of for athletic training, facilities, volunteer recruitment, and publicity. We believe that as the Ministry of Education and the Taipei City Government work together, we will be able to stage one of the most successful Universiades in the history of the event.



Chen Chun-Yu, 25, student of Institute of Innovation Technology and Information Management, National Chin-Yi University of Technology

Eco-friendly lighting invention wins international awards

Lighting has undergone constant improvement since its invention in the 19th century, gradually becoming more and more eco-friendly. A solar lighting system invented by Taiwanese student Chen Chun-yu safely introduces natural light indoors while filtering out nearly 100% of the UV rays and 98% of the IR radiation hazardous to human body.

The invention has won Chen two gold medals in international competitions – at the 26th Invention & New Product Exposition of Pittsburgh and at the 39th International Exhibition of Inventions of Geneva.

In accepting the awards, Chen gave credit to his father, who once told him that ‘invention is a way to solve problems, and an inventor must be aware of problems and then solve them’.

With his father’s encouragement, the younger Chen participated in various invention fairs since he was in junior high school. Of all the inventions he has devised, Chen says he always remembered one creation combining an umbrella and light that was inspired by a wild thought.

Practical hands-on experience, as well as frequent discussions with school professors, has helped Chen to gradually build up his capabilities so that he can face challenges with confidence.

“Invention recognizes no national boundaries and nearly every country has its notable inventions,” says Chen based on his observations at international invention fairs. He adds, however, that Taiwan performs well in the inventive field as a whole.

The award-winning inventor also notes that the Ministry of Education is dedicated to the development of a vocational system which benefits students in the system.



Corine Lee,
student at the
Graduate School of
Cultural Heritage
Conservation,
National Yunlin
University of
Science and
Technology



Packaging design modernizes tea-drinking culture



Student-designer Corine Lee won the iF Packaging Award 2011 in the category of Sales Packaging with a series of tea product packages that utilized recycled paper. In addition to using eco-friendly materials, the shape of tea baskets used by tea growers in earlier Taiwan was also utilized as a prototype for the product line.

With a fondness for the art of tea-drinking, a very profound art in Chinese culture, Lee has worked on several design projects for tea in the past few years. These experiences proved to be rewarding, as Lee won the iF design award for designing the tea brand 'Laozi Say' in 2007.

Currently enrolled in the Graduate School of Cultural Heritage Conservation, National Yunlin University of Science and Technology, Lee at the same time works as the creative director of a design company. She says the best way to begin a new project is to 'discard the old thinking pattern and approach it from a completely new angle'.

To keep up with trends in the ever-changing design industry, Lee absorbs information from various sources. "Sometimes, even strolling around duty-free shops at the airport when changing flights provides a lot of inspiration," she says.

"Of course, the most convenient source for gaining information on trends is still professional books and journals on design published in different countries."

As for the requirements for being a successful designer, Lee says passion for life is a must. Only through deep reflections on the meaning of life can a designer produce products with depth. "Otherwise, everything will seem superficial," says Lee.