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WPI GLOBAL PROJECT CENTERS: THE NEED FOR APPLIED CULTURAL LEARNING
MAP FOR TODAY: ALL (SUBVERSIVE) ROADS LEAD TO CHINA

Quest:
China and Chinese language program at STEM school

Challenges:
Project-Based Learning curriculum
Existing requirements and ABET accreditation
Project Center model

Methods:
Applied Humanities: “China Across the Curriculum”
Integration of Chinese and China content into STEM curriculum and vice versa
US engineers “will be based abroad, will have to travel . . . around the world to meet customers, and will have to converse proficiently in more than one language.”

“U.S. engineers … will have to be open to different religions, different ways of thinking, and different social values. Flexibility and respect for ways of life different from ours will be critical to professional success.”*

*“Educating the Engineer of 2020: Adapting Engineering Education to the New Century,” p 152
PROJECT-BASED LEARNING

WPI Plan since 1970 – 50 year anniversary

- Students learn *how to learn* by applying their classroom experiences in projects that challenge them from a proficiency, social, and global perspective

- Applied iterative knowledge
  - students work for extended period of time investigating and responding to authentic and engaging real-world problems, questions, or challenges
DIRECT PARTICIPATION
CHINA PROGRAM FOR STEM:

- Project Centers: Hong Kong, Hangzhou, Beijing
- Creation of classes
  - Chinese language classes (3 years)
  - Environmental Justice in China, Re-Engineering China, Nationalism in Asia, East Asia: China at the Center; Popular Culture and Social Change in China; History of Technology in China
- Creation of Modules
  - Wicked problems
    - water
    - Urban Sustainability
- Chinese Studies minor
- China concentration in Professional Communication Major
WPI GLOBAL PROJECT CENTERS:
THE NEED FOR APPLIED CULTURAL LEARNING
WICKED PROBLEMS: GLOBAL AND LOCAL

WATER STRESS BY COUNTRY

ratio of withdrawals to supply
- Low stress (< 10%)
- Low to medium stress (10-20%)
- Medium to high stress (20-40%)
- High stress (40-80%)
- Extremely high stress (> 80%)

This map shows the average exposure of water users in each country to water stress, the ratio of total withdrawals to total renewable supply in a given area. A higher percentage means more water users are competing for limited supplies. Source: WRI Aqueduct, Gass et al. 2013

Source: World Resources Institute
CHINA’S WATER SCARCITY PROBLEM: HEIHE BASIN

Water demand by sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>2005</th>
<th>2015</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal &amp; Domestic Industry</td>
<td>555</td>
<td>667</td>
<td>818</td>
</tr>
<tr>
<td>Agriculture</td>
<td>358</td>
<td>385</td>
<td>420</td>
</tr>
<tr>
<td>CAGR 2005-30</td>
<td>1.6%</td>
<td>2.7%</td>
<td>2.9%</td>
</tr>
</tbody>
</table>
| Source          | 2030 Water Resources Group, Charting our Water Future, December 2009
| Refer to SCARCITY in The Big Picture on the China Water Risk website for more details on which provinces are running dry and the supply and demand gap.
APPLIED CONTENT
KNOWLEDGE
MODULE: CONTEXT

SKY CITY

CONSTRUCTION
MATERIALS
GRANTS: THEY ARE UISFL

- **US Department of Education**
  - BIE: Business and International Education
    - Now wrapped into UISFL
  - UISFL: Undergraduate International Studies and Foreign Language
    - 2-year cycle
    - 1:1 match required

- **US Department of Defense**
  - Project GO (Global Officer)
    - 3-year cycle
    - Pulled out of Mainland China; now on Taiwan

- **Tips**
  - Collaborations with non-language colleagues
  - Find ways to integrate offerings
  - National Security 😊
APPLIED LANGUAGE LEARNING: THEMATIC INTEGRATION OF CONTENT AND LANGUAGE CLASSES -- ENTREPRENEURSHIP

- Project Center: Hangzhou
- Entrepreneurship projects in Hangzhou
- International Entrepreneurship focus in International and Global Studies and in Business Major
- Development of Case Studies
  - Coffee Shops in China (Prof. Amy Zeng, Foisie School of Business)
- Creation of classes
  - Chinese language classes (3 years)
  - Business in Post-Socialist States
  - Business Chinese
Hangzhou Omnipay,

Feasibility Study for
E-Bike Sharing System
1. Hangzhou Dianzi University
   杭州电子科技大学

2. Zhejiang Sci-Tech University
   浙江理工大学

3. Hangzhou Technical and Vocational College
   浙江职业技术学院

4. Zhejiang Univ. of Finance and Economics
   浙江财经学院

5. Hangzhou Normal University
   杭州师范大学
APPLIED LANGUAGE LEARNING: THEMATIC INTEGRATION OF CONTENT AND LANGUAGE CLASSES -- ENTREPRENEURSHIP

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BUSINESS CHINESE
WEN-HUA DU

COMBINING LANGUAGE LEARNING WITH REAL CASE STUDIES

REALLY? COFFEE SHOPS IN CHINA?
KE WANG, AMY ZENG, MICHAEL GINZBURG

Major Players Comparison (1/2)

Value Chain & Supply Chain
THANK YOU!

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