TECHNOLOGICAL AND VOCATIONAL EDUCATION IN TAIWAN

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PREFACE

• Taiwan, faced with limited natural resources and diplomatic predicaments, still found the way to overcome the difficulties, created the Taiwan Miracle and became one of the Asian Tigers.

• Taiwan’s economic development has been tightly interwoven with the TVE development, and it is TVE that contributes greatly to Taiwan’s transformation and to the economic prosperity.

• Our government strives for investing in our people and technological and vocational education development.
CONTENTS

• Current status of education in Taiwan
• Hierarchy of education system in Taiwan
• Key features for higher TVE
• Major policies for higher TVE
• Strength of higher education in Taiwan
• Conclusions
I. CURRENT STATUS OF EDUCATION IN TAIWAN

• Population: 23 million
• Fertility rate: 1.11‰ (the 3rd lowest in 2013)
• Education, science, and culture budget: US$ 16.95 billion
• No. of students of all levels: 4,546 million in 4,884 schools
• No. of colleges and univ.: 159
• No. of students in colleges and univ.: 1.254 million
• Higher education entrance admission rate: 94.39%
• Literacy rate (age 15 and above): 98.29%
II. HIERARCHY OF EDUCATION SYSTEM IN TAIWAN

- 6-year Elementary School
- 3-year Junior High School
- 3-year General High School
- 3-year Vocational High School
- 3-year Comprehensive High School
- 2-year Junior College
- 2-year Program
- 5-year Junior College
- 4-year College / University
- 4-year TVE College / University
- Doctoral Program
- Master’s Program

9-year Compulsory Education
3-year Secondary Education
Higher Education
Technological & Professional Education
<table>
<thead>
<tr>
<th>Year</th>
<th>Economic Development</th>
<th>TVE Development</th>
<th>Student Ratio TVE vs. General</th>
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<tbody>
<tr>
<td>1950s</td>
<td>■ Success in Land Reform ■ Increase in agricultural productivity</td>
<td>■ Education in agriculture and commerce</td>
<td>4:6</td>
</tr>
<tr>
<td>1960s</td>
<td>■ Expanding import-export business</td>
<td>■ Developing industrial and commercial vocational education ■ Expanding vocational education program</td>
<td>4:6</td>
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<td>1970s</td>
<td>■ Initiation of the Ten Major Construction</td>
<td>■ Improving industrial vocational education and junior college education</td>
<td>6:4</td>
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<td>1980s</td>
<td>■ Developing high-tech industries ■ Developing petrochemical industries</td>
<td>■ Upgrading the quantity and quality in industrial vocational education and junior college education</td>
<td>7:3</td>
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<td>1990s</td>
<td>■ Developing knowledge economy ■ Planning Asia-Pacific Regional Operations Center</td>
<td>■ Increasing colleges of technology ■ Upgrading junior colleges to colleges of technology ■ Upgrading colleges of technology to universities of science &amp; technology</td>
<td>5:5</td>
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<tr>
<td>2000s</td>
<td>■ Developing the Two Trillion &amp; Twin Star Industries</td>
<td>■ Maximizing and internationalizing TVE</td>
<td>5:5</td>
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<td>2010s</td>
<td>■ Developing Six Emerging Industries, Ten Major Services Industries, and Four Major Intelligent Industries</td>
<td>■ Focusing on matching the industries’ workforce demand and student aptitude</td>
<td>6.2:3.8</td>
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III. KEY FEATURES FOR HIGHER TVE

1. **Comprehensive & well-rounded programs and systems**, ranging from junior high school, senior high school, junior colleges, univ./colleges of science and technology, to graduate schools with master’s and Ph.D. programs

2. **Proactive and excellent private institutions**, which not only outnumber public TVE institutions but allow close match between TVE and market needs due to their close connections with industries and enterprises

3. **Diversified and adaptive programs**, including senior high school professional groups, comprehensive high school vocational programs, In-Service programs, etc. so as to suit student’s inclinations and to meet the various industry needs
III. KEY FEATURES FOR HIGHER TVE

4. **Excellent performance in industrial-academic cooperation**
   - Dual System of Vocational Training Project
   - Industrial-Academic Cooperation Plan
   - Market-based Education Program

5. **Outstanding performances in international competitions**
   - Universities of Technology have both won the iF Product Design Gold Award
   - Many were awarded Red Dot Design Award
IV. MAJOR POLICIES FOR HIGHER TVE

1. **Proactively improving teaching quality** by implementing “Teaching Excellence Projects for Universities/Colleges of Technology”, by the infusion of industry resources for collaborative TVE teaching, by strengthening faculty’s practical teaching capabilities in TVE institutions, and by substantiating the professional certification system, etc.

2. **Promoting evaluations for TVE institutions** so as to ensure the quality of education and to help TVE higher education institutions develop their own specialties.
技職司建立六所區域產學合作中心

國立臺灣科技大學
National Taiwan University of Science and Technology

國立臺北科技大學
National Taipei University of Technology

國立雲林科技大學
National Yunlin University of Science and Technology

國立高雄第一科技大學
National Kaohsiung First University of Science and Technology

國立高雄應用科技大學
National Kaohsiung University of Applied Science

國立屏東科技大學
National Pingtung University of Science and Technology
IV. MAJOR POLICIES FOR HIGHER TVE

3. **Emphasizing industrial-academic cooperation innovation and R&D** by establishing regional industrial-academic cooperation centers and by implementing programs such as Student Off-Campus Internship Program, Special Industrial-Academic Cooperation Classes, and Industry-Enterprise Human Resources Supporting Program, etc.
Industrial-Academia Collaboration Platform

- Interdisciplinary programs
- Industry-oriented curriculum
- Industry-academia partnership
- Core technology & IP management mechanism
- Cross-cultural professional ethics
- Providing qualified human capital for National Innovation System
IV. MAJOR POLICIES FOR HIGHER TVE

4. Developing Technological University Paradigms in order to elevate higher TVE standard by focusing on cultivating domestic talent with innovative training, by promoting Industrial-Academia Cooperation, and by strengthening technology transferring and commercialization of research results.

5. Implementing the Phase II of TVE restructure, including upgrading equipment, integrating resources for regional education centers, offering specialized industry-academia partnership programs, and elevating teachers’ practical skills.
IV. STRENGTH OF HIGHER EDUCATION IN TAIWAN

• Electrical & Mechatronic Engineering
• Computer Science & Information Technology
• Industrial Manufacture
• Arts & Design
• Agriculture
• Fishery Production & Management
• Hospitality & Tourism Management
Electrical & Mechatronic Engineering

• to educate high-quality engineers and researchers for the rapidly changing industries

• to provide cutting-edge technologies and innovations to the industry

• to bridge the gap between fundamental research and industrial applications
Computer Science & Information Technology

• to develop practical and cutting-edge information technologies
• to develop students’ comprehensive and competitive knowledge to face the real world technological advancement
• to nurture graduate-level professionals that meet computer industry needs
Industrial Manufacture

• to familiarize students with the complete process of industrial manufacture, such as design, analysis, manufacturing, and virtualization

• to intensify students' production techniques to cope with industry's advancement
Arts & Design

• to cultivate product designers who are equipped with knowledge pertinent to design theory and design practice to intensify students' production techniques to cope with industry's advancement

• to cultivate designers with creative minds and to cultivate them toward the advanced design professionals who are able to create and to engage in design research and development, planning and management.
Agriculture

• to intensify students' production techniques to cope with industry's advancement and local agriculture

• to allow students to familiarize on tropical floriculture and nursery production, tropical and new fruit exploitation, automation techniques, applied plant biotechnology, herb and medicinal plant production, and other newly emerging areas
Fishery Production & Management

• to equip students with the technical professionals in marine environmental protection, pollution prevention, analysis, testing, modelling, operation and maintenance

• to cultivate professional technical personnel related to fishery production and management, seafood science, aquaculture as well as marine biotechnology
Hospitality & Tourism Management

• to follow sightseeing trends throughout the world, to cooperate with the flourishing development of the hospitality service industry in the country, as well as the demands for skills within the industry, to overcome the obstacles of hotel development in our country and increase the quality of hotel management and services

• to cultivate managerial personnel in the field of leisure, recreation, resort and casino industries
V. CONCLUSIONS

- Our government strives for investing in our people and technological and vocational education development.

- From the perspective of students, TVE is able to suit student’s inclinations and, as a matter of fact, has cultivated countless skilled professionals.

- From the perspective of economies and the society, TVE is able to meet the various industry needs and has greatly promoted Taiwan’s economic and social development.

- It is hoped that TVE can lead us to another economic miracle!
Thank you!

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