

产业结构对教育结构的影响 Industry Structure's Impact on Education Structure

美国、德国、中国职业教育体系比较

Comparision of Vocational Education System
in U.S.A., Germany & China



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**变化已经出现，
Change has occurred,
下一个社会已经到来，
the next community has come,
这是不可逆转的。
it is irreversible.**

(彼得·德鲁克 Peter F. Drucker)

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经济全球化 Economy Globalization

产业结构变化 Industry Structure Change

人才结构变化 Human Resource Structure Change

发达国家
Developed Country

知识密集-人才密集
Knowledge&Human Resource Intensive

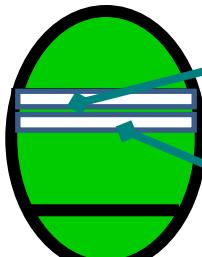
第二次工业化
-- 知识经济
2nd Industrialization

新兴工业国家
Newly Booming Industrial Contry

第一次工业化
-- 工业经济
1st Industrialization

发展中国家
Developing Country

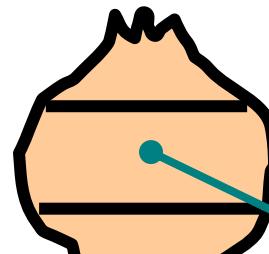
劳动密集-资源密集
Labour&Resource Intensive



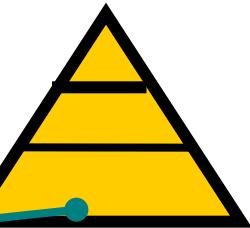
橄榄型
Olive Shaped

美国
USA

德国
Germany



葱头型
Onion Shaped



金字塔型
Pyramid Shaped

美国
USA

- 航天、航空、材料、信息、金融、医药、服务、农业、生物...
- *Space & Aviation, Material, IT, Finance, Medicine, Services, Biotech, Agriculture...*

高端制造业 19%: 高附加值高创新
Top Manufacture 19%: High Added Value, Advanced Initiative

德国
German
y

- 机电、装备、汽车、化工、材料、医药、金融、服务...
- *Electromechanic, Equipment Manufacture, Auto, Chemical Eng., Material, Medicine, Finance, Service...*

高端制造业 25%: 高新技术高质量
Top Manufacture 25%: High Tech, High Quality

中国
China

- 钢铁、汽车、船舶、石化、纺织、轻工、电子、装备、有色、金属、物流、服务...
- *Iron & Steel, Auto, Ship Building, Petro Chemicali, Texitile, Light Industry, Electronics, Equipment Manufacture, non-ferroous Metal, Logistics, Service...*

中低端制造业 50%: 高速发展大规模
Mid-Low Manufacture 50%: Rapid development, Large Scale

支柱产业
Pillar Industry

产出规模大
large Output
扩张能力强
Strong Expendng Ability
关联系数高
High Relevance
收入弹性好
Good Income & Benefit Space
吸纳就业多
More Job Opportunity

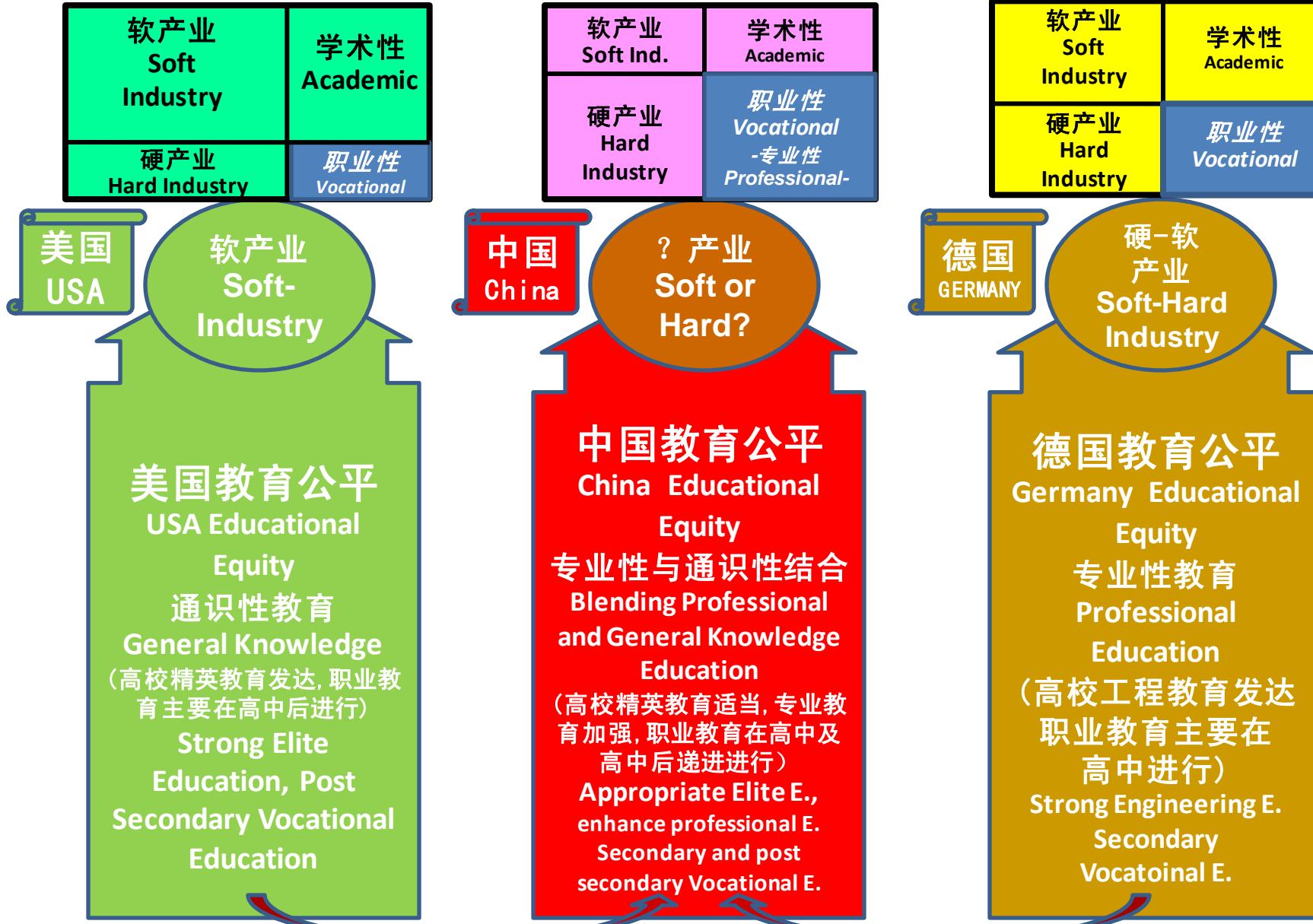
占世界制造业份额
Manufacturing industry of the world share

美国：1.717万亿美元 **19.9%**
U.S.A 1.717 billion Dollar-19.9% (2009)
1.78万亿美元 **19.4%**
1.78 billion Dollar-19.4% (2010)

中国：1.608万亿美元 **18.6%**
China 1.608 billion Dollar-18.6% (2009)
2.05万亿美元 (**2010**)
2.05 billion Dollar-19.8% (2010年)
** HIS

机器与装备制造业占世界制造业份额 (**2009**年)
**Machine & Equipment
of Manufacturing in the world share (2009)**

德国：19% **Germany 19%**
美国：**15% U.S.A 15%**

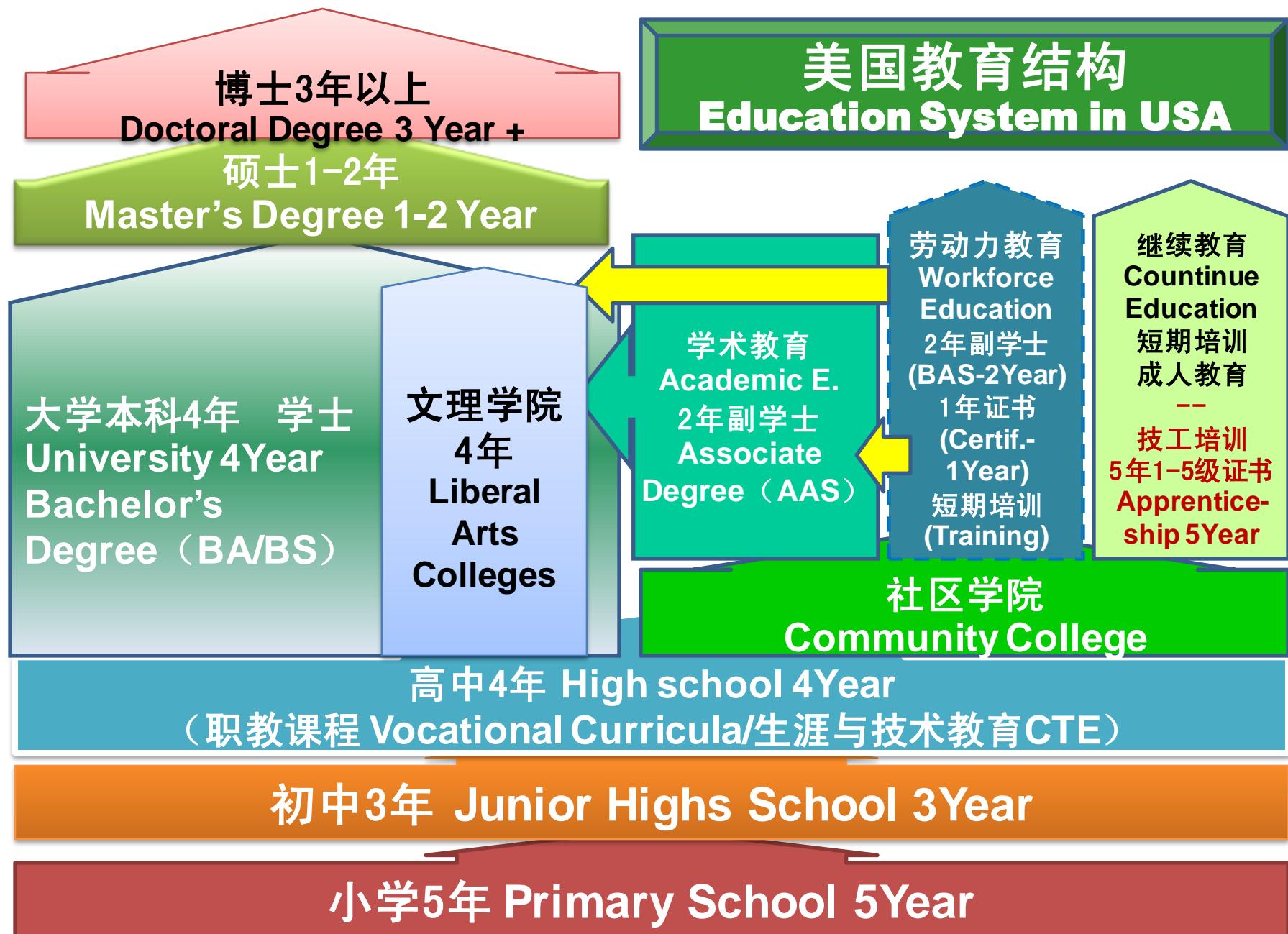


研发、金融投资、教育、专业服务
Reserch, Financial Investment, Education, Professional Service

姜大源 JIANG, Dayuan 2013

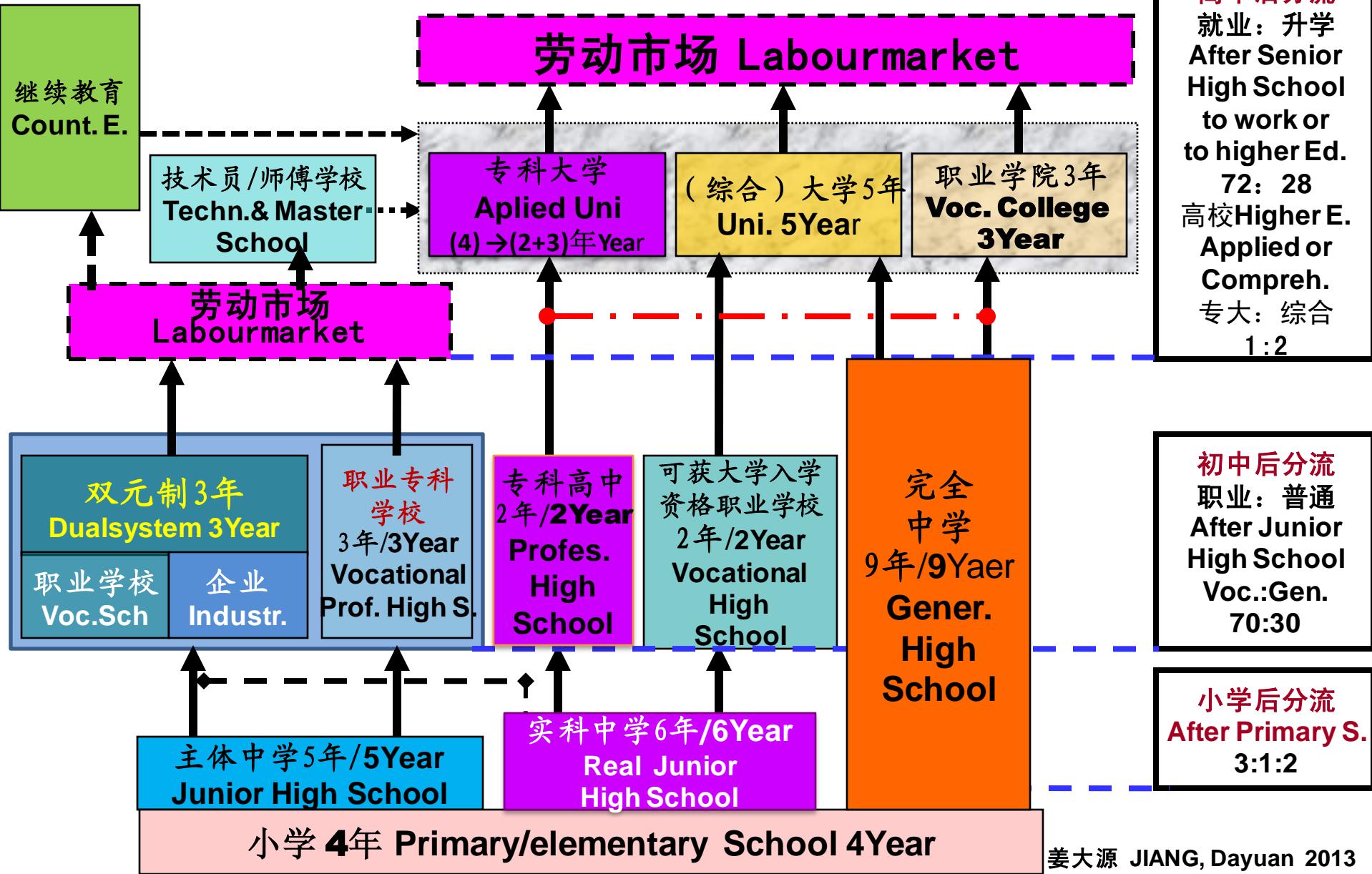
装备、机电技术、职教、技术服务
Equipment & Manufacture, Electro-Mech., Vocational Education, Tech Service

美国教育结构 Education System in USA



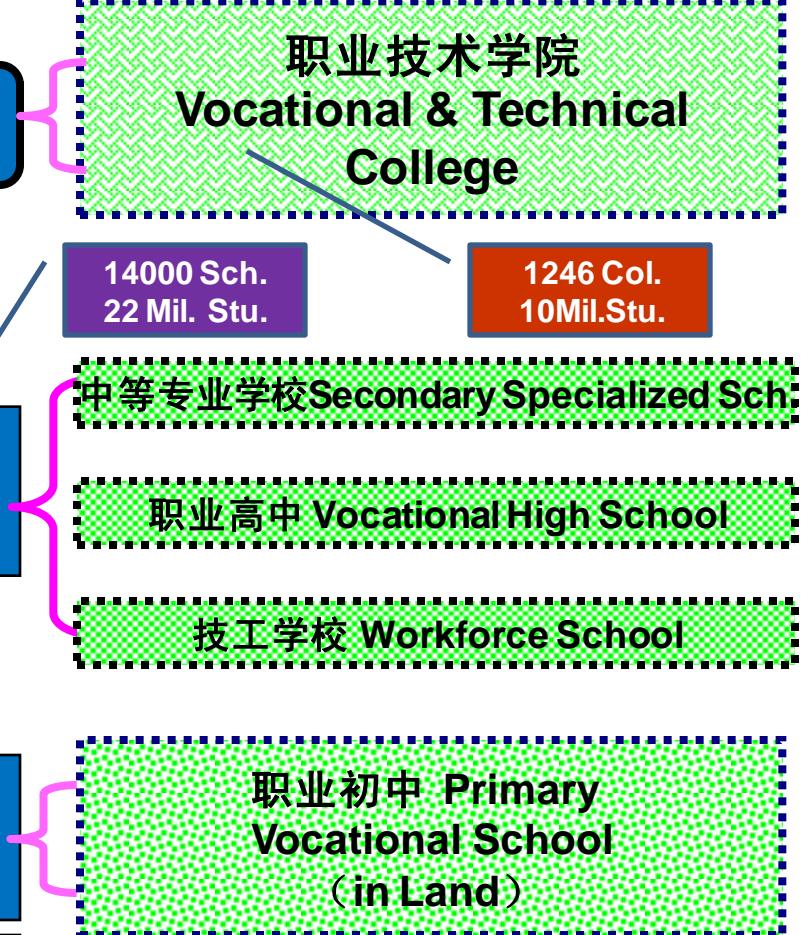
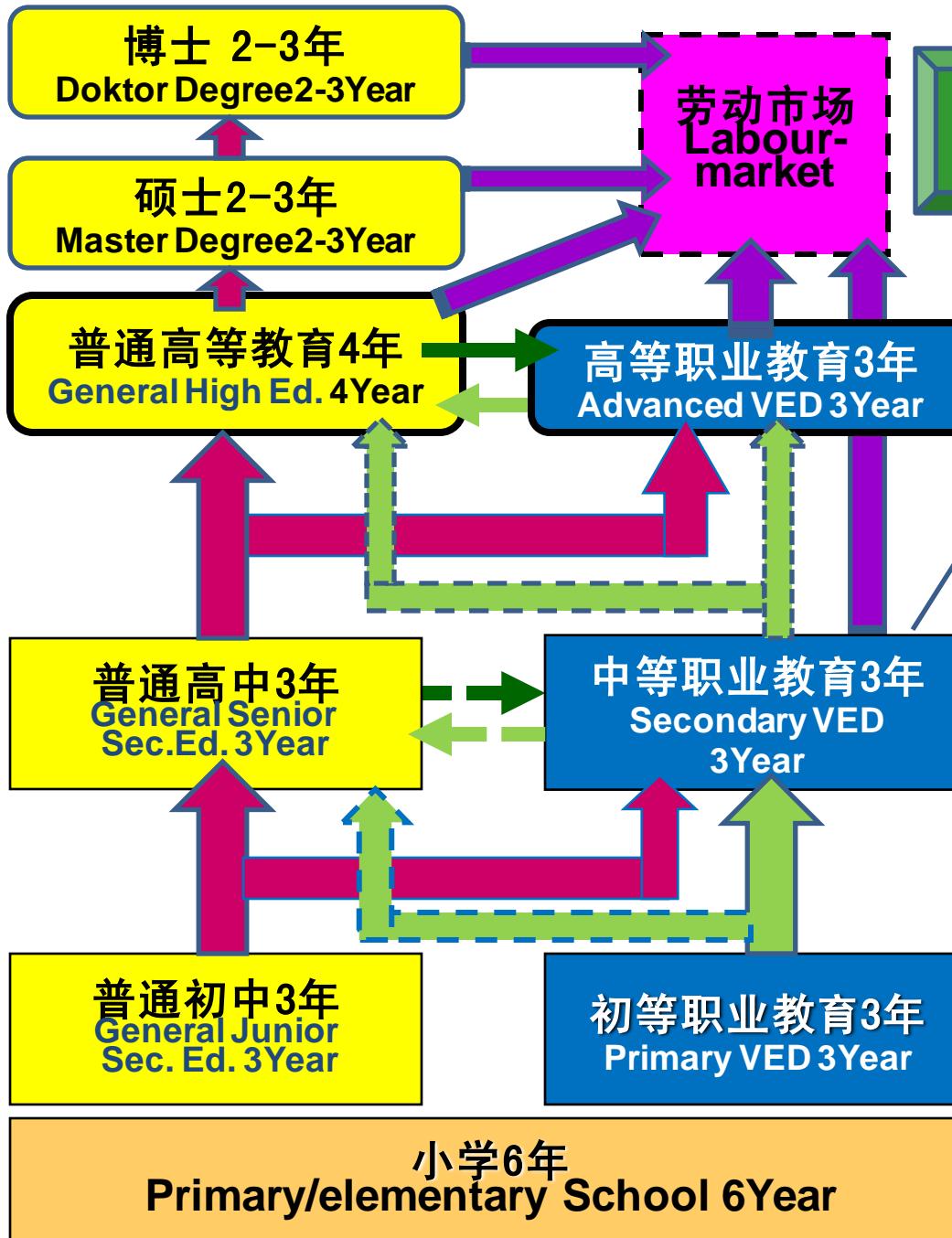
德国教育结构

Education System in Germany



中国教育结构

Education System in China



2008年经济危机的影响及职业教育应对措施

The impact of 2008 economic crisis and the countermeasures of TVET

	美国 USA	德国 Germany	中国 China						
制造业占GDP比例 Manufacturing proportion in GDP	18.46% (2010)	29% (2010)	35% (2010)						
制造业性质 Manufacturing types	高端 High-end	高端、中端 High/ Middle-end	中、低端 Middle/Low-end						
GDP增长率 The GDP growth rate	-3.5% (2009)	3.0% (2010)	1.9% 2011?	-4.7% (2009)	3.6% (2010)	2.4% 2011?	9.2% (2009)	10.4 (2010)	9.5% 2011?
失业率 Unemployment Rate ---15-24 age (OECD)	9.1% (2011) 16%(2012)	7%(2011) 7.5%(2012)	4.3% (城镇 city) (2011)						
职业教育 TVET	非系统性 No Systematic(?)	系统性 Systematic(Dual System)	系统性 Systematic(Sec.+High) Modern VE						
应对措施 Countermeasures	1.投资社区学院120亿美元; \$12 Billion investment in Community Colleges; 2.美国制造业促进法; U.S. Manufacturing Promotion Act 3.生涯与技术教育蓝图项 目 A Blueprint for Transforming Career and Technical Education (CTE)	1.联邦教育部与联邦经济部 2011年启动提高职业教育吸引 力和强化“双元制”职业教育 战略行动; The TVET strategic action for improving the attractiveness of TVET and strengthening the dual system launched by Federal Ministry of Education and the Federal Ministry of Economics in 2011 2.建立德国国家职业资格框架 和统一的职业教育学分体系 (ECVET)。 To establish the National Qualifications Framework and ECVET	1.2010-2020教育发展纲要“大 力发展职业教育”; To develop TVE vigorously in <i>National Long-term Education Reform and Development Plan (2010-2020)</i> 2.建立中高职协调发展现代职 业教育体系。 To establish a modern vocational education system for coordinated development of secondary and higher vocational education						

实体经济+职业教育 Entity Economy + Vocational Education

去工业化必然去职业教育化

e-industrialization—

e-vocational educationazation

再工业化必然再职业教育化

Re-industrialization—

Re-vocational educationazation

重振制造业 revitalizing manufacture industry

非重复制造业 non-repeated manufacture industry

例如 for example

数字制造 Digital manufacture, 新能源 new energy

怎样解决
中国现代化
进程中诸多
难题？
What is the
solution for
China to
solve the
tough
problems
on it's way
towards
moderniza-
tion?

每年新增人口2000万左右
Population increase:
20 Million / Year

每年新增适龄劳动力2000万以上
Workforce increase:
20 Million /Year

每年新增进城劳动力2000万以上
Migrant Workers increase:
20 Million /Year

经济发展
Economic
Develop-
ment

社会和谐
Social
Harmony

教育公平
Educational
Equity

职业
教
育
VOCATIONAL
Edu.

就
业
JOB

中国应对战略 China Coping Strategies

教育规划纲要 Education Development Planning

人才规划纲要 Talents Development Planning

科技规划纲要 Research Development Planning

转变经济发展方式 调整经济结构

Change the mode of economic development & structure

工业化、信息化、城镇化、
市场化、国际化
Industrialization
informationalization
urbanization, marketization
& internationalization

人口压力
Population pressure
资源压力
resource pressures
环境压力
environmental pressures

经济建设、政治建设、文化建设
社会建设、生态文明建设
Economic, political, cultural,
social, and ecological
development

科技进步日新月异
Rapid Technological Advances

人力竞争日益激烈
Intensive Competition of Talents

世界多极化 经济全球化
World's Multi-polarization, Economy Globalization

教育中长期规划产生背景
Background of Educational Planning 2010-2010

第六章 职业教育 Part 6 Vocational Education

战略地位：大力发展职业教育

Strategy: Vigorously develop vocational education

到2020年，形成适应经济发展方式转变和产业结构调整要求、体现终身教育理念、中等和高等职业教育协调发展的现代职业教育体系；

满足人民群众接受职业教育的需求，
满足经济社会对高素质劳动者和技能型人才的需要。

Till 2020, The TVET system should be able to
To adapt to changes in economic development and to industrial structural
adjustment requirements Reflect the concept of lifelong education
Harmonize the development in vocational education
at secondary & tertiary level ;

so such a modern TVET system will meet the needs of people for vocational
education; and the demands of economic and social development
on qualified labors and skilled workers.

调动行业企业的积极性

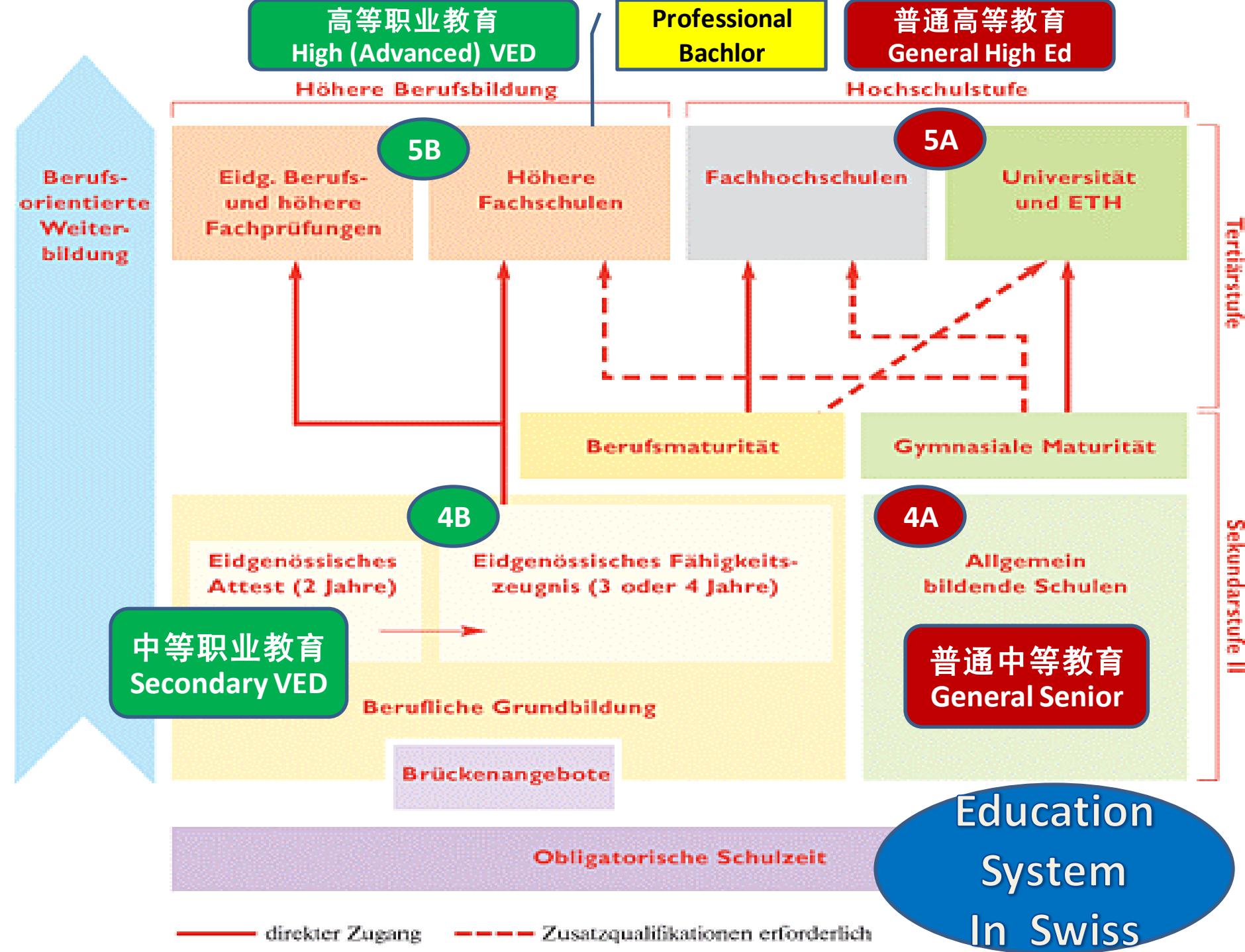
Mobilize the enthusiasm of
industries & enterprises in TVET

加快发展面向农村的职业教育

Accelerate the development of
vocational education in rural areas

增强职业教育吸引力

Enhance the attractiveness
of TVET



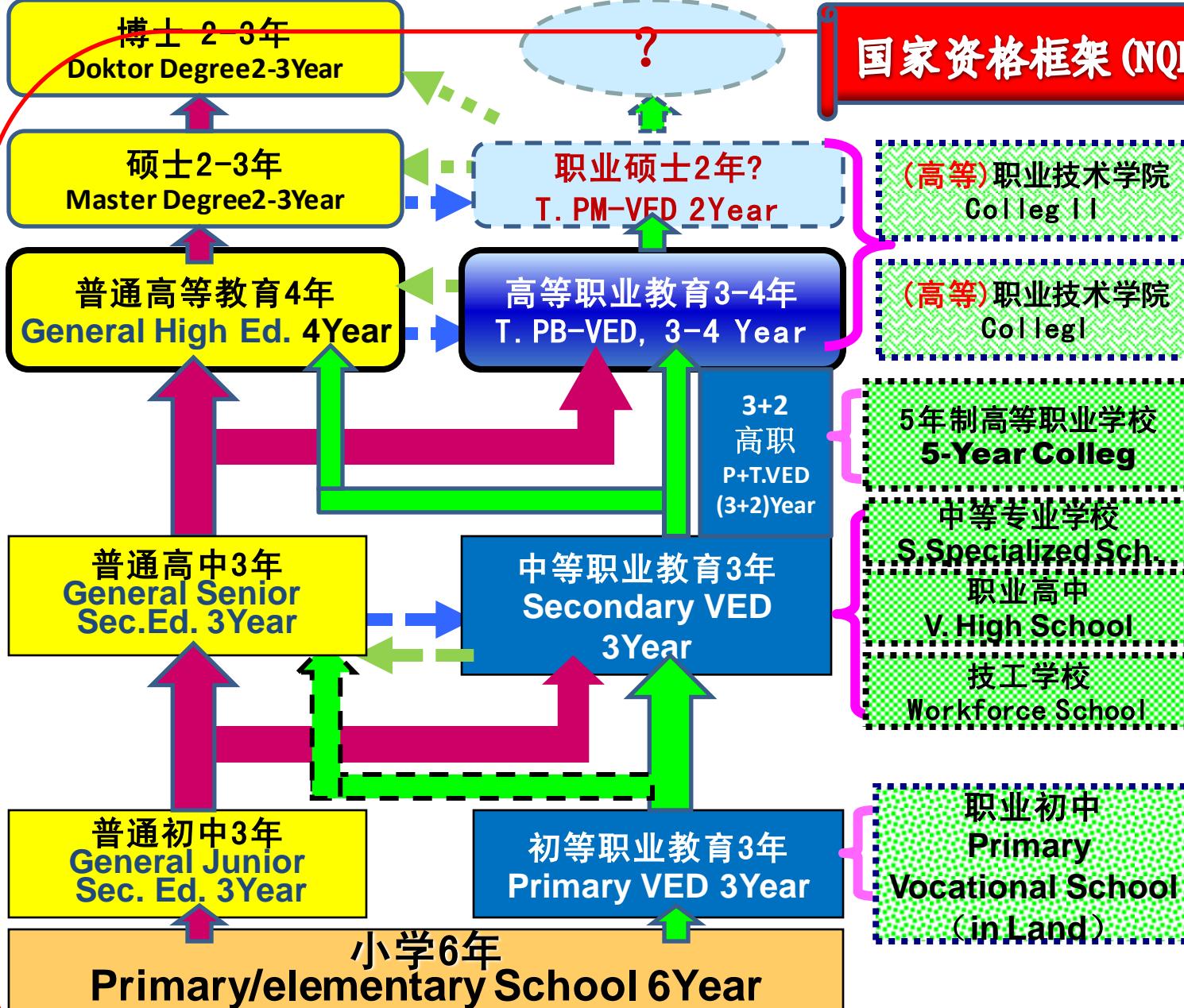
劳动市场 Labour market

国家职业资格制度 NVG

正规学习 in-formel

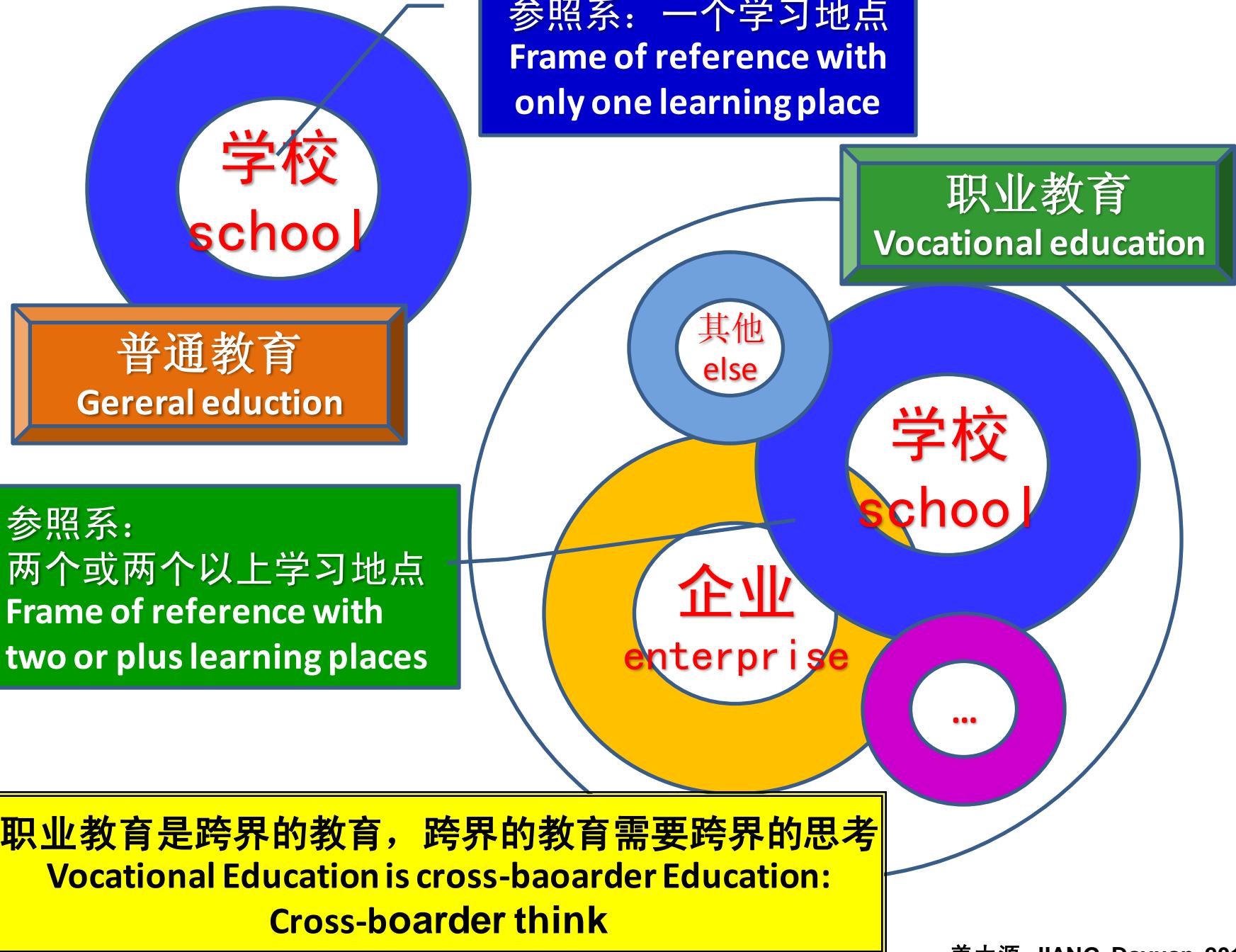
非正式学习 Non-formel

国家资格框架 (NQF)

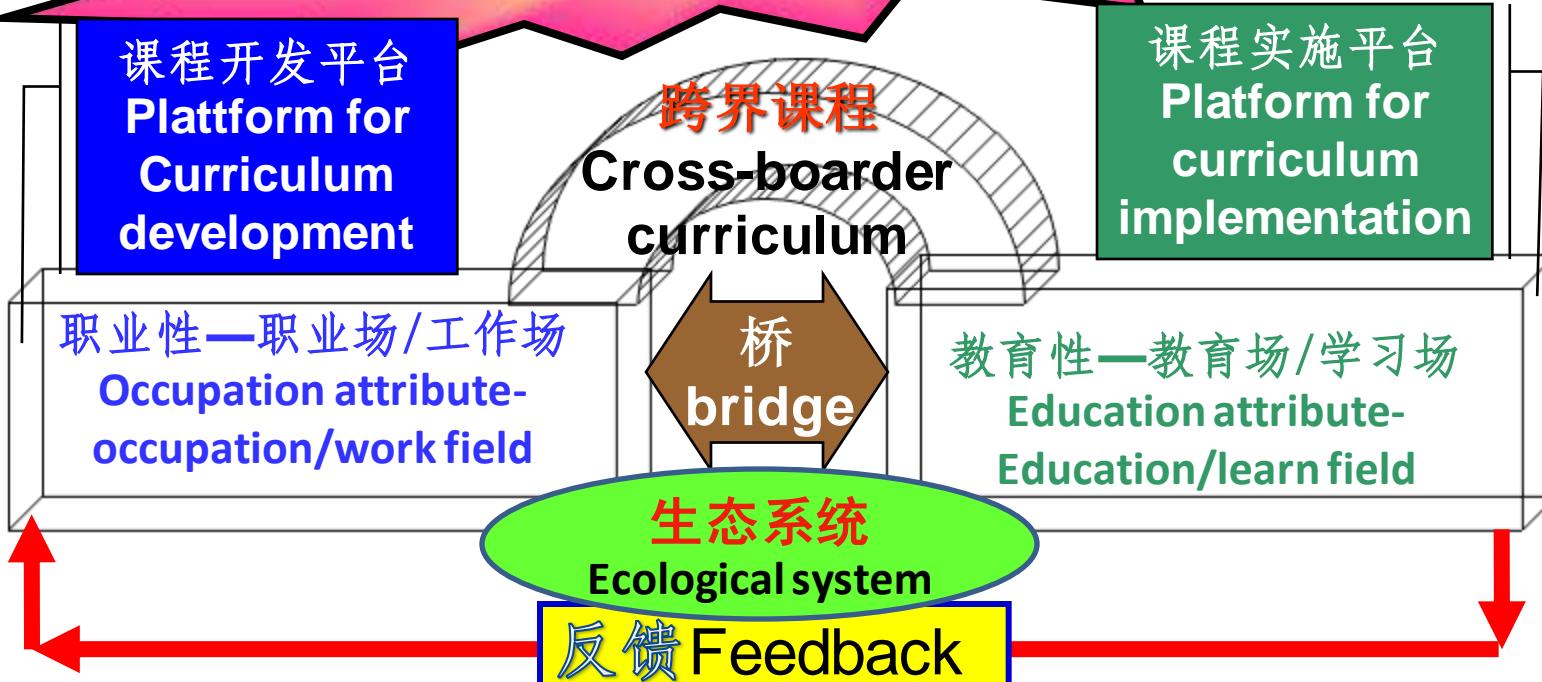


中国教育体系构建设想

Education System Conceive China



课程始终是人才培养的核心
Course is the core of all kinds of education



工作过程系统化课程开发的宗旨

Object of work-process-systemization based Curriculum(WPS)

以就业为导向、以职业为载体的人的全面发展

Employment/Job driven, service focused human development of all round

工程机械CAD/CAM Machine-CAD/CAM

工作过程系统化课程 WPS-Curriculum

Walk;
unit

载体：零件（任务）

Normal
part

学习情境1
(40学时)
常用件
CAD/CAM



Axis
sleeve

学习情境2
(30学时)
轴套类零件
CAD/CAM



Coil
cap

学习情境3
(20学时)
盘盖类零件
CAD/CAM



Fork

学习情境4
(20学时)
叉架类零件
CAD/CAM

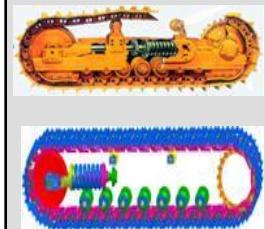


Ele-
ment

学习情境5
(40学时)
部件装配
CAD



学习情境6
(20学时)
行走装置总装
CAD



济宁职业学院 Colleg f. Voc.& Tech.

这是一个最好的时代，
It was the best of times,
也是一个最坏的时代。
**it was the worst
of times .**

《双城记》 **A TALE OF TWO CITIES**
——查尔斯·狄更斯 **Dickens, Charles**

谢 谢 Thank You

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