



Internationalization of Mechatronics Engineering Study Courses – Experiences with China, Korea and Singapore

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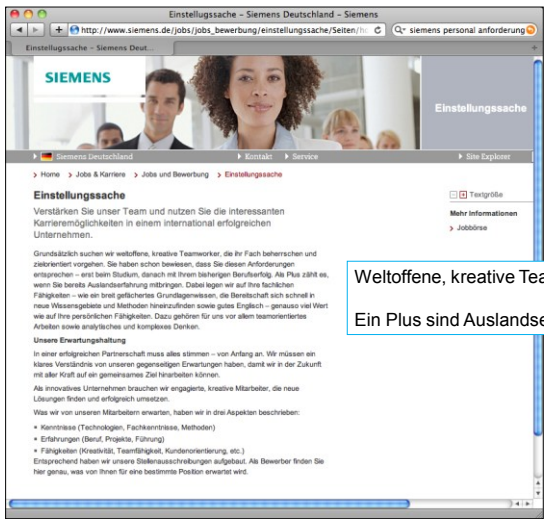
REM 2011, Kocaeli University, Kocaeli, Turkey



Overview

- Demands of German industry
- Mechatronics Curriculum
- Placement Semester Abroad
- Cooperation with:
 - Singapore
 - Korea
 - China
- Conclusions





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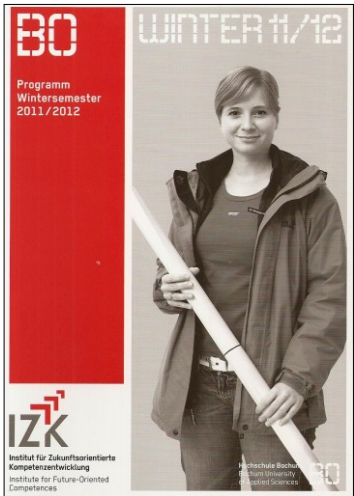
Weltoffene, kreative Teamworker
Ein Plus sind Auslandserfahrungen

6

Partner Universities



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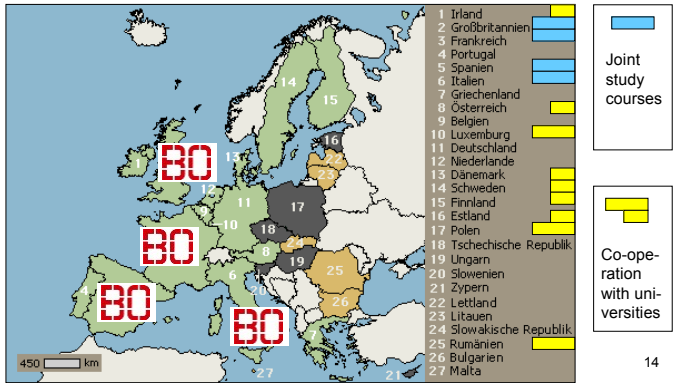
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- Course program of IZK
 - Soft skills (Key qualifications)
 - Social and intercultural competences, language courses
 - Competence for entrepreneurship

11

Co-operation in Europe



14

Master Thesis
Machine Vision, WS 2010/11



- Dipl.-Ing. Armin Evers, M.Sc. (Mechatronik)
- Automated Vision Inspection of Tramway Tracks
- Coventry University, Coventry, UK
- Prof. Keith J. Burnham
- Stewart Jackson, Bytronic Automated Ltd., Warwick, UK
- Prüfer: Prof. Dr. Dudziak, Dipl.-Ing. Dirk Mohr
- www.coventry.ac.uk
- www.bytronic.com

15



Students of
Kocaeli University, Turkey

Hochschule Bochum
Bochum University
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Prof. Brychta (1st from left) Prof. Ertunc (4. v.l.) Prof. Turk (1. v.r.)
27th May 2010

- Mechatronics students pass their 3rd year of studies at Bochum University
- Erasmus exchange
- Two semesters of lectures and Bachelor-Thesis
- Care of :
Prof. Dr. **Brychta**
- <http://mf.kou.edu.tr/mechatronik/en/index.html>

20



Awards Ceremony in London

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Tobias Tepe Marion Werthebach Esther Perea Dr. Ken Rotter
Prof. Dr. Kohn Nick Schulz Axel Kuhlmann Benjamin Wagner

- Awards Ceremony am 28. Juli 2011
- St. George's Cathedral
- Studium an LSBU in London von Sept. 2009 – Nov. 2010
- Dipl.-Ing. (FH) MEchatronik / Maschinenbau und Master:
- **Tepe** ME: MSc Quality Engineering Management
- **Schulz** ME: MSc Design and Manufacturing Management
- **Kuhlmann** MB: MSc Design and Manufacturing Management
- **Wagner** ME: MSc Design and Manufacturing Management
- Johannes **Golücke** MB: MSc Design and Manufacturing Management (nicht auf Foto)
- www.lsbu.ac.uk

16



Students of German Jordanian University
Amman, Jordanien

Hochschule Bochum
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Hazim Abulibdeh Prof. Biesenbach Amir Sharayha
Jan. 2010

- Mechatronics students of GJU pass their 4th year of studies at Bochum University
- One semester lectures, one semester placement semester in a German company
- Care of:
Prof. Dr. **Biesenbach**
- www.GJU.edu.jo
- <http://gju.hs-magdeburg.de>

21

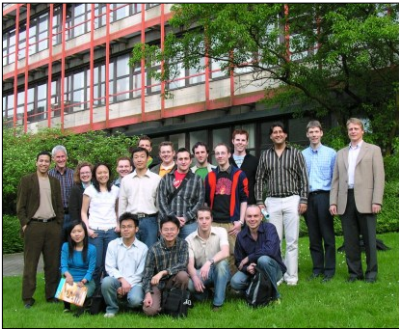
Placement semester



24



Exchange programme
with NTU, Singapore



Placement semester at companies in Singapore / Bochum

- 13th student meeting from Nanyang Technological University NTU and Fachhochschule Bochum on 17 May 2006
- Exchange of 5 students of NTU and 6 students of FH Bochum in 2005
- Care of: Prof. Dr. Köhn, FB E
- www.ntu.edu.sg/opa

26



25



Placement semester
in Singapore, SS 2009



Nick Schulz (Me) Andrej Willms (Me)
Axel Kuhlmann (Mb) Farhad Ghorban (Me)
nicht auf Foto: Azzeddine Mohib (Me)

- Studierende der Mechatronik und des Maschinenbaus
- Firmen:
 - Continental Automotive Singapore
 - IntriCon
 - Projective Space
- Aufgaben:
 - Research & Development
 - Produktion
 - Design
 - Programmierung
- www.continental-corporation.com
- www.intricon.com.sg
- www.projective-space.com

27





Tea-Party 10th anniversary of cooperation

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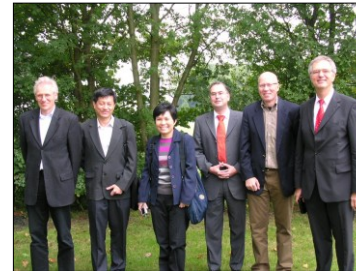


Tea-Party on 29th June 2007 at Singapore Recreation Club with Singapore and Bochum students

28

Cooperation with Ngee Ann Polytechnic NP, Singapore

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Hr. Yang Kiam Giap Lecturer
Electrical Engineering Division, School of Engineering, NP
Frau Lim Geok Choo Deputy Director

- Visit of Mrs Lim and Mr Yang on 10th Sept. 2007
- Cooperation in the field of Solartechnique
- Building of a Solar-House in Singapore
- www.np.edu.sg



32

Visit to Ngee Ann Polytechnic, Singapore

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Principal Chia Mia Chiang
Prof. Dudziak
Woon Kok Meng
Prof. Köhn

- Visit on 26th June 2007
- Talks about the existing cooperation with student exchange and future developments
- Contact to the directors of the School of Engineering:
- Woon Kok Meng
Mechanical Engineering Division
- Dr. Lim Choo Min
Electronic & Computer Engineering Division
- Koh Wee Hiong
Electrical Engineering Division
- www.np.edu.sg

31

Diplom-Thesis in Singapore Mechanical Eng., SS 2010

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Dudziak

Brausen

- Dipl.-Ing. Marc Brausen
- Research and Development to optimize the process flow and work environment during the mentoring of a new production line
- Firma iWOW Communications Pte.Ltd., Singapore
- Prüfer: Prof. Dr. Dudziak, Dipl.-Ing. Simon Tschöke
- www.iwow.com.sg

33

Placement semester in Bochum:
Students from Singapore

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Yeo Howe Li, Aastha Goel (NTU) Chong Jaemeng, Ang Wee Hao (NP)
Roll-out of the new SolarCar „SolarWorld GT“ on 22 June 2011



- Work in the project team
- February – July 2011
- www.hochschule-bochum.de/solarcar
- Care of: Prof. Dr. Pautzke

34

Placement semester
in Korea, SS 2005

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- Mechatronics student Kamal Ourahou
- Osram Korea, Ansan, Kyonggi-Do, Korea
- PLC programming of production lines
- www.osram.co.kr



36

Kyonggi Institute of Technology,
Shihung (Seoul), South Korea

Hochschule Bochum
Bochum University
of Applied Sciences



Shihung-City



www.KINST.ac.kr/main/eng

35

Visit from Kyonggi Institute
of Technology KINST, Korea

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Prof. Eun (4. from left) Prof. Dudziak (2. from right)

- 2 weeks excursion to Germany
- Hochschule Bochum: 19/21 January 2010
- Visit of labs
- Visit of companies: Adam Opel Bochum and ThyssenKrupp Steel Bochum
- Agreement for the continuation of the cooperation
- www.kinst.ac.kr/main/eng

37



Students of CDHAW, Shanghai, China

Hochschule Bochum
Bochum University
of Applied Sciences



Sun Kaicong Xu Peng Jiang Bofan Wei Tian
Jing Ran Prof. Roddeck Cao Zhen
Prof. Dudziak
4. Jahr in Bochum: WS 2010 + SS 2011 24.09.2009

- Mechatronics students pass their 4th year of studies at Bochum University
- One semester of lectures, one semester of placement and Bachelor-Thesis in a German company
- Care of: Prof. Dr. Biesenbach
Prof. Dr. Dudziak
Prof. Dr. Roddeck

<http://www.cdhaw.net>

42

同济大学中德工程学院



Chinesisch-Deutsche Hochschule
für Angewandte Wissenschaften

New building on campus of
Tongji-University, Shanghai, VR China

Start of studies: September 2004

- Four years BA study courses:
 - Mechatronics (FHT Esslingen, Prof. Dr. Schwarz)
 - Automotive engineering (FH Braunschweig, Prof. Dr. Rinne)
 - Building services engineering (FH Erfurt, Prof. Dr. Mischner)
 - Industrial engineering
- Co-operation of HS Bochum in Mechatronics and Industrial eng.: Prof. Dr. Biesenbach, Prof. Dr. Brychta, Prof. Dr. Dudziak, Prof. Dr. Roddeck

<http://cdhaw.tongji.edu.cn>

39

Bachelor-Thesis Mechatronics, SS 2011



Yanik Sun Dudziak 17.8.2011

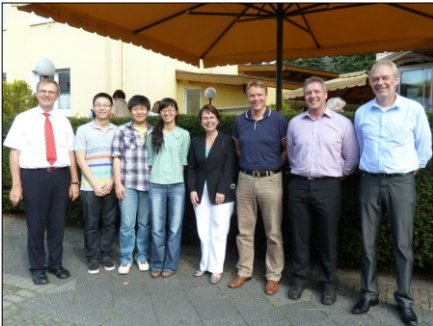
- Sun Kaicong, B.Eng., CDHAW Shanghai
- Konstruktion u. Auslegung eines Rohrleitungssystems für einen Pumpenprüfstand
- Firma Vogelsang & Benning Prozeßdatenverarbeitung GmbH, Bochum
- Prüfer: Prof. Dr. Dudziak, Dipl.-Ing. Klaus Brekau, Dipl.-Ing. Mustafa Yanik
- www.vogelsangbenning.de

44

DELPHI

Cooperation with DELPHI

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Dudziak Wei Xu Jing Bauer Hammel Bolte Kuypers 18.8.2011

- Three CDHAW students pass their placement phase and their Bachelor-Thesis at Delphi Deutschland GmbH in Wuppertal
- SS 2011
- www.delphi.com

45



Southwest University of Science and Technology SWUST
Mianyang, Province Sichuan, PR China (Oct. 2007)

47



Visit of Shanghai Krupp Stainless SKS on October 19, 2007

Abenteuer China 中国

Berichte von einer Exkursion ins Reich der Mitte

**Donnerstag, 2. Dez. 2010,
14 Uhr, Hörsaal H 8**

**Interessierte sind
herzlich eingeladen!**



Visit of
Shanghai Volkswagen SVW

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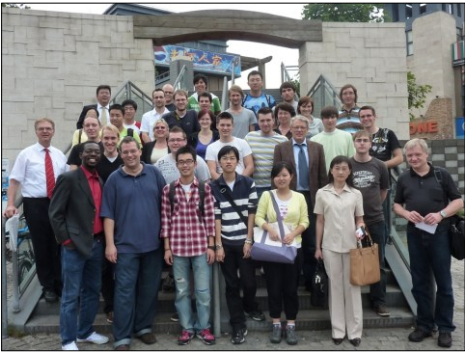


MA Yimin, International Office Andreas Klein, BO-Student an der Tongji-Universität

51

Meeting with students
of CDHAW, 中德工程学院

Hochschule Bochum
Bochum University
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Prof. FENG Xiao, Director Prof. Dr. Worlitz, HS Zittau/Görlitz

- Excursion to China
- 18 BO-students
- Shanghai & Beijing

11th Oct. 2010

50



Inauguration of the China – Germany Joint Laboratory

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SWUST,
Mianyang,
Sichuan,
PR China

19. Oct. 2010

54

Placement semester in China, SS 2009

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- Mechatronics student
Amelle Beele
- Bosch Automotive Products
RBCC/ENG, Changsha,
Provinz Hunan, VR China
- Testeinrichtungen in der
Montagelinie für E-Motoren
- Betreuer: Prof. Dr. Dudziak
- www.bosch.com.cn

China-Blog: <http://amelle.info>

58

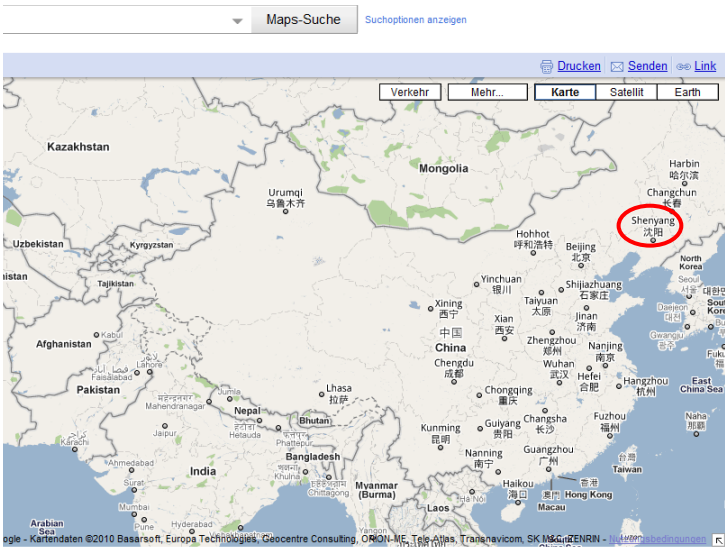


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Placement
semester
at Bosch,
Changsha,
Hunan,
PR China

59



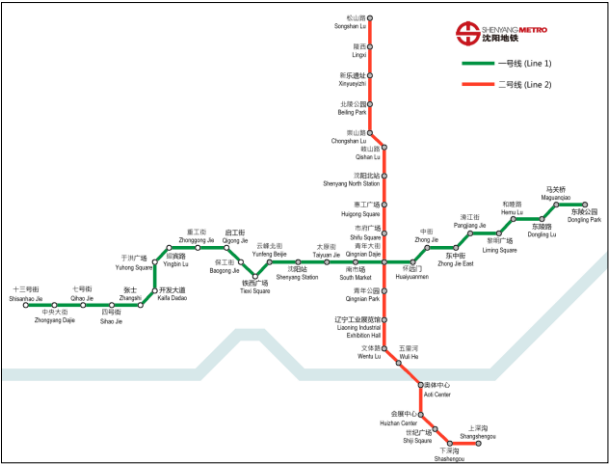
Diplom-Thesis
Mechatronics, WS 2010



Reichling Beele Dudziak

- Dipl.-Ing. Amelle Beele
- Produktionsplanung eines Türantriebs von Bahnsteigsicherheits Türen in China
- Firma Pintsch Bamag GmbH, Dinslaken – Standort Shenyang (China)
- Prüfer: Prof. Dr. Dudziak, Dipl.-Ing. H.-U. Reichling
- www.pintschbamag.com

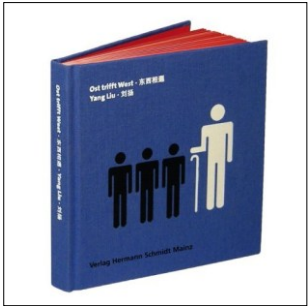
62



Shenyang: population in the city 4.6 Mio., in the area 7.1 Mio

61

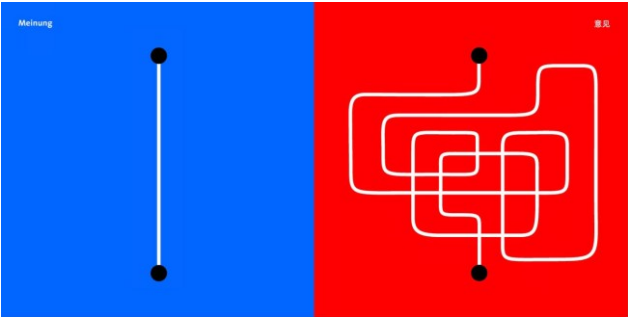
Different cultural areas



- Learning about the daily life in another culture.
- The pictograms show the different ways of thinking and of social graces in China and in Germany.

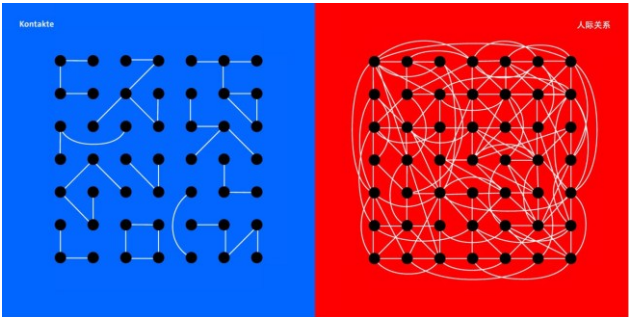
63

Opinion



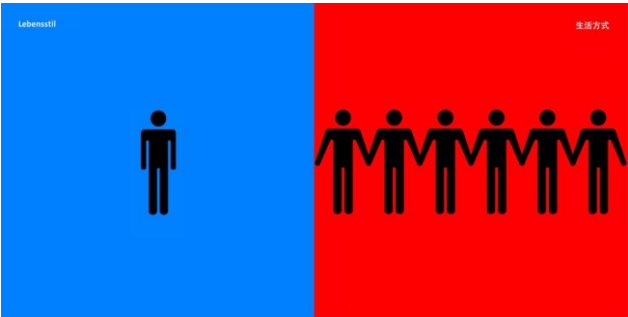
64

Contacts



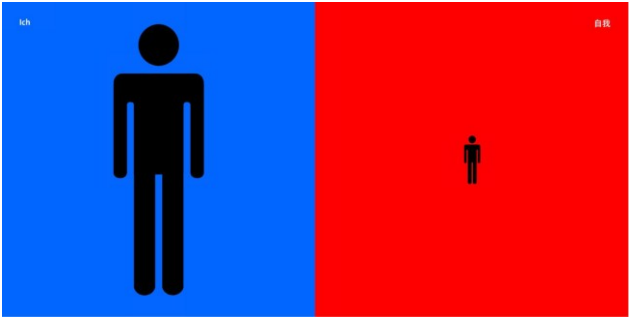
67

Style of life



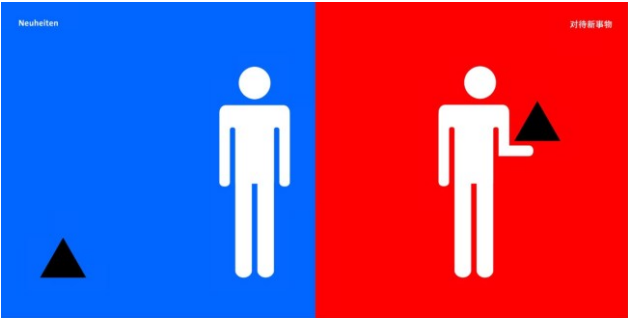
65

Me



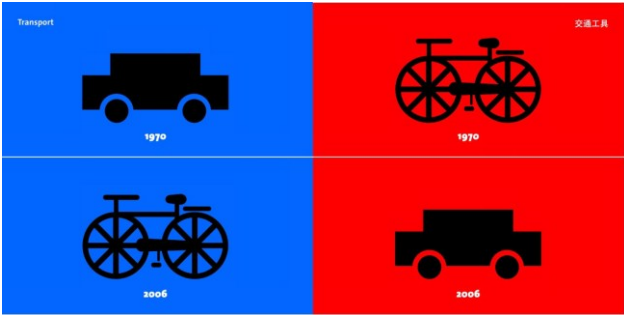
68

Innovations



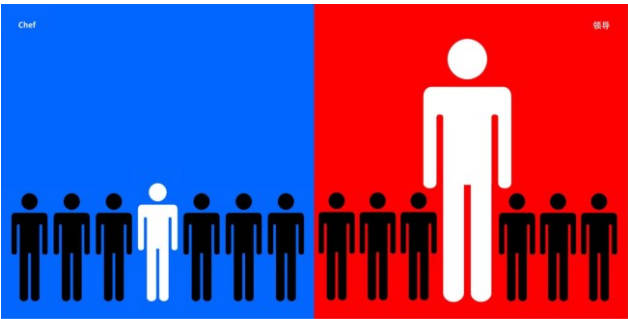
69

Transport



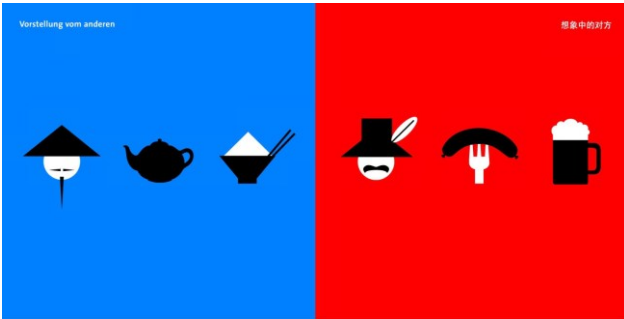
71

Boss



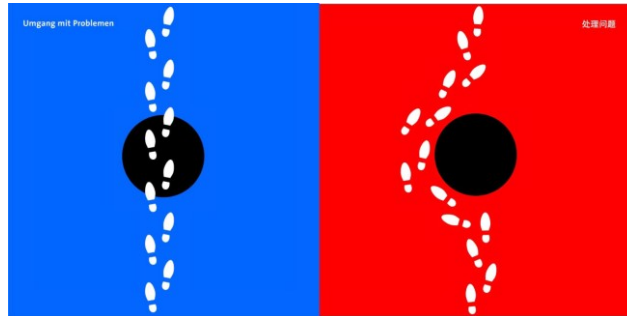
70

Imagination of the others



72

Handling of problems



73

Conclusions

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- Studying at a foreign university or working in a foreign company, students gain many different experiences especially for their personal development.
- They learn how to behave in a different cultural area and they have to reply to questions about their own cultural background.

75