ICT Promoting the Improvement of Education Quality: Experience and Practice

Dr. HAN Wei
Deputy Director, UNESCO-ICHEI
ICHEI is located on the campus of Southern University of Science and Technology (SUSTech) in Shenzhen.
Shenzhen
The Silicon Valley of China
The Paradise of Innovation
Shenzhen is the first Special Economic Zone in China and a window for China's reform and opening up.

2017, Shenzhen GDP about 356.4 Billion USD
Hongkong GDP about 366.1 Billion USD

Shenzhen has nurtured 6 world top 500 companies, including Ping An Group, HUAWEI, China Merchants Bank, Amer International Group, China Vanke Co., Ltd, and Tencent.
Shenzhen is the Chinese city that resembles the Silicon Valley most.  
—— Business Week

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>30,000</td>
<td>More than 30,000 technology companies in Shenzhen</td>
</tr>
<tr>
<td>3</td>
<td>3 companies with over 100 billion RMB of sales</td>
</tr>
<tr>
<td>17</td>
<td>17 companies with over 10 billion RMB of sales</td>
</tr>
<tr>
<td>157</td>
<td>157 companies with over 1 billion RMB of sales</td>
</tr>
<tr>
<td>1,203</td>
<td>1,203 companies with over 0.1 billion RMB of sales</td>
</tr>
<tr>
<td>1,216,300</td>
<td>1,216,300 professionals in various fields</td>
</tr>
<tr>
<td>11,600</td>
<td>11,600 PCT patent applications, the highest in China</td>
</tr>
<tr>
<td>58</td>
<td>58 billion RMB research investment, 4.2% of GDP, on par with that of South Korea</td>
</tr>
<tr>
<td>4,700</td>
<td>More than 4,700 high-tech companies at the national level</td>
</tr>
<tr>
<td></td>
<td>Leading innovation in areas such as 4G technology, super materials, gene sequencing, 3D, new energy cars and so on.</td>
</tr>
</tbody>
</table>
Four Pillar Industries

- High tech industry
- Financial industry
- Logistics industry
- Cultural industry

Future industries

- Intelligent equipment
- Robot
- Wearable equipment
- Marine
- Life science
- Aeronautics
SUSTech
New University
Research, Innovation and Entrepreneurship
China's higher education reform lab
Public Research University
SUSTech
Southern University of Science and Technology
Academic Structure

- School of Medicine
- College of Sciences
- College of Engineering
- College of Life and Health Sciences
- College of Innovation and Entrepreneurship
- School of Business
- Centers of Arts, Humanities, Social Sciences and Language Education
- Teaching Hospitals and Affiliated Hospitals
<table>
<thead>
<tr>
<th>Departments (14)</th>
<th>Degree Programs (26)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Physics</td>
<td>Physics, Applied Physics</td>
</tr>
<tr>
<td>Earth and Space Sciences</td>
<td>Geophysics</td>
</tr>
<tr>
<td>Biology</td>
<td>Biological Sciences, Biotechnology, Bioinformatics, Biomedical Sciences</td>
</tr>
<tr>
<td>Materials Science &amp; Engineering</td>
<td>Materials Science &amp; Engineering</td>
</tr>
<tr>
<td>Environmental Science &amp; Engineering</td>
<td>Environmental Science &amp; Engineering, Hydrology and Water Resources Engineering</td>
</tr>
<tr>
<td>Computer Science &amp; Engineering</td>
<td>Computer Science &amp; Technology</td>
</tr>
<tr>
<td>Mechanics &amp; Aerospace Engineering</td>
<td>Theoretical and Applied Mechanics, Aerospace Engineering</td>
</tr>
<tr>
<td>Machinery &amp; Energy Engineering</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>Ocean Science and Engineering</td>
<td>Ocean Science</td>
</tr>
<tr>
<td>Finance</td>
<td>Finance, Financial Science and Engineering</td>
</tr>
</tbody>
</table>
Hold PhD degree
Recruited from overseas
With work and/or education background in the world’s top 100 universities

Academic Leaders

Prof. Xu Zhenghe
University of Alberta
College of Engineering

Prof. Xia Zhihong
Northwestern University
Mathematics

Prof. Cheng Xin
Texas A&M University
Material Sci & Eng

Prof. Shan Xiaowen
Exa Corporation
Mechanics & Aerospace Eng

Prof. Zheng Chunmiao
University of Alabama
Environmental Sci & Eng

Prof. Yao Xin
University of Birmingham
Computer Sci and Eng

Prof. He Jia
Chinese University of Hong Kong
Finance

Prof. Sun Xiaowei
Nanyang Technological University
College of Engineering

Prof. Xiao Guozhi
Rush University
Biology

Prof. He Jiaqing
Northwestern University
Physics

Prof. Zhang Xumu
State University of New Jersey
Chemistry

Prof. Rong Yiming
Worcester Polytechnic Institute
Mechanical & Energy Eng

Prof. Chen Yongshun
Oregon State University
Ocean Science & Eng

Dr. Brian Butler
University of Oregon
Center for Language Education

Prof. Bi Baoyi
Central China Normal University
Art Center
ICHEI

ICT, Innovation and Higher Education
Mission and Functions

- Relying on the advantages of Shenzhen's information and communication technology (ICT) sector and drawing upon China's experience with the massification of its higher education, ICHEI aims to improve the quality of higher education and promote educational equity in developing countries.

- ICHEI has been carrying out higher education cooperative projects with countries along the Maritime Silk Road. ICHEI aims to provide intellectual support and human resources for local industrialization and informatization.

- ICHEI also conducts research on education in the countries along the Maritime Silk Road, aiming to become an influential international think-tank.
Based on Asia-Pacific, covering Africa and visioning the global

Asia-Pacific countries: Cambodia, Sri Lanka, Pakistan, UAE, Indonesia, Myanmar.

African and Middle East countries: Ethiopia, Djibouti, Egypt, Uganda, Namibia, South Africa, Gambia.

The Centre will expand programmes in the Central and Eastern European countries, which include Hungary, Serbia, Latvia, Romania, etc.
Innovation——Integration of Resources

RESOURCES

Platforms
- coursera
- Udemy
- edX
- Future Learn
- 聚思

Universities and Think-Tank
- Human Resources
- Professional Knowledge
- Successful Experience

Private sectors
- Tencent
- 华为
- Alibaba
- Google
- SAMSUNG
Public-Private Partnership (PPP)

- Reduce cost of ICT infrastructure.
- Improve carrying capacity of higher education institutions.
- The localized talents training in enterprises’ overseas market.

Integrate China's quality ICT resources.

- Three Internet giants in China (Baidu, Alibaba and Tencent, “BAT”)
- China has the largest Internet users in the world.
ICHEI’s Partnership Network

- International organization
- Universities and Think Tanks
- Enterprises
- Government
ICT Promoting the Improvement of Education Quality: Experience and Practice
The potential of ICT in shortening the educational gap

The spread of ICT and global interconnection has great potential for accelerating human progress, shortening digital divide and developing knowledge society.

**To access resources and information easily.**

ICT can help students and teachers (including in underdeveloped and remote areas) to access information, online certification, and learning guidance by providing quality, cheap and accessible higher education resources.

**The connection between individual and organization.**

Connection can enhance interaction and communication among students, educators and institutes to ensure common learning, cooperative projects, product prototyping and innovation.

**Effective forces and resources benefit the improvement of efficiency.**

Improving productivity of teachers and expanding scope of teaching coverage by expanding the availability of information and using email, SMS and online learning platforms to ensure instant communication. At the same time, educators can analyze collected data by professional tools to formulate personalized learning courses.
OUR WAY

- Promoting connection and resource accessibility by building platforms
- Promoting education sustainable development through ICT capacity building
- Think tank
- Set up UNESCO-Shenzhen Funds-in-Trust
Promoting connection and resource accessibility by building platforms

NO1
The major functions of the Smart Classroom will be to enable partner universities to build a comprehensive Learning Management System (LMS), expand their educational resources, as well as to establish a recording and broadcasting system for their academic programmes across campuses.
SUSTech-HUAWEI Authorized Information and Network Academy

HAINA solution is the ICT technology education plan to the world. It adopts the popular model of school enterprise cooperation, relying on the technology and market leading advantages of HUAWEI in the field of ICT.

MOOC Center

The MOOC Center can provide support for making online courses and training. MOOC Center can meet the needs of making MOOC, recording educational classical courses, camous studio, meetings and activities, microteaching and recording real-time training courses.
Promoting education sustainable development by ICT capacity building
Capacity Building

• The shortage of ICT talents.

• Keep pace with Industry 4.0, practical training.

• Custom-made training.
The shortage of ICT talents

The chairman of the African Union Committee, Nkosazana Dlamini Zuma, pointed out that “there are more than 200,000,000 young people aged 15 to 24 in Africa, and the youth population is the comparative advantage of Africa, and we must transform them into demographic dividends.”

"
In developing countries, this figure is only 40%, while in the least developed countries (LDC), this figure is as low as 15%.
Keep pace with Industry 4.0, practical training.

<table>
<thead>
<tr>
<th>TRAINING</th>
<th>THEME</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016, RUPP, Cambodia Training</td>
<td>Basic ICT, STEM, MOOC</td>
</tr>
<tr>
<td>2017, African Countries Training</td>
<td>ICT in Higher Education Innovation</td>
</tr>
<tr>
<td>2017, Asian Countries Training</td>
<td>ICT in Higher Education Innovation</td>
</tr>
<tr>
<td>2018, African Countries Training</td>
<td>Big Data and Cloud Computing</td>
</tr>
<tr>
<td>2018, Asian and European Countries Training</td>
<td>MOOC and Online Learning</td>
</tr>
<tr>
<td>2018, Chad Training</td>
<td>Educational Informationization</td>
</tr>
</tbody>
</table>
2017 Seminar on ICT in Higher Education Innovation for Asian and African Countries
Workshop on

Higher Education Information and Communication Technology: Capacity Building
Facilitate Pakistan to establish a Literacy Centre

Mr. TANG Qian, Former Education Assistant Director General of UNESCO called this cooperation as “the model for South-South cooperation”.
Holding international conferences, issuing regional declarations and consensus.

Welcome to join 2018 Seminar on MOOC
June 11-13. Shenzhen, China
Providing consultancy report for the China-Africa Think Tank Forum
Publications
UNESCO-Shenzhen Funds-in-Trust
The Shenzhen Government made a contribution into the UNESCO/Shenzhen Government Funds-in-Trust for a total amount of USD 2,000,000 to enable UNESCO to provide assistance to Member States for the implementation of programs and projects agreed upon by the parties.

The Asia-Pacific Programme focusing on ICT application in Sri Lanka and Cambodia. (25% of the Fund)

The Africa Programme focusing on the quality assurance of higher education in 10 African countries (Niger, Togo, Côte d'Ivoire, Mali, Zambia, Egypt, Gambia, Malawi, Namibia, Senegal). (75% of the Fund)
INTERNATIONAL CENTRE FOR HIGHER EDUCATION INNOVATION
UNDER THE AUSPICES OF UNESCO

UNESCO-ICHEI

NO 1088,XUEYUAN RD., XILI, NANSHAN DISTRICT,
SHENZHEN,GUANGDONG,CHINA 518055
office@ichei.org
www.ichei.org