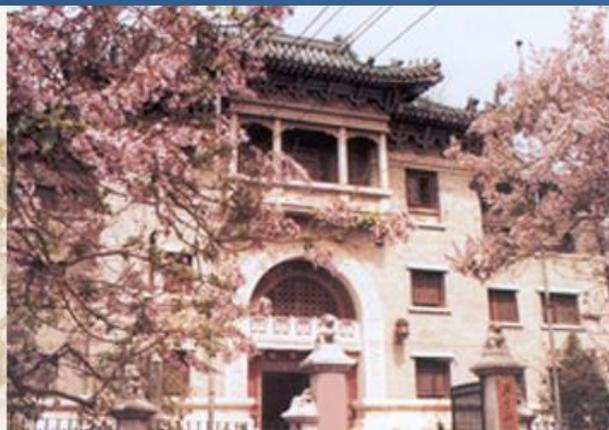


中国MOOCs建设与发展

郑勤华

zhengqinhua@bnu.edu.cn

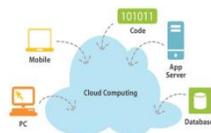
北京师范大学远程教育研究中心



互联网+带来的教育变革

新的基础设施

云、网、端一体化的数字化、智能基础设施



新的生产要素

数据与信息资源，数据已成为现代企业最核心的资产



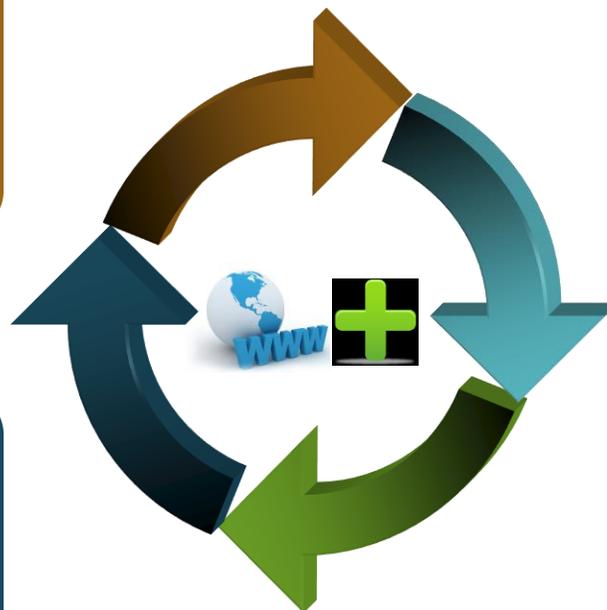
新的社会空间

虚实融合的生存空间，线上线下融合业态



新的分工形态

实时协同的通讯网络，大规模社会化协同



互联网+引领世界教育变革

- **教育理念：**全面发展、终身学习、整合协同育人。
- **培养目标：**拓展社会批判、跨文化认知和国际化能力，深化对生命、生态、环境的理解；个性化卓越。
- **教育体系：**多样性和差异性，建立开放多元的体系。
- **培养模式：**多专业跨专业培养，通专融合、产学研结合，发展实践性课程。
- **教学方法：**基于**互联网、MOOC和大数据的教学改革，自组织过程，情感隐喻（对话与体验）**。

■ 联合国《教育2030行动框架》：

- ✓ 确保全纳、公平的优质教育
- ✓ 人人获得终身学习的机会

■ 后现代主义教育思想：

- ✓ 异质性：多元文化价值。
- ✓ 多样性：教与学的平等性，开放性。
- ✓ 公民性：培育具有批判能力、认可多元文化的公民。
- ✓ 复杂性：变化性，不可预测。

全球MOOC浪潮推动在线教育迅猛发展

- 2012年MOOCs热潮席卷全球，2013年在中国刮起“飓风”，国内一批知名高校相继加盟三大MOOCs平台，中国自己的MOOCs平台与在线课程建设如火如荼。
- MOOCs在中国的快速发展，极大促进了中国在线教育的快速崛起。
开放资源—优质课程 优质学习者上线 关注学历—关注学习体验 标准化—个性化



中国MOOCs建设成就

- 460余所高校建设的3200余门MOOCs上线课程平台
- 5500万人次高校学生和社会学习者选学课程
- 已有600多万人次大学生获得慕课学分
- 我国慕课数量已列世界第一位，有201门慕课登陆国际著名课程平台

——宋毅 “第五届MOOC与高校计算机课程建设研讨会”

主页 > Language Learning > Other Languages

Chinese for Beginners

关于此课程: Nowadays, there is an increasing number of people who are interested in Chinese culture and language. And it is useful to know about the language when coming to China for travel or business. This is an ABC Chinese course for beginners, including introduction of phonetics and daily expressions. After taking this class, learners can have a basic understanding of Chinese Mandarin and make basic

▼ 更多

制作方: Peking University



教学方: Xiaoyu Liu, Associate Professor
School of Chinese as A Second Language, Peking University



教育信息化与MOOCs战略研究



高等教育信息化发展蓝图



以MOOCs为契机的在线教育促进高等教育改革与发展的方向

- 1、教育信息化与高等教育改革趋势研究
- 2、MOOCs的创新本质研究
- 3、互联网模式下的新型高等教育生态体系研究



实现发展蓝图的有效路径



构建新型高等教育生态体系的有效路径和实践方法

- 4、以MOOCs为代表的在线教育教与学模式研究
- 5、在线教育（MOOCs）的技术发展前沿研究
- 6、在线课程的建设策略研究
- 7、MOOCs的质量保证与高等教育学分体系研究



战略实施规划



中国教育信息化与MOOCs战略实施方案

- 8、MOOCs促进高等教育变革的行动方案

中国MOOCs建设与发展调查研究



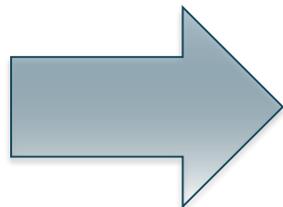
高等教育信息
化发展蓝图



实现发展蓝图
的有效路径

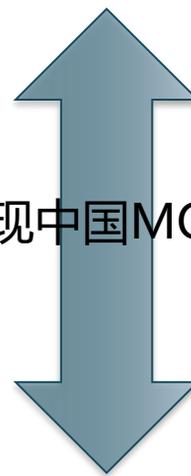


战略实施规划



从教与学的角度呈现中国MOOCs建设与发展的现状

信息化建设实践的实证体现



MOOCs发展战略研究的必备基础

探究MOOCs的教学与组织模式



14个平台、1388门课程



探究MOOCs的教学与组织模式



问卷调查 42所高校, 59人



探究MOOCs的教学与组织模式



mooc学院 mooc.guokr.com 《MOOCs学习者大调查》

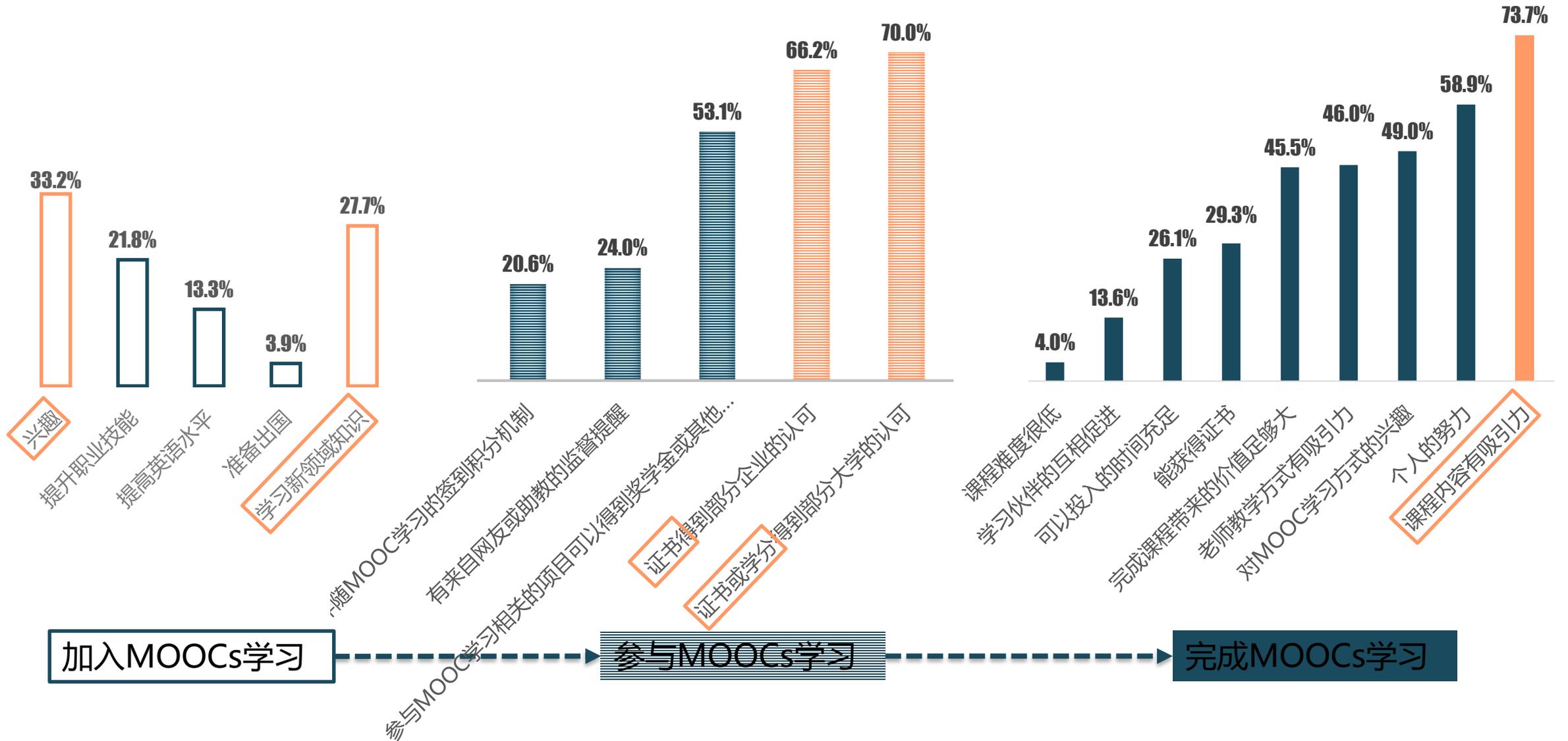
22895名学习者



调查维度

- 学习者的基本信息
- MOOCs学习经历
- 学习偏好
- 学习动机
- 交互参与
- 学习满意度
- 学习困难
- 经常使用的平台和工具

中国MOOCs学习者



组织模式多样构建中国自有平台和课程体系

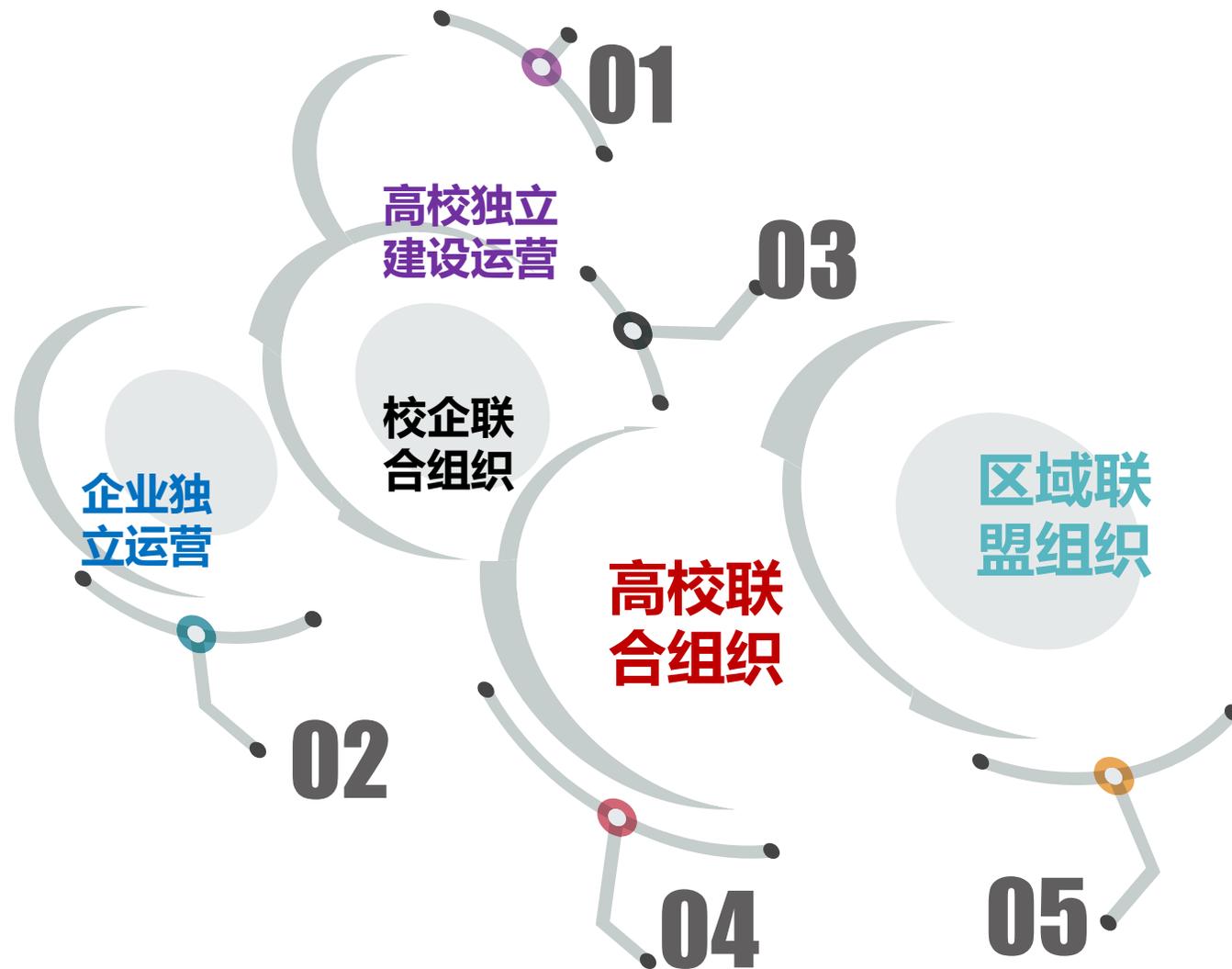
学堂在线

网易云课堂

华文慕课

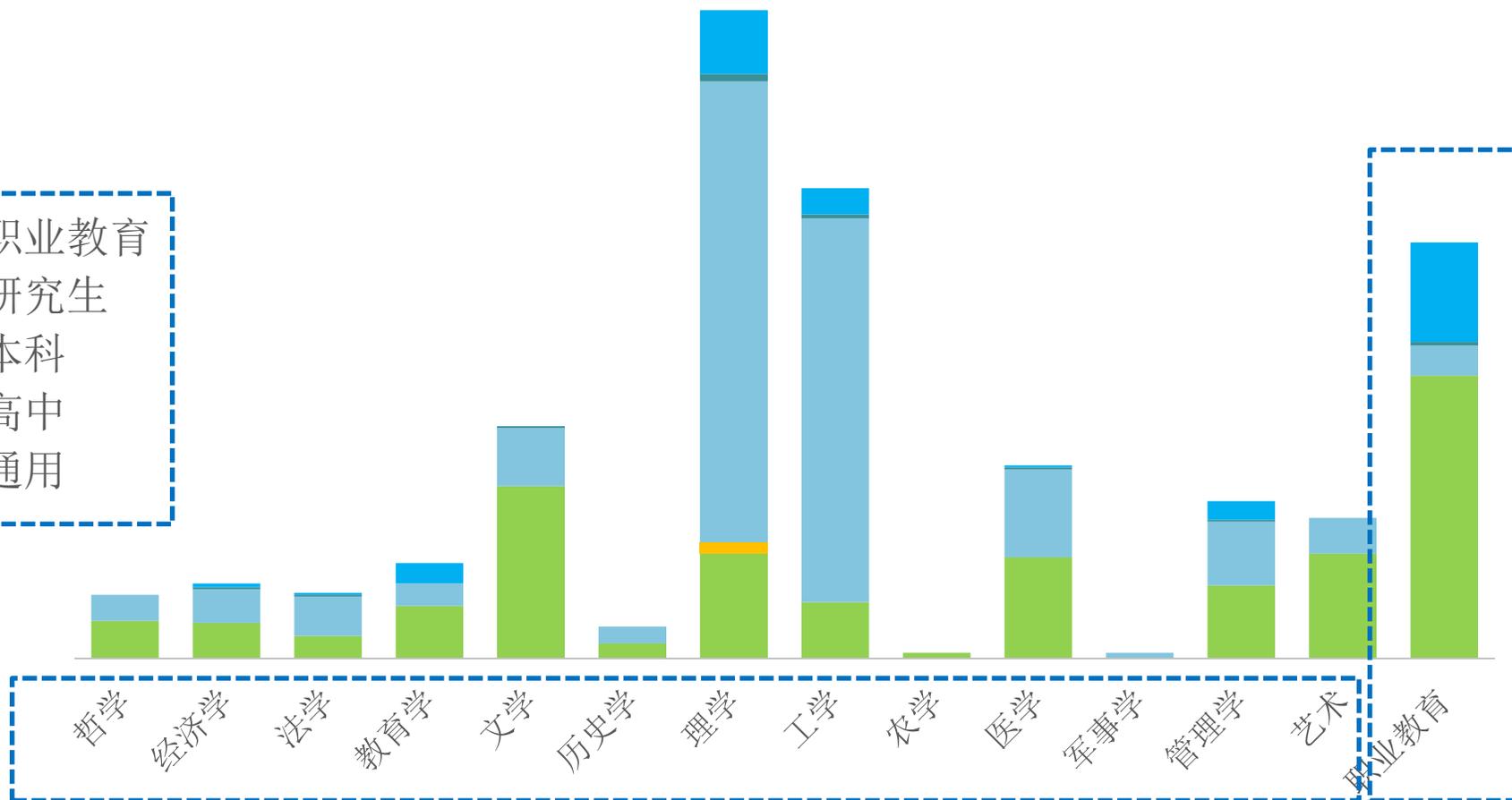
上海高校课程资源共享平台

东西部高校共享联盟平台



MOOCs课程丰富，基本覆盖全体系

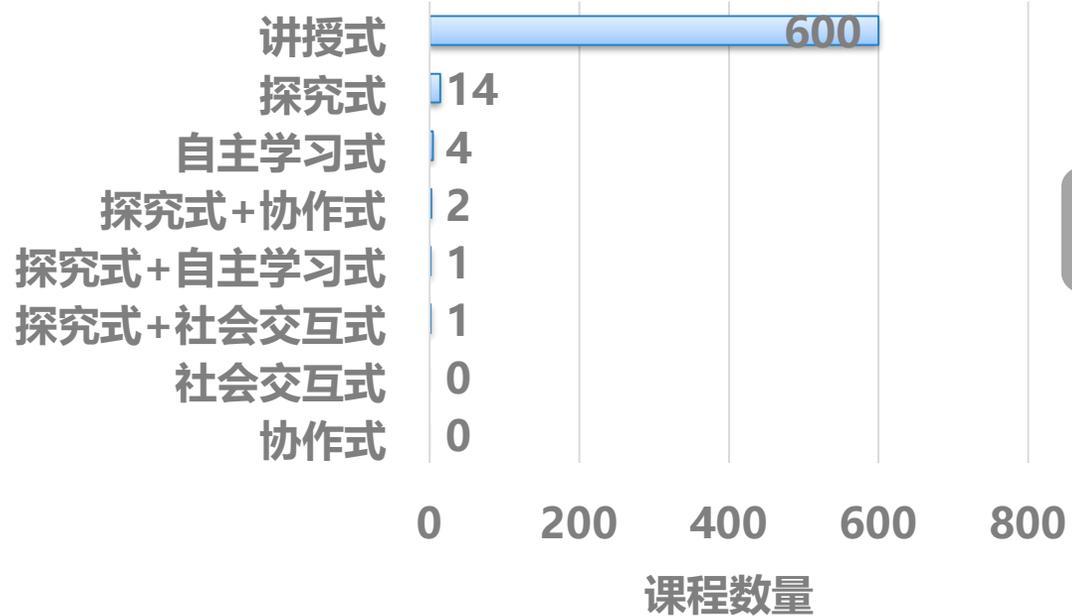
涵盖各类课程层次



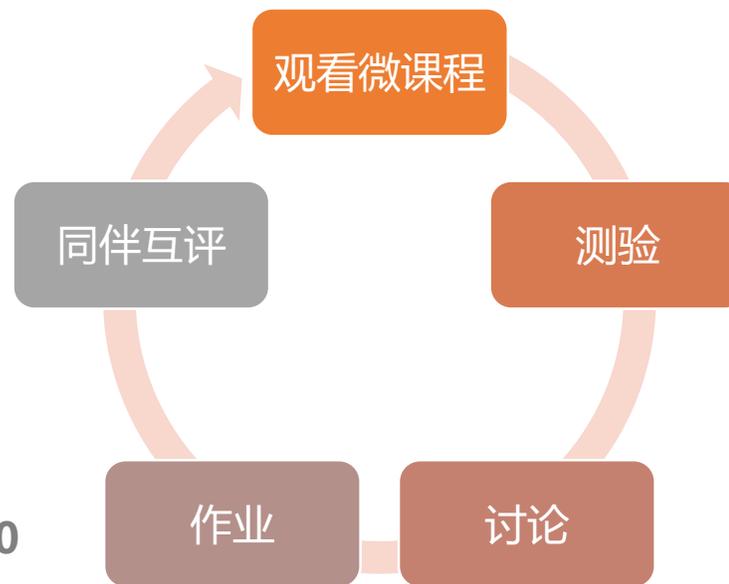
覆盖全部一级学科

关注在职人员专业技能提升

教学模式以讲授式为主



讲授式课程占**96%**



MOOCs的教學法

Deadline: You must submit this week's assignments by **December 3, 2017, 11:59 PM PDT.**

第五課：多質多法模型 (參考：第三章應用示范| 二、多質多法模型)

Upcoming session:
October 23 - February 4

Enrollment ends October 28

Enrolled

多質多法模型

Start Lesson

▶ 5.1 多質多法模型 33 min

測試

★ Quiz:
多質多法模型 8 questions

Quiz: 8 questions

- 1 point
1. 假設100個學生的分數並非正態分布，提供均值及標準差去描述數據是：(題目難度:*)
- A. 簡單、準確
 - B. 簡單、不準確
 - C. 不簡單、準確
 - D. 不簡單、不準確
 - E. 不簡單、完全準確

- 1 point
2. 在做結構方程分析選擇模型時，需要考慮甚麼因素？(題目難度:*)
- A. 只考慮簡潔性(parsimony)
 - B. 只考慮準確性(accuracy)
 - C. 只考慮用較少的變項(variable)
 - D. 只考慮用較多的參與者(participants)
 - E. 同時考慮簡潔及準確性

VA 1 LX 1 1 LX 7 2 LX 13 3 LX 19 4 LX 25 5
VA 1 LX 6 6 LX 12 7 LX 18 8 LX 24 9 LX 5 10
PA PH
1
1 1
1 1 1
1 1 1 1
1 1 1 1 1
0 0 0 0 0 1
0 0 0 0 0 1 1
0 0 0 0 0 1 1 1
0 0 0 0 0 1 1 1 1
0 0 0 0 0 1 1 1 1 1
OU AD=OFF IT=2000 SS SC

AD=Admissibility test
容許性檢查
(default=20)
IT = No. of iteration
迭代次數上限
(3 x t free para.)

18:21 / 33:13 版權所有 香港中文大學 伍志豪教授 KTHAU SEM p. 8

5.1 多質多法模型

Deadline: You must submit this week's assignments by **January 28, 2018, 11:59 PM PDT.**

期末考

測試

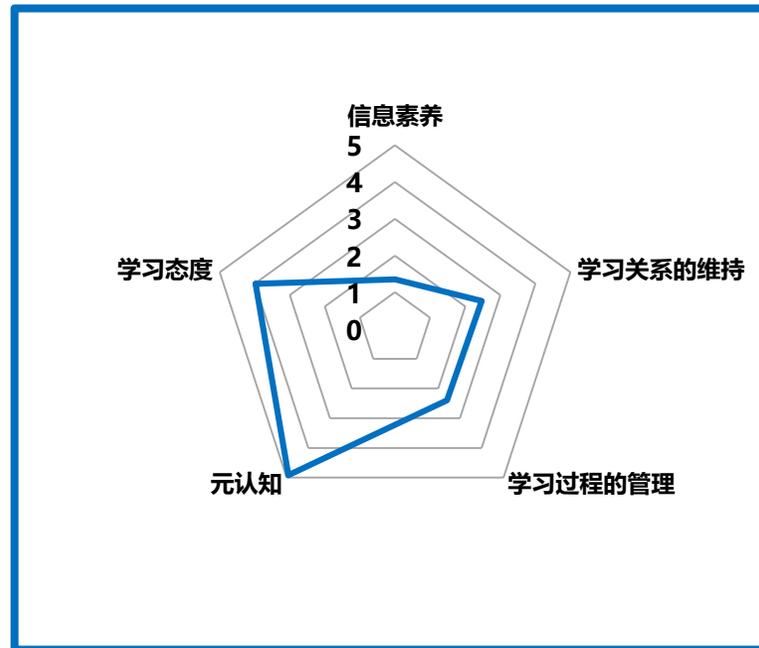
Start Lesson

★ Quiz:
期末考 20 questions

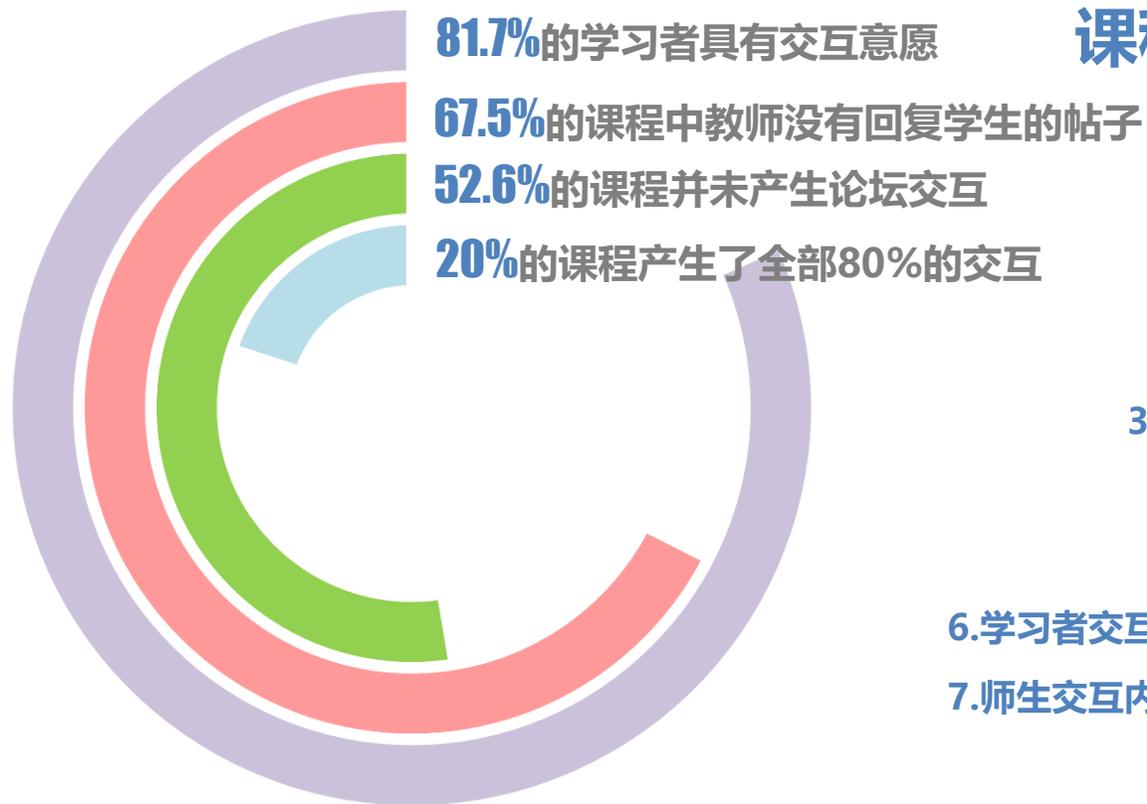
这种模式要求学生有良好的自主学习能力

但是

素养维度	平均值	方差	N
信息素养	1.35	1.10	2441
学习关系的维持	2.47	0.95	2441
学习过程的管理	2.40	1.99	2441
元认知	4.92	0.65	2573
学习态度	3.98	0.18	2574



中国MOOCs教学交互情况

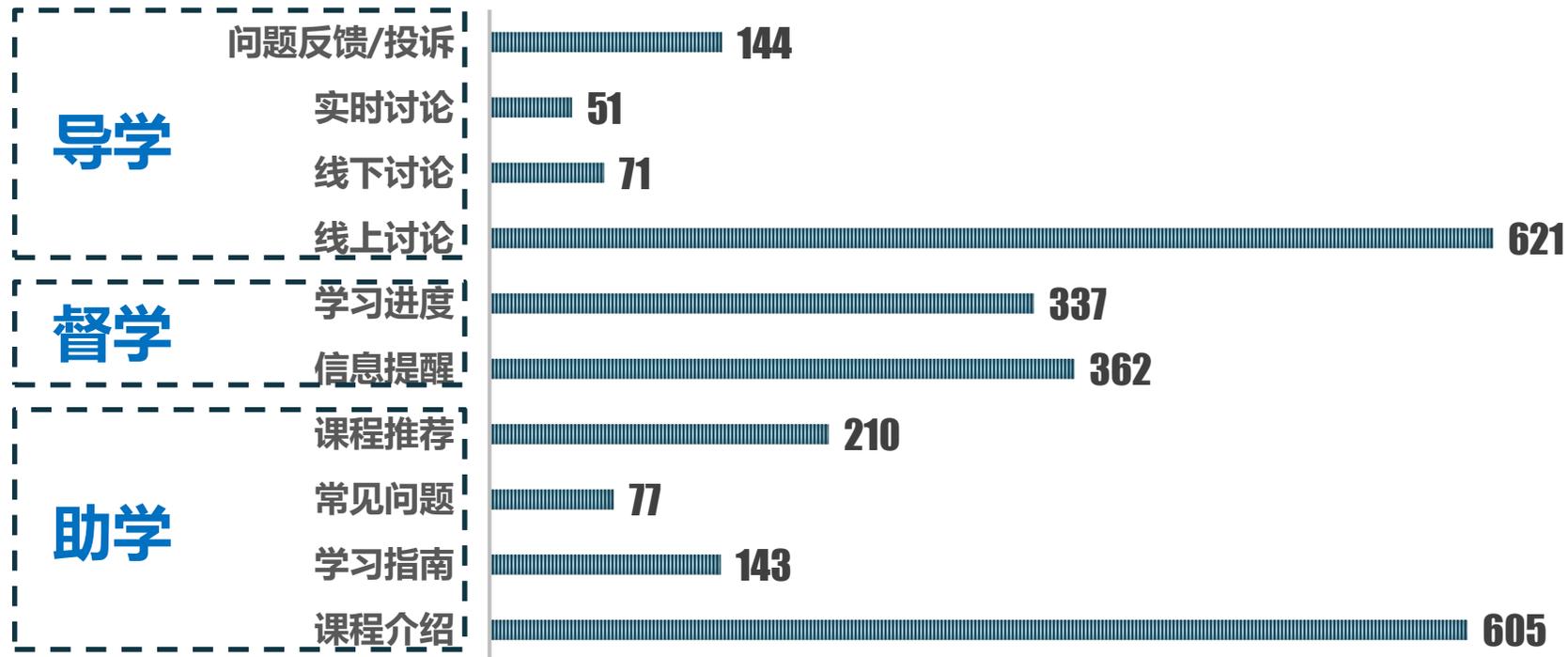


**课程总体交互水平偏低
且严重不平衡**

1

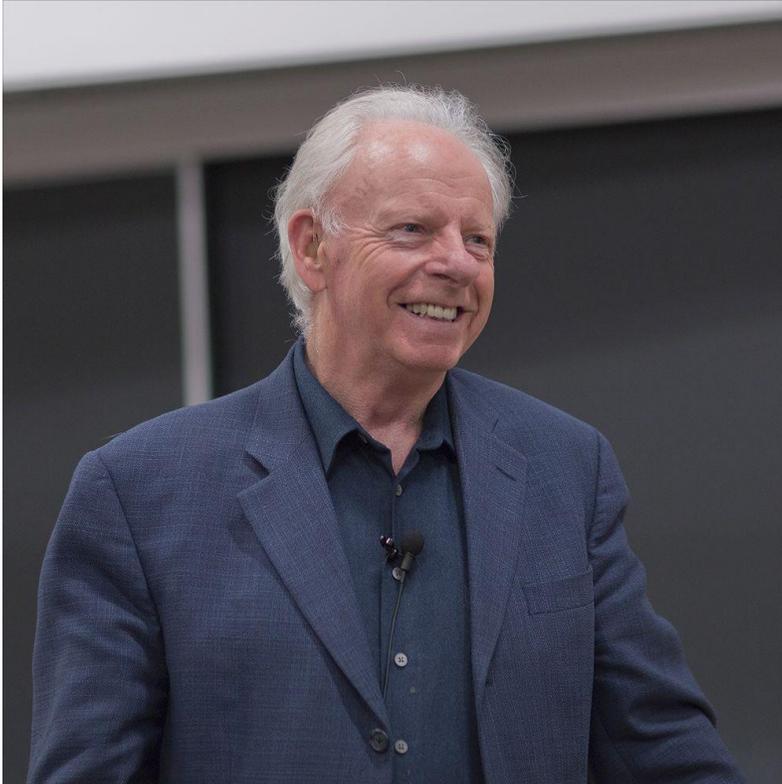
- 2.不同教学模式的课程交互状况差异较大
- 3.采用可汗学院式视频的课程交互水平较高
- 4.学习支持有助于促进交互
- 5.不同评价与认证方式课程差异较大
- 6.学习者交互方式需求多样化，但平台交互功能不完善
- 7.师生交互内容需求多样化，但教师的交互参与度不高

学习支持服务整体薄弱，缺少实时个性化支持



◆ 受制于学习者规模，现有MOOCs学习支持服务缺少实时或个性化的支持

MOOCs的教学法

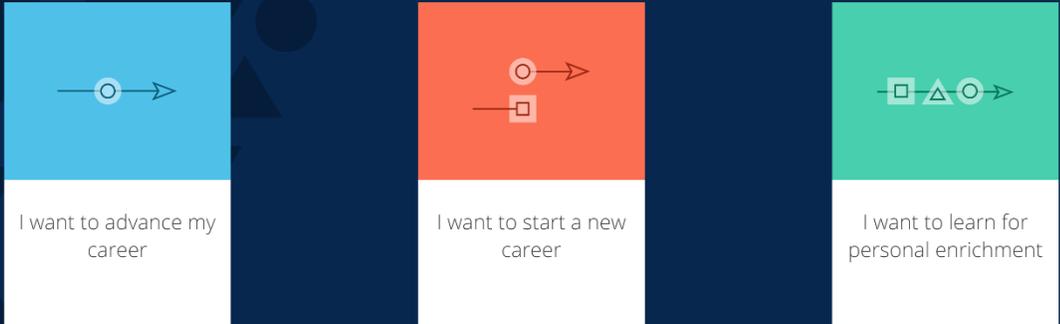


实际上到目前为止，xMOOCs采用的是一种“依赖信息传递、计算机对作业评分和同伴评价的非常古老的、过时的行为主义教学法”

MOOCs的一些变革

coursera

We're here to help you learn, grow, and succeed. Tell us what you'd like to achieve:



- I want to advance my career
- I want to start a new career
- I want to learn for personal enrichment

coursera

Back

What is the top skill you would like to learn?
You can choose topics in up to 3 of these categories:



- Arts and Humanities
- Business
- Computer Science
- Data Science
- Life Sciences
- Math and Logic
- Personal Development
- Physical Science and Engineering
- Social Sciences
- Language Learning

有指导的教学会谈——支持服务的变革

Sounds good! Starting a new career is such an exciting step.

What would you like to become? (select one)

 Data Scientist	 Data Analyst	 Data Engineer	 Machine Learning Engineer
 Full Stack Developer	 Front End Developer	 Back End Developer	 UI/UX Designer

多维的组合形成新的认证体系

My Coursera

Based on your goal to become a Data Scientist, we recommend the following courses. ...

Time: 9 months

Study 10 hrs/week and complete in 9 mo.



What you'll do as a Data Scientist:

- Extract insights from data and create data visualizations and products.
- Learn Python, R, SQL, experimentation, and machine learning.
- Earn around \$113k per year, depending on your location, experience, and company.



How you'll reach your goal with Coursera:

- Explore your course recommendations, which are endorsed by industry experts.
- Customize your program by hiding courses that cover familiar material.
- Start learning! Choose the courses most relevant to your goals, and take them at your own pace.

DATA SCIENTIST PREREQUISITE • 6 COURSES

Refresh your knowledge of Python and R programming to prepare for data science courses. No prior knowledge necessary.

Course 1: R Programming (17 hours total)

Part of Data Science Specialization • 约翰霍普金斯大学

Course 2: Programming for Everybody (Getting Started with Python) (9 hours total)

Part of 零基础 Python 入门 Specialization • 密歇根大学

Course 3: Python Data Structures (7 hours total)

Part of 零基础 Python 入门 Specialization • 密歇根大学

完全打造一个新的专业生态

DATA SCIENTIST BEGINNER • 7 COURSES



Learn data cleaning and manipulation, exploratory data analysis and visualization, and regression modeling using R, SQL, and Git. Prior knowledge in Python and R is recommended.

[SEE COURSES](#)

DATA SCIENTIST INTERMEDIATE • 6 COURSES



Progress to applied machine learning and text mining using the PyData Stack. Prior knowledge from the Data Scientist Beginner course list is recommended.

[SEE COURSES](#)

DATA SCIENTIST ADVANCED • 6 COURSES



Solve 100 algorithmic challenges. Write and test efficient code to build, deploy, and monitor Data Science pipelines. Prior knowledge from the Data Scientist Intermediate course list is assumed.

[SEE COURSES](#)

DATA SCIENTIST ELECTIVES • 7 COURSES



Explore elective topics to further your data science expertise, including econometrics, causal inference, and managing teams of data scientists. Prerequisite knowledge varies by content.

免费的属性正在悄悄变化

Overview

Preview

FAQs

Pricing

La négociation salariale

Enroll

Financial Aid is available for eligible learners who cannot afford the course fee. [Learn more about financial aid.](#)

Language: French

How To Pass: Pass all graded assignments to complete the course.

About this course: Que vous cherchez à négocier un salaire, une embauche, un nouveau poste, une augmentation, un stage ou votre départ de l'entreprise, ce cours est pour vous.

Il s'agit d'un cours de négociation tel que je donne à l'École Polytechnique.

La négociation salariale

\$290 USD

Your course fee includes:

- ✓ Access to course materials, including videos, readings, and discussion forums
- ✓ Access to graded assignments
- ✓ Final grade at the end of the course
- ✓ Shareable Course Certificate

Continue to enroll

Coursera Pilots Paid-Only Courses in June 2016

Professional Education

CLEAR ALL

Refine your search

Availability

Current	28
Starting Soon	5
Upcoming	1
Self-Paced	27
Archived	5

Subjects

Art & Culture	2
Biology & Life Sciences	3
Business & Management	14
Chemistry	1
Computer Science	8
Data Analysis & Statistics	2
Design	1
Economics & Finance	19
Education & Teacher Training	1
Electronics	2

Courses & Programs

Professional Education

Schools & Partners

Professional Education

SmithsoniaX ED1.1x Teaching Historical Inquiry with Objects Starting Soon Starts: June 28, 2016	ACCA FAB-F1.x Accountant in Business Starting Soon Starts: July 4, 2016	ACCA FFA-F3.x Financial Accounting Starting Soon Starts: July 4, 2016
ACCA FMA-F2.x Management Accounting Starting Soon Starts: July 4, 2016	IEEE TOGAF.x Enterprise Architecture and Essentials of The Open Group Architecture Framework... Starting Soon Starts: July 14, 2016 - Self-Paced	RiceX LabSafety.1x Lab Safety: The Interactive Game of Don't Endanger the Owls Upcoming Starts: September 27, 2016

EdX Started Paid "Professional Education" Courses since 2014

收费成为了一种趋势，甚至促进学习？



From: Coursera Partners Conference 2016

R Programming

Part of a 10-course series, Data Science Specialization

Subscribe to the Data Science Specialization to access this course. When you have completed the course in your Learning Path, we encourage you to cancel your subscription and enroll in your next course.

- ✓ **7-day free trial, then ¥ 320 per month.**
Go as fast as you want - the faster you go, the more you save.
- ✓ **Cancel anytime.**
No penalties - simply cancel when you've completed the course in your Learning Path, or before your free trial ends if it's not right for you.
- ✓ **Certificate when you complete.**
Share your Course Certificate on your resume, LinkedIn, and CV.

[Start Free Trial](#)

微专业和应用型的收费体系

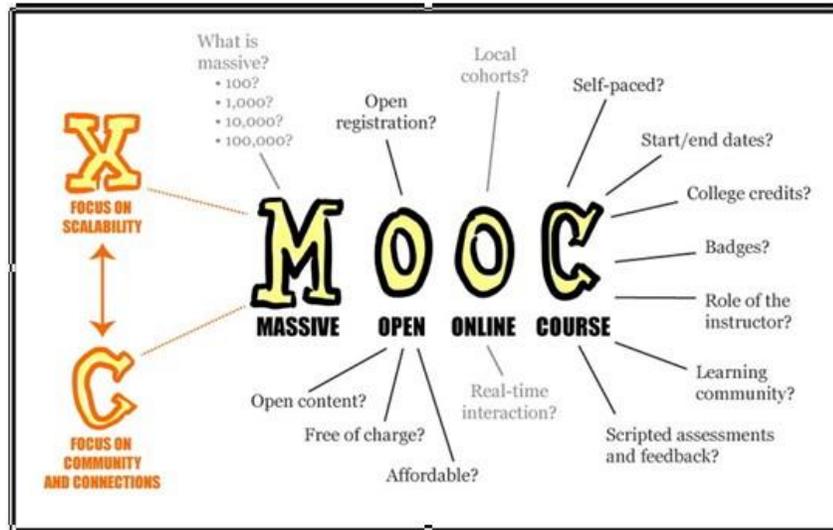


Micro Degree in Netease Earn Over 1 million in First Term



A PPT Course Gathered 48,000 Paid Users

xMOOCs: ‘互联网+’ 在线教育服务模式



- 跨越学校界限学习课程
- 碎片化的高等教育服务

回来看大规模对学习意味着什么？



OPEN

SUBJECT AREAS:
COMPUTATIONAL
SCIENCE
INFORMATION THEORY AND
COMPUTATION

Received
29 April 2014

Structural limitations of learning in a crowd: communication vulnerability and information diffusion in MOOCs

Nabeel Gillani¹, Taha Yasserli², Rebecca Eynon² & Isis Hjorth²

¹Department of Engineering Science, University of Oxford, Parks Road, Oxford OX1 3PJ, UK, ²Oxford Internet Institute, University of Oxford, 1 St. Giles, Oxford OX1 3JS, UK.

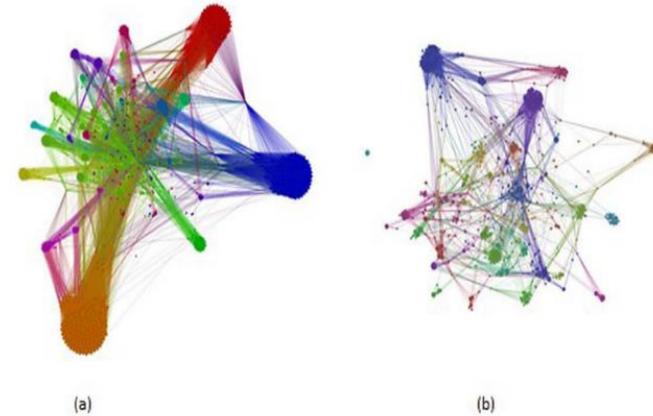


Figure 1 | The observed (a) and derived (b) communication networks for the Study Groups sub-forum. Here, we can see the impact of link filtration on network properties such as modularity score, which equals 0.62 and 0.80 for a and b, respectively. Colours correspond to the detected communities.

- 学生之间的交互模式和结构是什么？
- 交互模式和结构对于信息和知识的传播有什么影响？

联通主义的MOOCs

学习者自主决定如何参与学习

课程由参与者共同开发

创建和分享意会后的生成性内容

通过网络传递课程内容

学习者有自己的交互空间，并贡献内容

课程内容碎片化

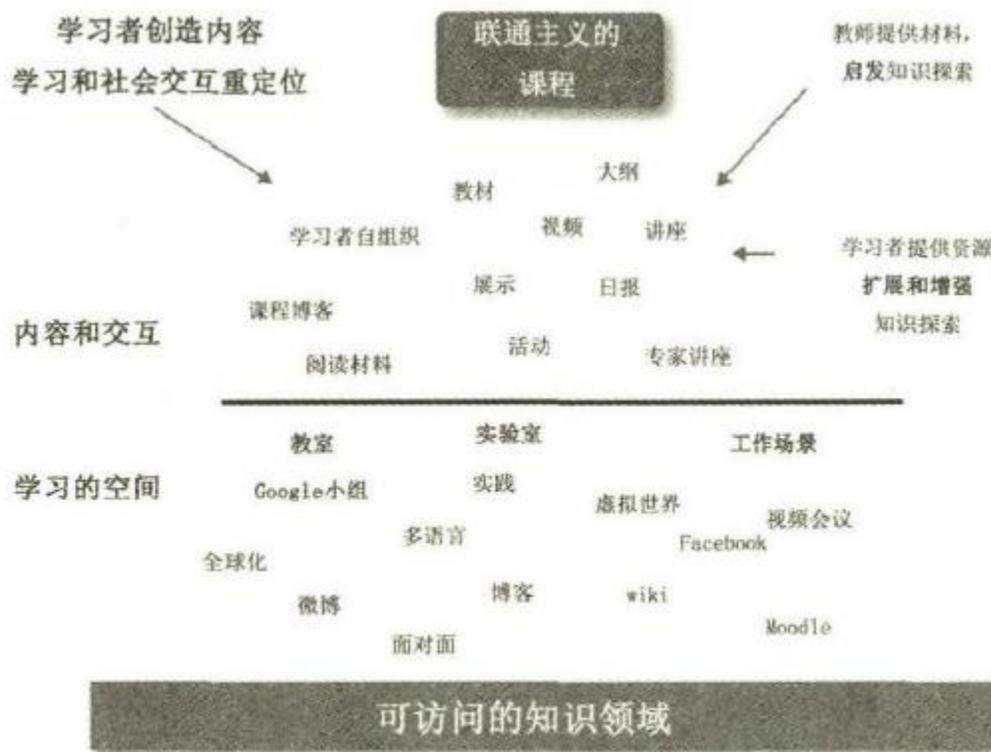


图4 联通主义的课程结构 (Siemens, 2011a:82)

联通主义的在线课程 cMOOC

Personal Learning Environments & Knowledge 2012 (<http://connect.downes.ca/>)



PLENK2010

Personal Learning Environments
Networks and Knowledge 2010

home discussion wiki the daily blog live sessions recordings about

YOU ARE NOT LOGGED IN. [\[LOGIN\]](#) [\[REGISTER\]](#)

Welcome to the Course



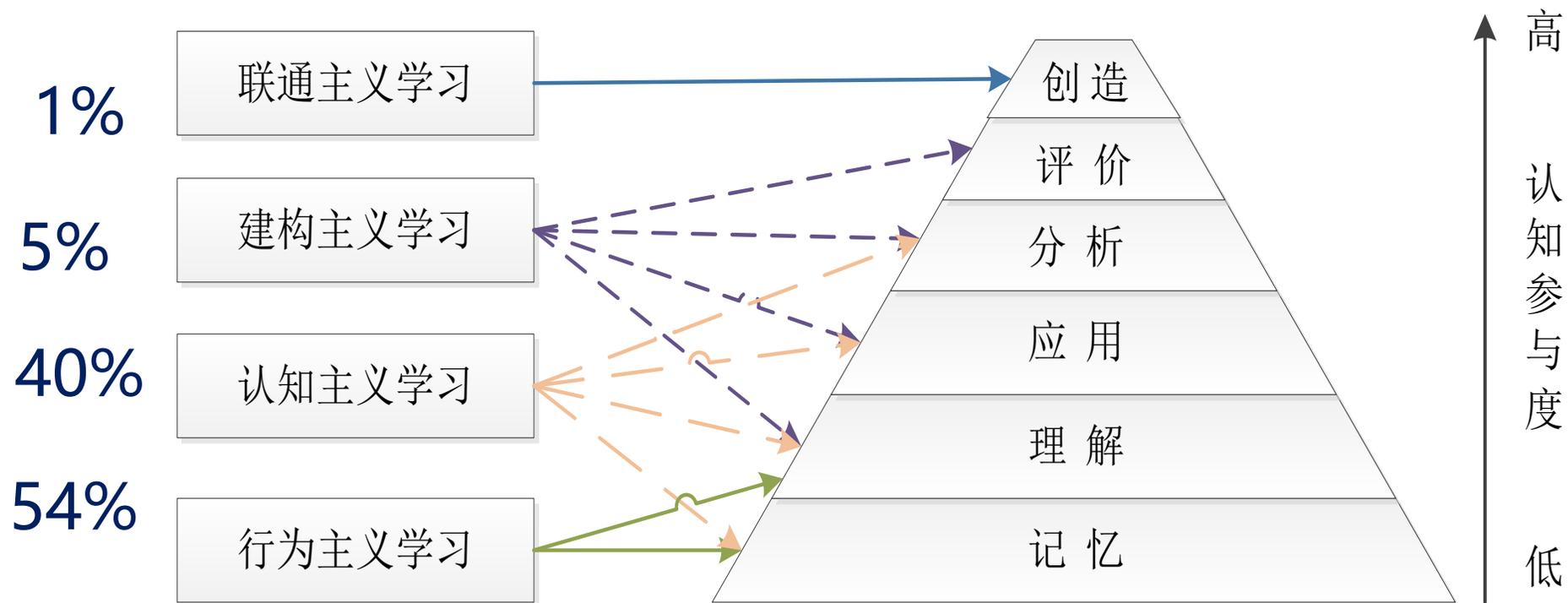
PLENK 2010

Schedule

- WEEK OF...
12TH SEPTEMBER 2010
[A TOUR OF PLEs AND PLNs](#)
- 19TH SEPTEMBER 2010
[CONTRASTING PLEs WITH LMSs](#)
- 26TH SEPTEMBER 2010
[THE NEXT/EXTENDED WEB](#)
- 3RD OCTOBER 2010
[PLE/PLN AND LEARNING THEORIES](#)
- 10TH OCTOBER 2010
[EVALUATING LEARNING IN PLE/NS](#)
- 17TH OCTOBER 2010
[USING PLEs SUCCESSFULLY](#)

基于自组织和教育对话的未来学习

认知目标分类



有没有可能实现大规模+个性化



OUR APPROACH ABOUT RESOURCES SIGN IN

BUILD WITH KNEWTON

A Path for Every Student

Knewton is now offering affordable, adaptive course solutions in higher education

LEARN MORE >

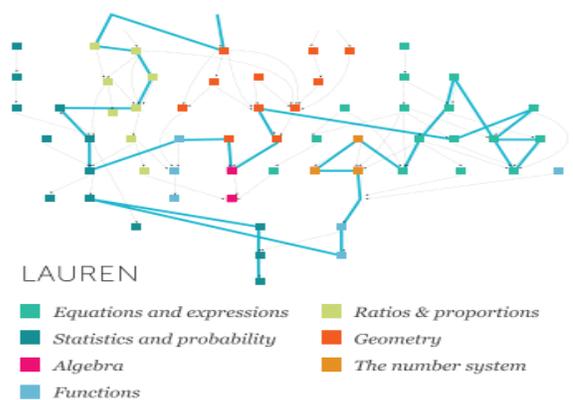


FIGURE D.

Lauren's personalized learning pathway

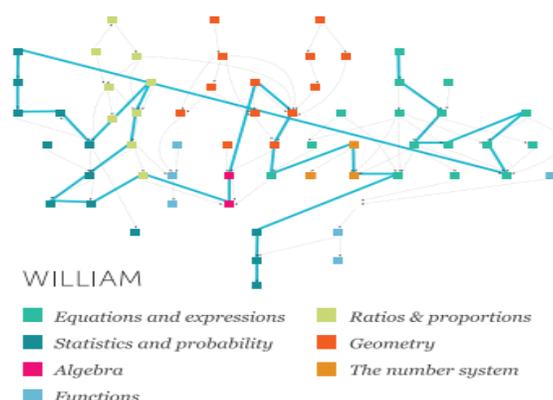
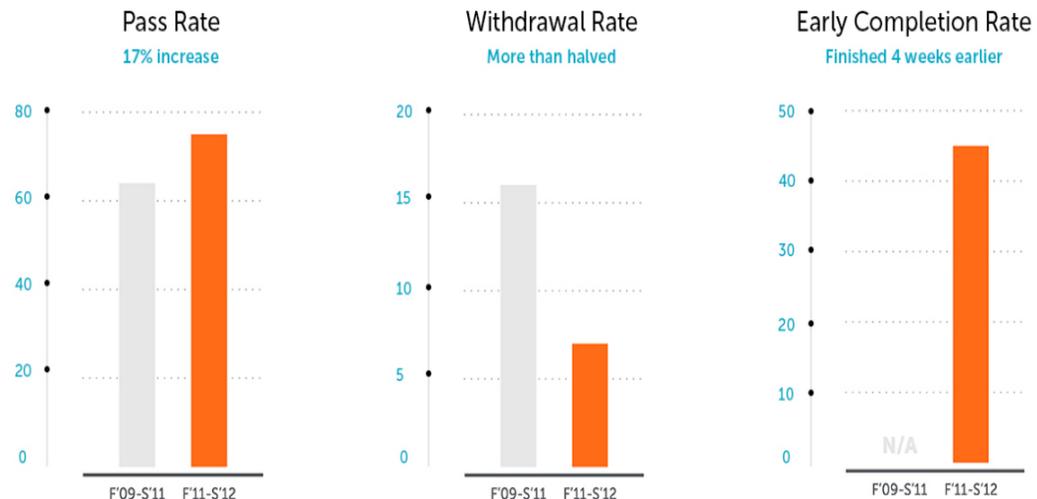


FIGURE E.

William's personalized learning pathway

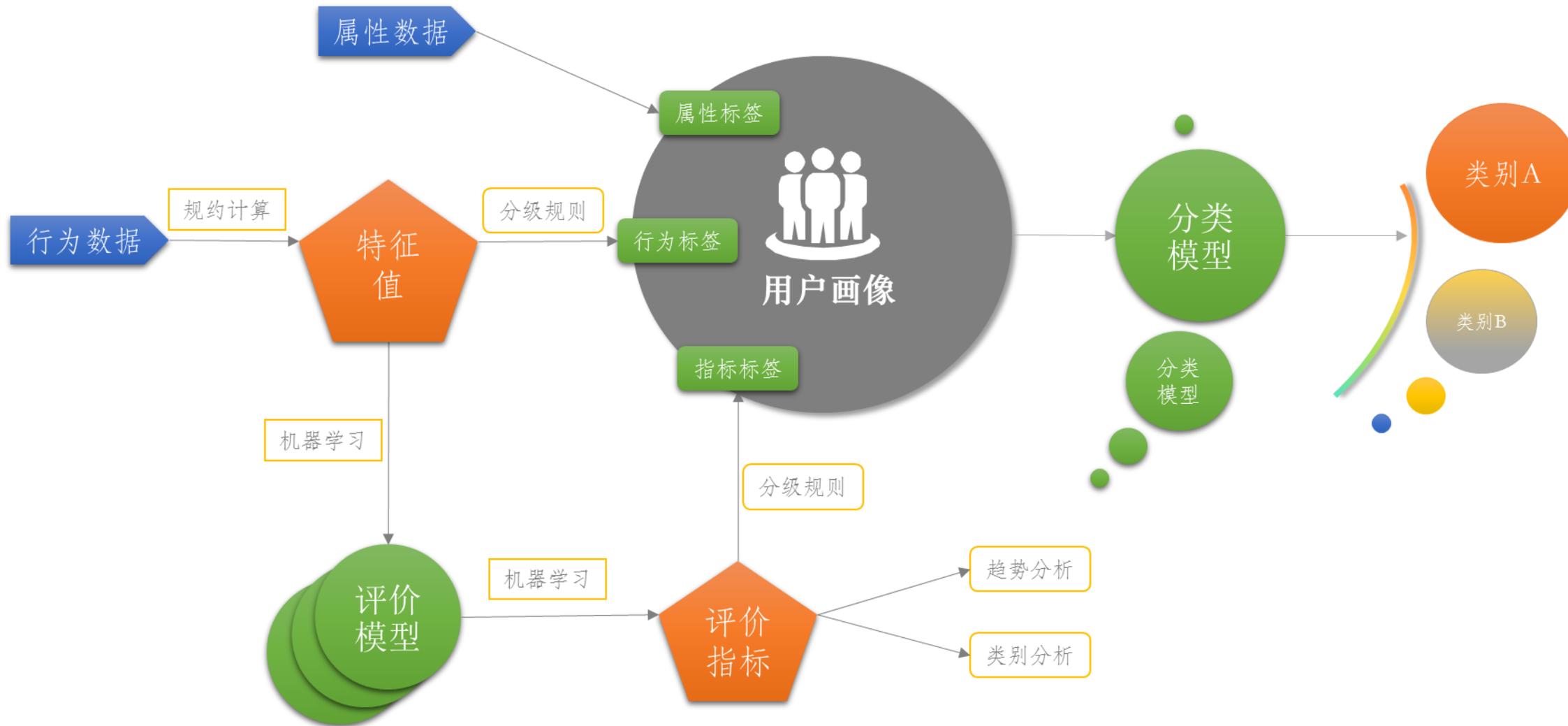
自适应学习为个性化学习服务 质量提升提供可能

Arizona State University



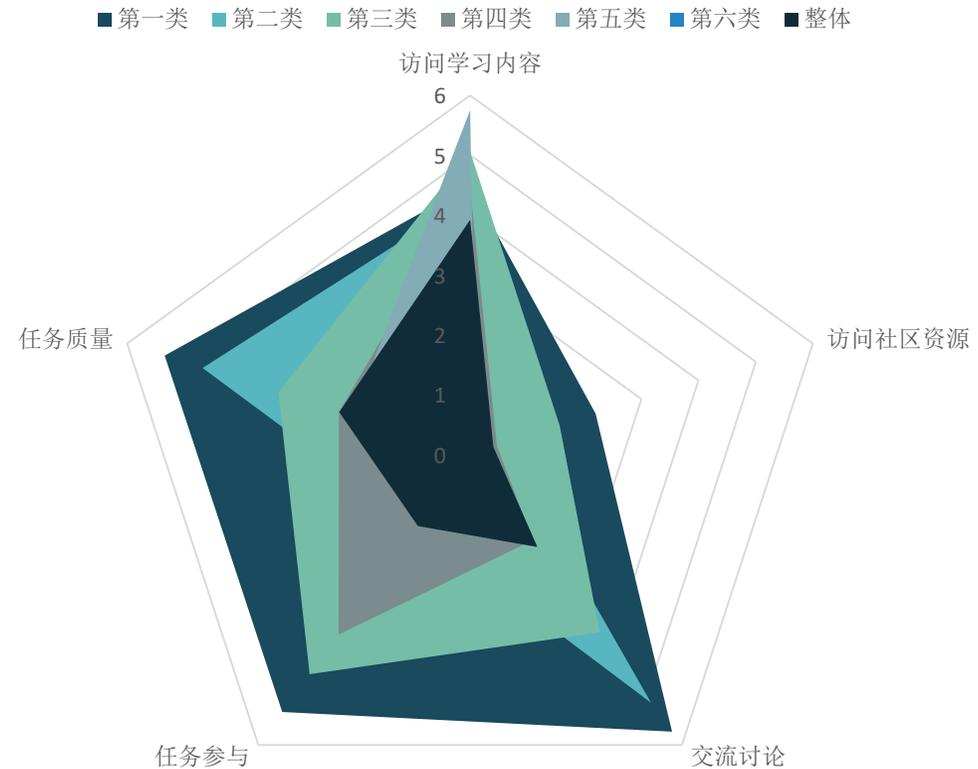
When Arizona State University started using Knewton-powered developmental math courses, pass rates rose by 17%, course withdrawals dropped by 56%, and 45% of students finished four weeks early.

大规模在线个性化学习



建模中的用户画像聚类分析

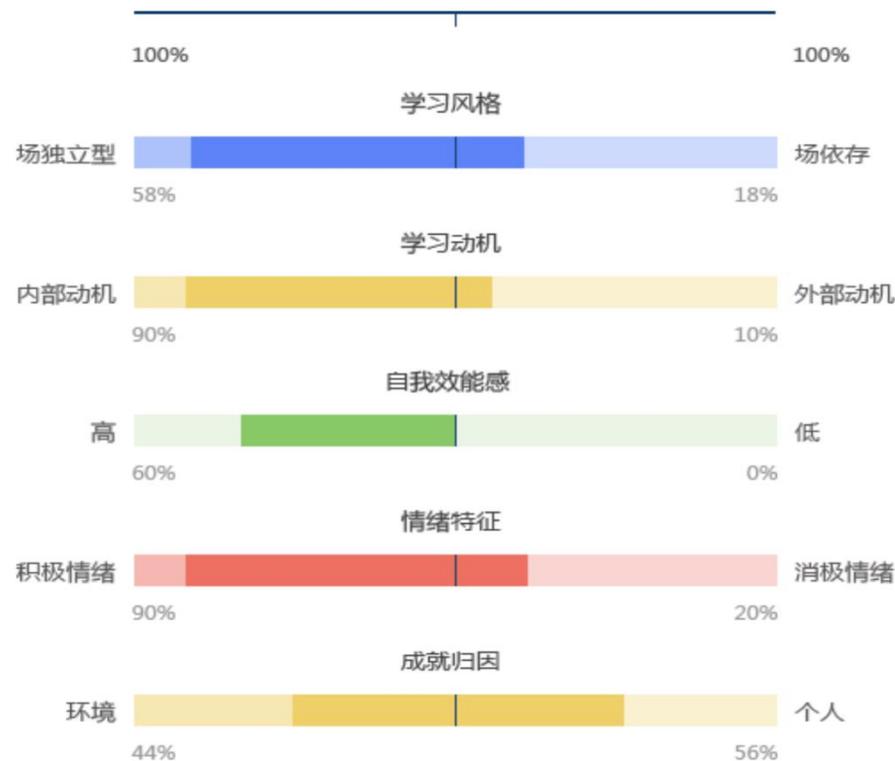
- 首先利用主成分分析法降低特征的维度，得出了相对独立的指标；
- 然后利用等量加权的方法获得了各维度的指数；
- 再对其结果进行聚类分析，通过这两种方法的结合可以有效避免单一方法评价的不合理性。



我们的学习者有什么特征？



学习能力诊断



学生心理画像

基于诊断后的适应性服务



- ❁ 基于内容的过滤 (content-based filtering, 简记为 CBF)
 - 根据事先抽取出的资源或学习者特征产生推荐

- ❁ 协同过滤 (collaborative filtering, 简记为 CF)
 - 基于学习者历史学习行为产生推荐

实践与应用 - 基于用户分析的个性化推荐

资源推荐

活动推荐

中数学01坊 [查看](#)

实施方案

考核方案

我的资源 坊内资源 为您推荐

开放课程

分类: **全部** 教学设计 教学课件 课堂实录 素材 微课 习题 工具 数字教材

课标解读 教材教法分析 其它

学段: **全部** 初中 高中 小学 幼儿

学科: **全部** 地理 化学 历史 美术 音乐 思品 生物 数学 体育 物理 信息

语文 英语 综合实践 科学 幼儿教师

请输入标题/姓名

搜索

 《容积和容积单位》课件.pptx

数学广角课件

杨静 上传于2016-10-27  教学课件

 阅读(2)

 评论(0)

推荐度: 99%

 《容积和容积单位》课件.pptx

数学广角课件

观看状态: **全部** 未观看 已观看

课程模块: 师德德育 信息技术 师德德育 信息技术



【已读】中小学教师信息技术应用能力标准解读

所属模块: 信息技术促进专业发展

主讲人: 张艺谋

观看人数: 100

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【未读】中小学教师信息技术应用能力标准解读

所属模块: 信息技术促进专业发展

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中小学教师信息技术应用能力标准解读

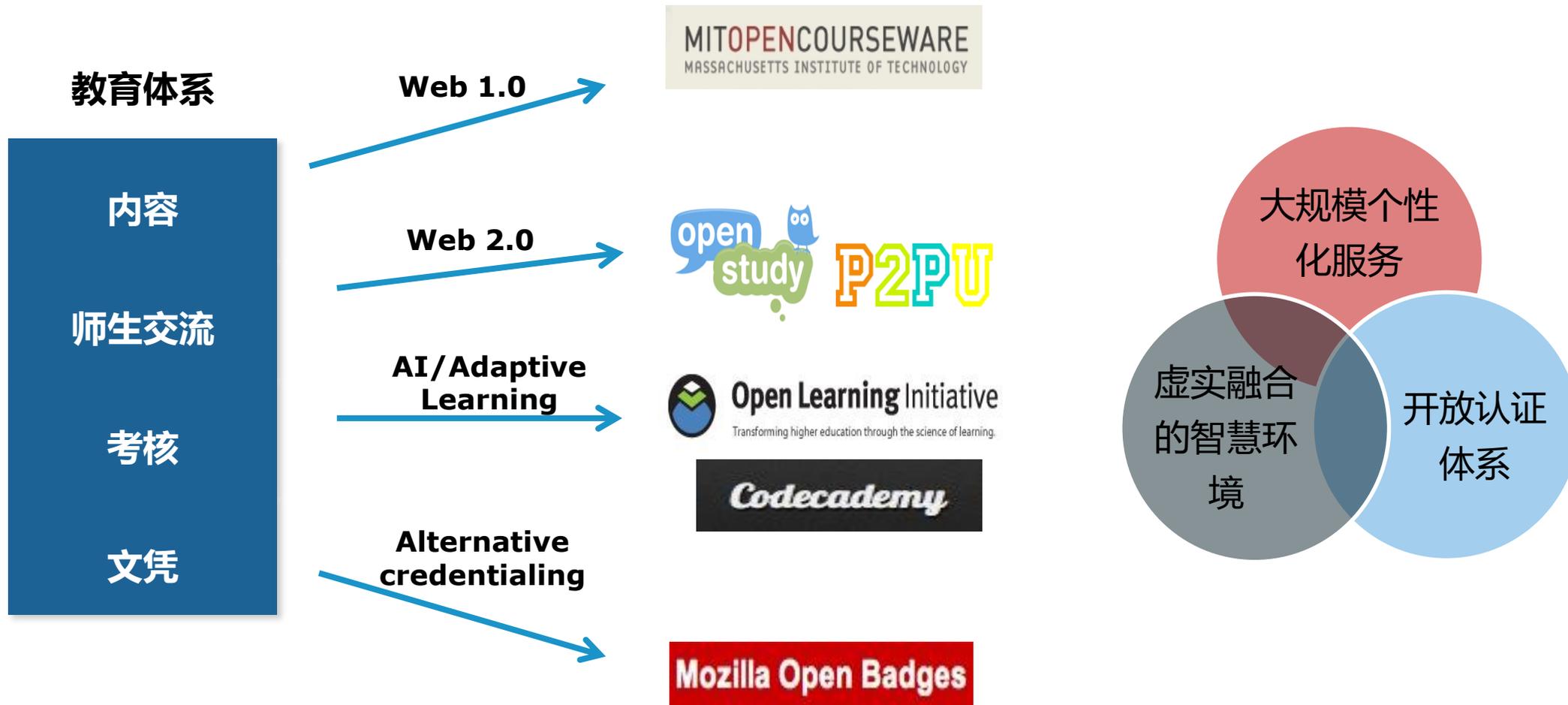
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互联网+时代的变革



谢 谢!

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