



# MOOCs Better Education and Teaching-the Case of Shanghai Jiao Tong University and its CnMOOC

**Dr Zhibin Jiang**

Dean of MOOCs Institute and

Chair Professor and Head of IEM& Department of SJTU



# Outline

- 1 MOOCs development in China**
- 2 Massive and high-quality teaching share
- 3 Reform of education and teaching
- 4 Offer Benefit to students and social learners

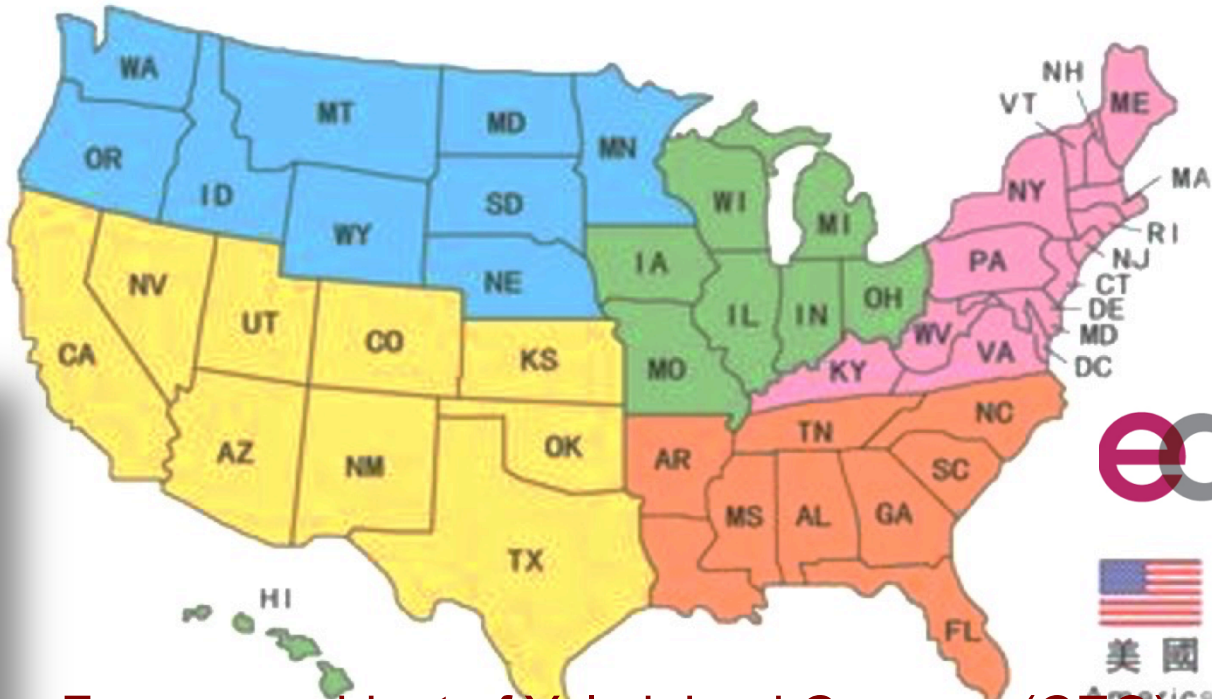


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# Top 3 Platforms in USA

- Top 3 platforms in USA: Coursera, edX, and Udacity;
- 1000 courses; 200 universities, more than 20 million learners only in 2 years.

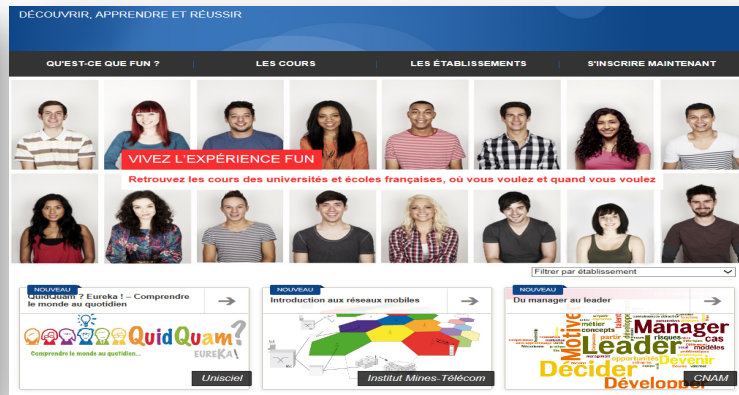
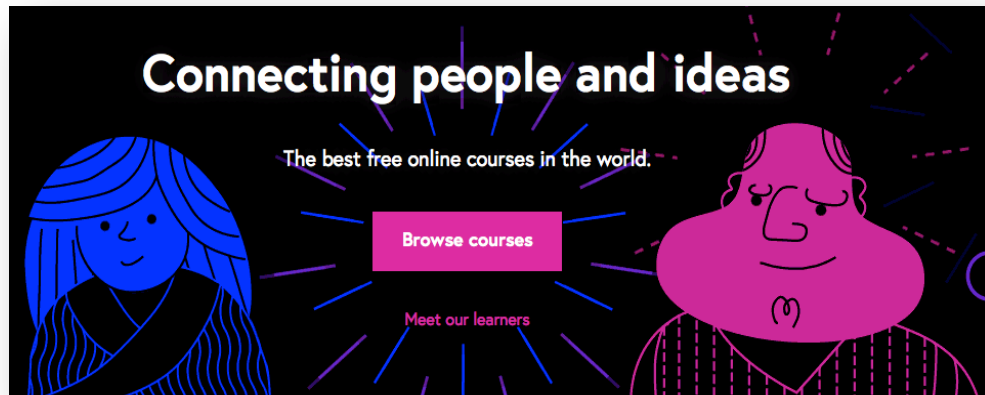


Fomer-president of Yale joined Coursera(CEO)

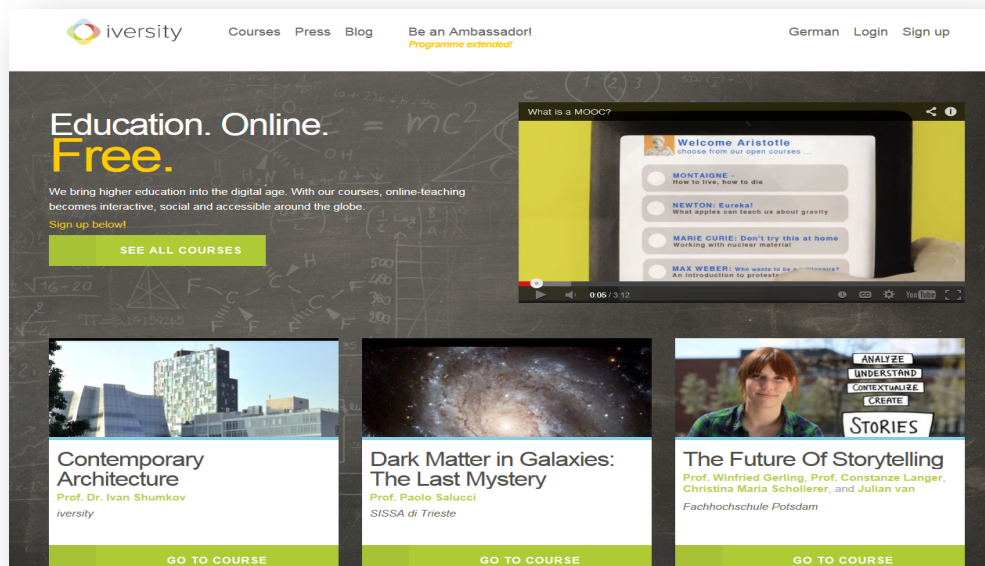




# Other countries follow up closely



## England ---- FutureLearn



## Germany----MOOC

## France----MOOC



## Japan----MOOC



# MOOCs development in China



## MOOCs Platforms

- CnMOOC (Jiao Tong University)
- Chinese Universities MOOC (High education Press)
- Xuetangx (Tsinghua University)
- Chinese MOOCS (Peking University)





# MOOCs development in China



## Courses from universities

Universities	Courses
Top 9 (C9)	160
Top 39 (985)	279
Others	47
Total	486



# MOOCs development in China



## Students and social learners ( Coursera in China )



复旦大学



西安交通大学



北京大学



上海交通大学



南京大学



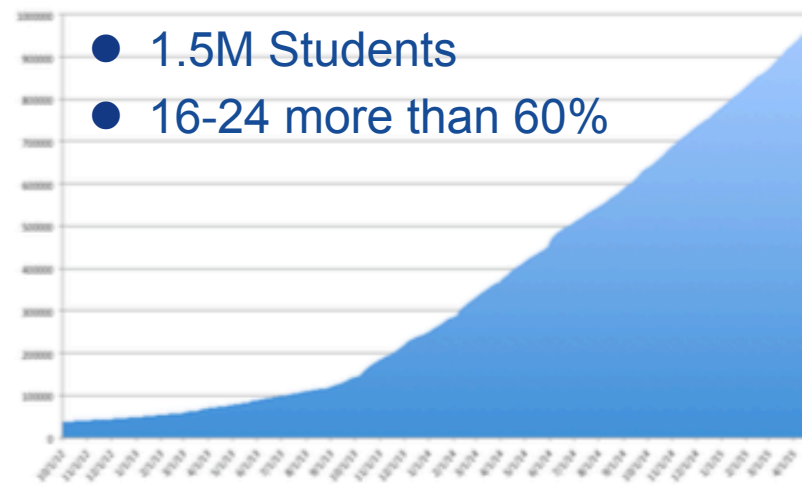
香港中文大学



香港科技大学



国立台湾大学





Internet + Education



# Policy of MOE

- ④ Platforms: identify MOOC platform as national public service platforms
- ④ Courses construction: 3000 national excellent courses by 2020
- ④ Application: courses sharing and credit offering among all Chinese universities



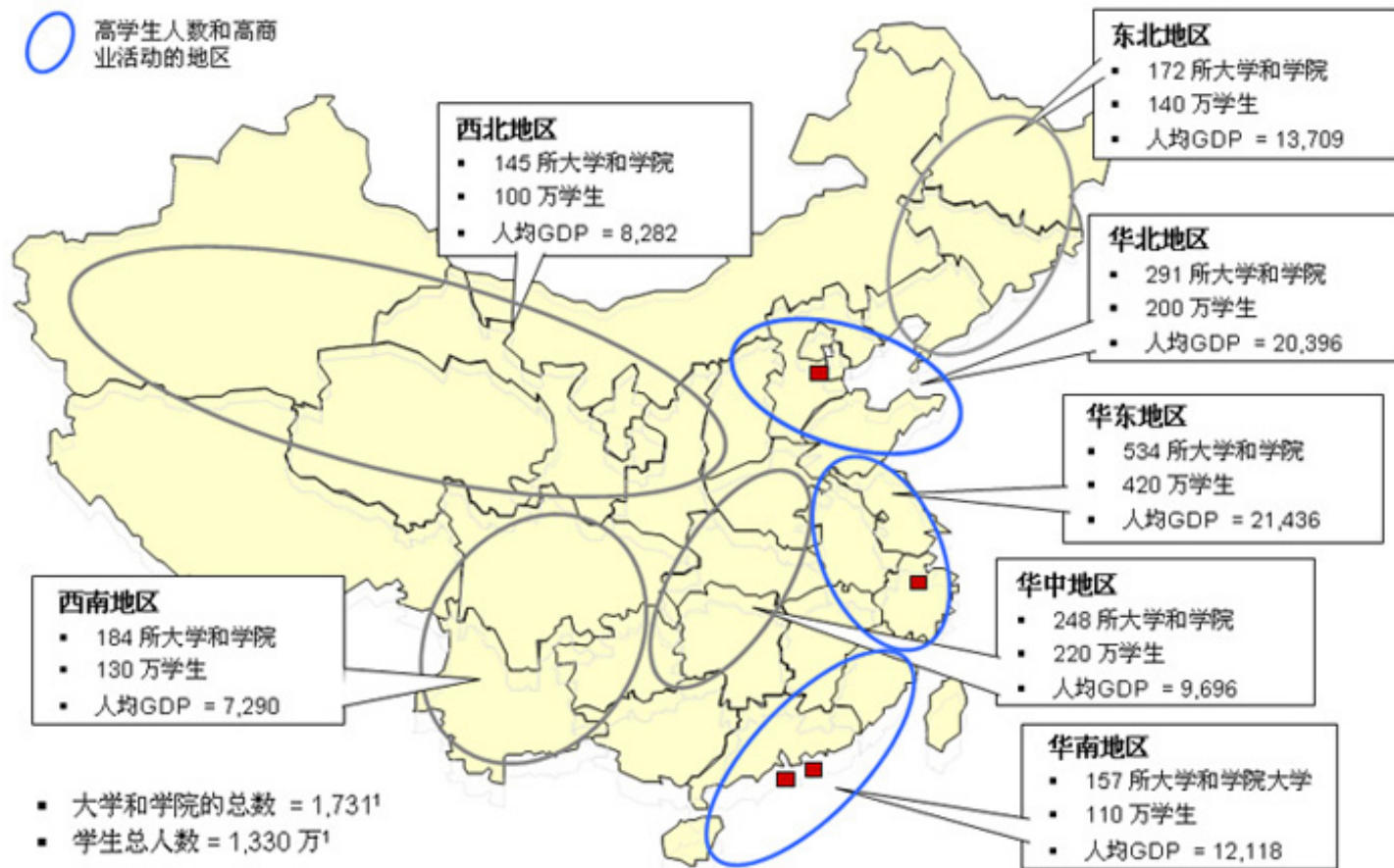


# Content

- ① MOOCs development in China
- ② **Massive and high-quality teaching share**
- ③ Reform of education and teaching
- ④ Offer Benefit to students and social learners



# Special Needs of China MOOCs: Resources sharing and solve education fairness



Scarcely and unevenly distributed in high quality education resources in China.



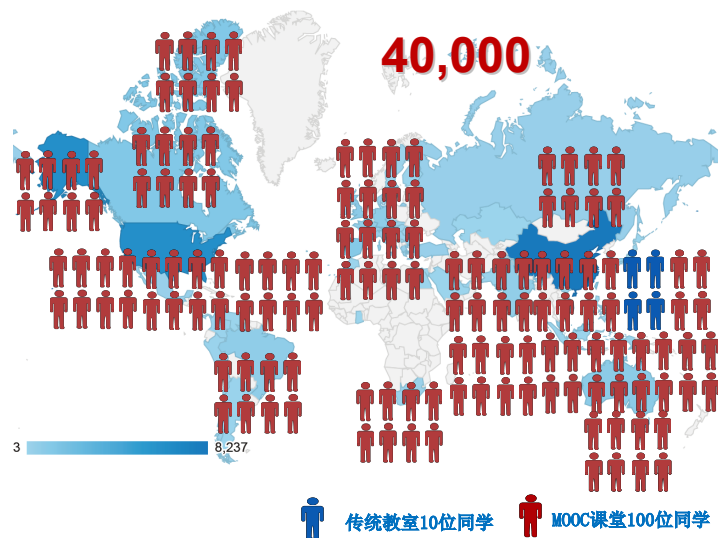
# MOOCs make it possible for massive and high quality teaching share

**MOOCs:** a nowadays teaching and learning mode (massive and high quality, highly interactive, independent and individual leaning) based on new information technologies



**Traditional classroom**

Massive + poor quality



**MOOCs**

Massive + high quality



# MOOCs make it possible for massive and high quality teaching share

## Why??

1. Internet and Cloud technology enabled convenient and cheap access any time and any place;
2. Artificial intelligence and big data can facilitate repetitive reaching work
3. Changed roles of teachers and students



# MOOCs make it possible for massive and high quality teaching share

## How to guarantee high quality teaching

- ① Top universities
- ① High level courses
- ① Excellent instructors
- ① High quality teaching organization



# Preconditions for high quality course sharing

- ④ Excellent courses
- ④ High level MOOCs platform
- ④ Good operating mechanism
- ④ Support from government





# MOOCs in some top universities



Massachus  
Institute of  
Technology

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澳大利亚新南威尔士大  
学



哥伦比亚大学



卫斯连大学



斯坦福大学



西澳大利亚大学



科罗拉多大学波德分校



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西班牙IESE商学院



墨西哥国立自治大学



罗彻斯特大学



伯克利音乐学院



柯蒂斯音乐学院



新加坡南洋理工大学



33



东京大学



上海交通大学



加州理工学院



北卡罗莱纳大学查普希  
尔分校



凯斯西储大学



佛罗里达大学



STANFORD  
UNIVERSITY

30+9 majors



# Good instructors and high level courses



季 卫东

Chair Professor  
KoGuan Law School



季 向东

Chair Professor  
Physics and Astronomy



姚 君喜

Professor  
School of Media and Design



彭 崇胜

Associate Professor  
School of Pharmacy



李 康化

Associate Professor  
School of Media and Design



王 维克

Professor  
Distinguished professor in Department of  
Mathematics



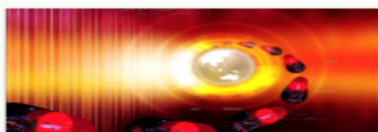
# SJTU MOOCs in Coursera

- 8 MOOCs in Coursera.
- Learners up to 160 thousand student-time, from 179 countries.
- known as “best Chinese courses”



## 上海交通大学

Shanghai Jiao Tong University, a leading research university located in Shanghai, China, has been regarded as the fastest developing university in the country for the last decade. With special strengths in engineering, science, medicine and business, it now offers a comprehensive range of disciplines in 27 schools with more than 41,000 enrolled students from more than one hundred countries.



医学图像处理技术  
October 8 2014



数学之旅  
具体日期待定



关爱生命—实用急救与自救技能  
October 8 2014



媒介批评:理论与方法  
具体日期待定



粒子世界探秘  
具体日期待定



法与社会  
具体日期待定



中医药与中华传统文化  
具体日期待定



唐诗宋词人文解读  
具体日期待定



- **CnMOOC V1.0 ( April 8, 2014); V2.0 (Nov.6, 2014)**
- Cooperation with Baidu
- Currently about 50 courses from Shanghai Jiao Tong University, Xi'an Jiao Tong University, Taiwan Chiao Tung University, Harbin institute of technology and so on





# The Highlight of CnMOOC

## 1. Knowledge Mapping: correlate all the key points in the course

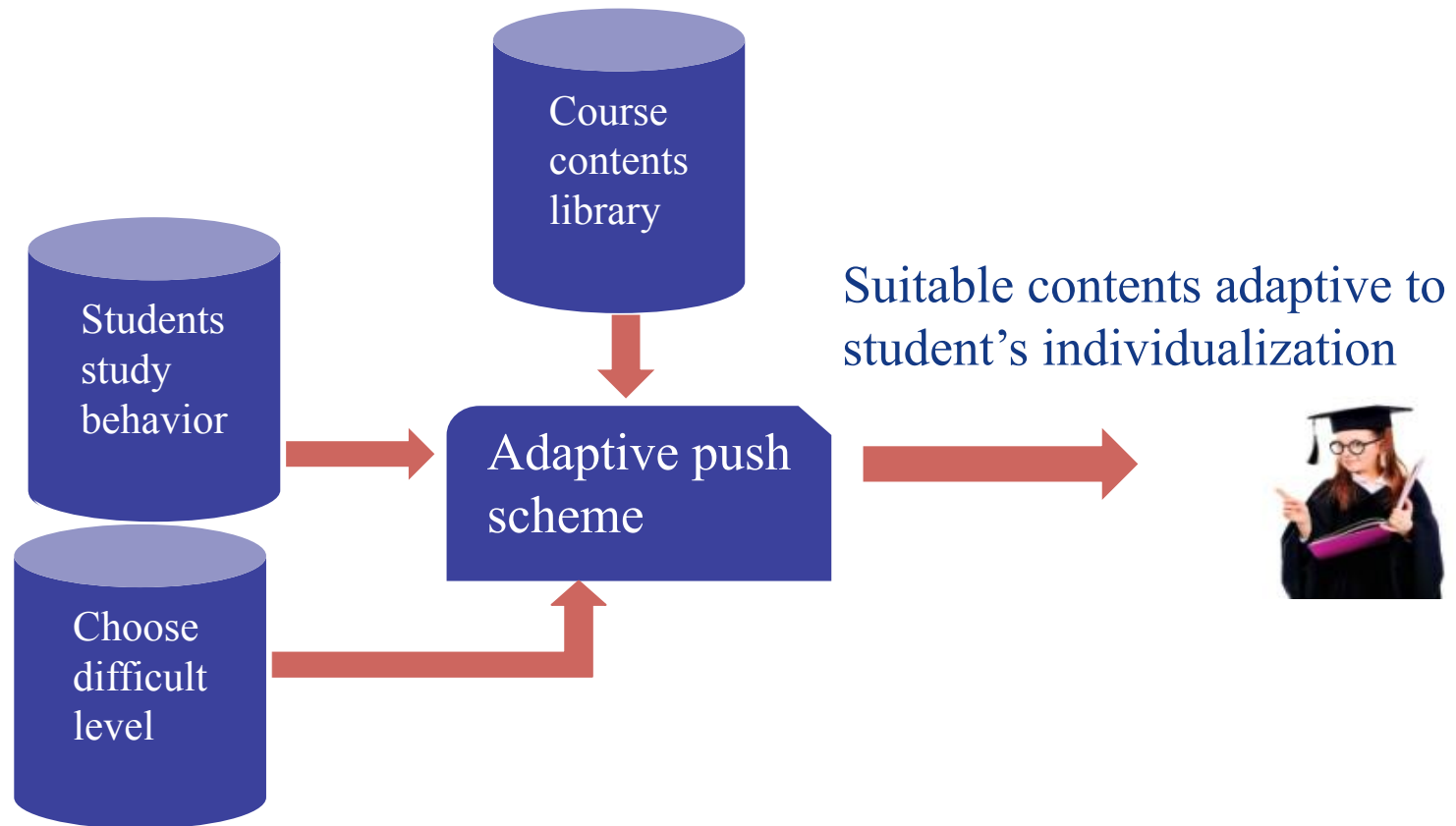






# The Highlight of CnMOOC

## 2. Adaptive Push: based on students' level, supply different information.







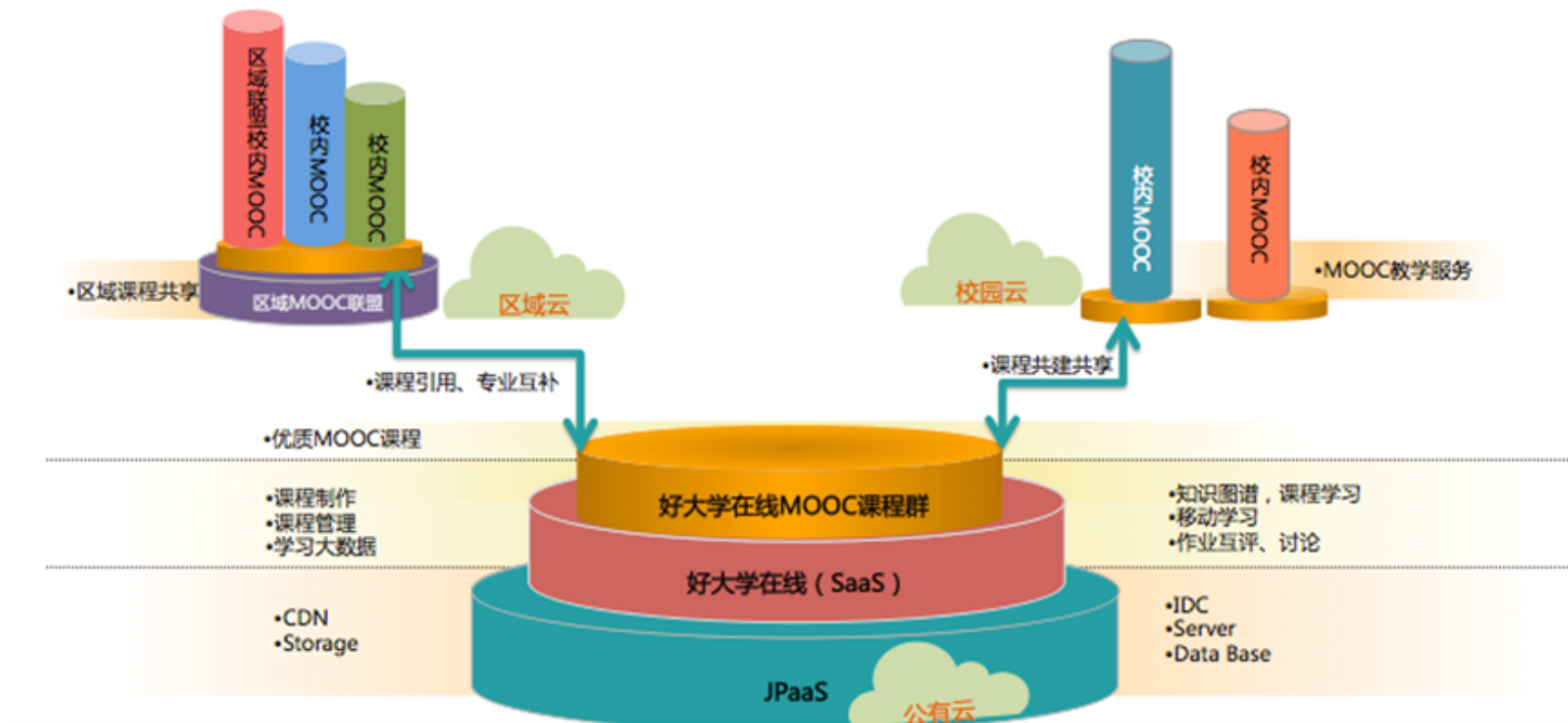
# The Highlight of CNMOOC

## 3. Cooperation with Baidu in building MOOCs learning environments.





## 4. Enabling SPOC

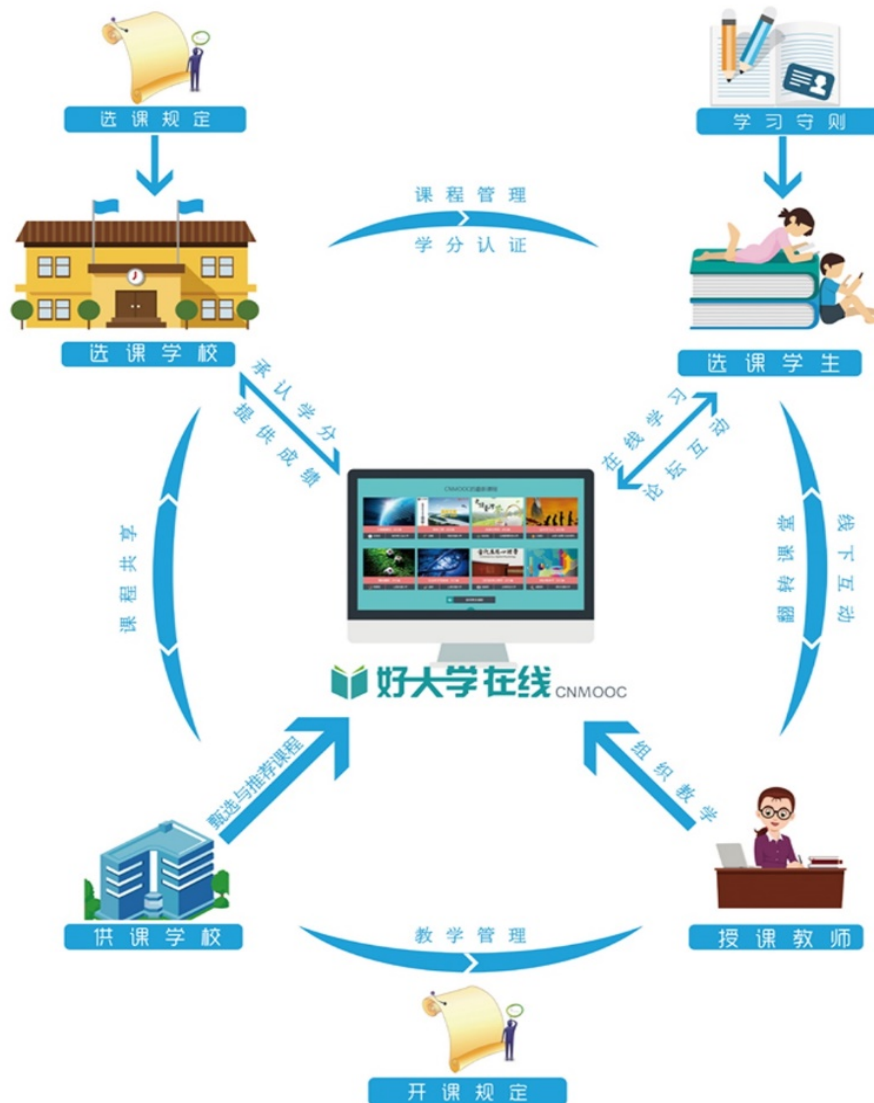


MOOC+SPOC: to satisfy different demands from different universities





# Mechanism for MOOSs based courses sharing and credit transfer



Multi-party collaboration mechanism:  
CnMOOC platform;  
Courses supply universities;  
Courses demand universities  
Teaching team  
Students

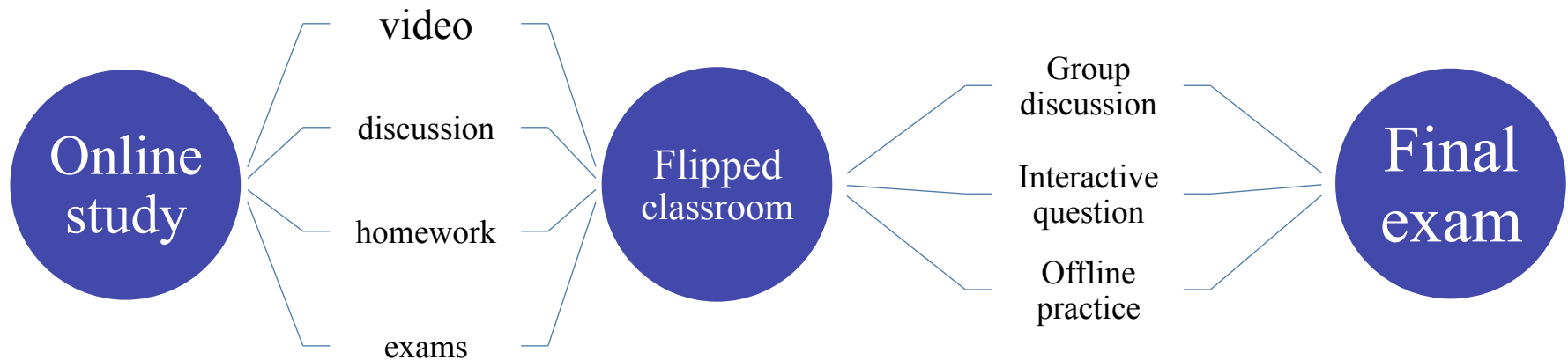


# Four teaching share mode

- ④ **Free study**: for one's interests
- ④ **Total sharing mode**: totally based on course supplied by the MOOC platform, and credit transfer.
- ④ **Partly sharing mode**: in combination with individual contents from student home universities, credit transfer.
- ④ **The second degree or micro-major mode**: a series of courses in a specific subject



# On-off line unification



## Blending Teaching and Learning Mode





# Flipped Classroom in HIT







# Flipped classroom







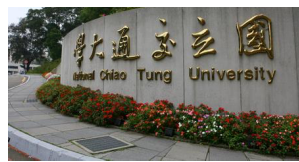
# Mixed teaching practice (Chinese Medicine and Chinese Traditional Culture)







# Courses Sharing based on MOOCs and Credits Transfer

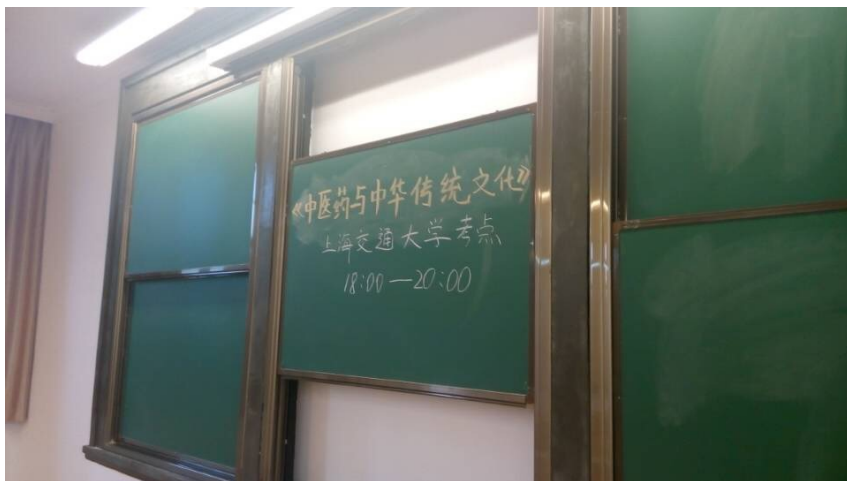


- 3 runs with 80 courses.
- Up to 170,00 person-time students from 400 universities
- About 10,000 person-time students earned credit (exclusive the 3rd run, still in process)





# After-course exam held on multi-campus





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# Problems with traditional education and teaching

- More on knowledge teaching, but less on ability cultivation;
- More massive teaching, less individualized education;
- More instructor-to-student feeding, less interaction among instructor and among students;



# Pedagogical Implication by MOOCs

- Learning is not just to acquire knowledge, it can also be achieved by mutual relationship.
- MOOCs focuses on social intercourse and can help students to establish social networks.
- Study with social networks, like Weibo, Wechat, forum, wiki and team work.
- Realize “peer to peer” internet teaching with low cost
- Open teaching and open learning in whole internet
- All the students can contribute to the course and make it better.





# MOOCs increase study efficiency

Individual biorhythm (subject to changes):

7:00—11:00am (first excitation phase)

17:00—21:00pm (second excitation phase)

*it's right suitable for online learning in the second excitation phase.*



2 excitation phases



Classroom in the morning



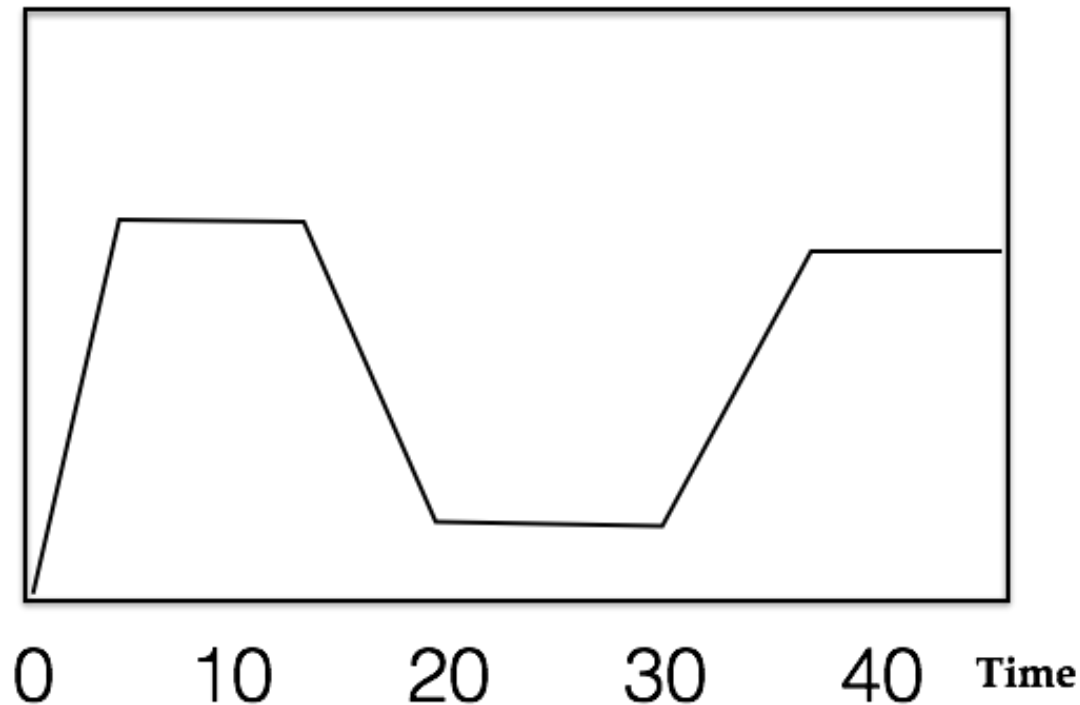
Online study at night



# MOOCs increase study efficiency

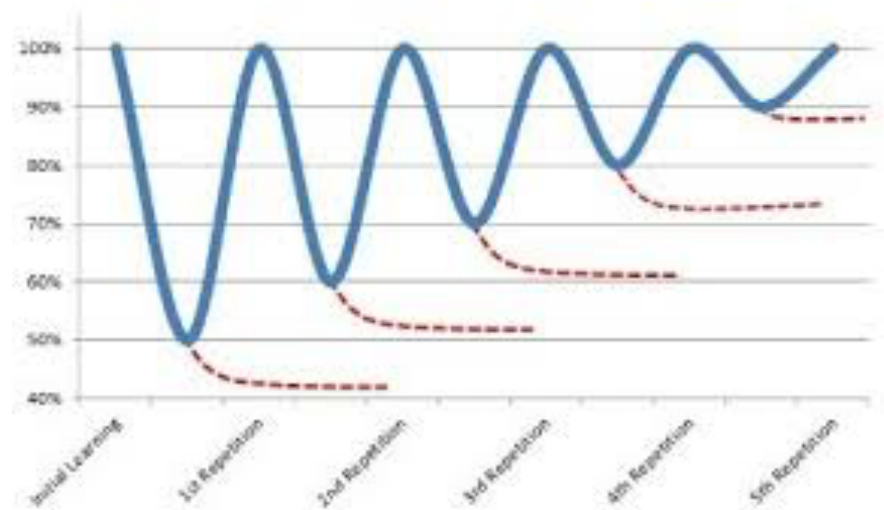
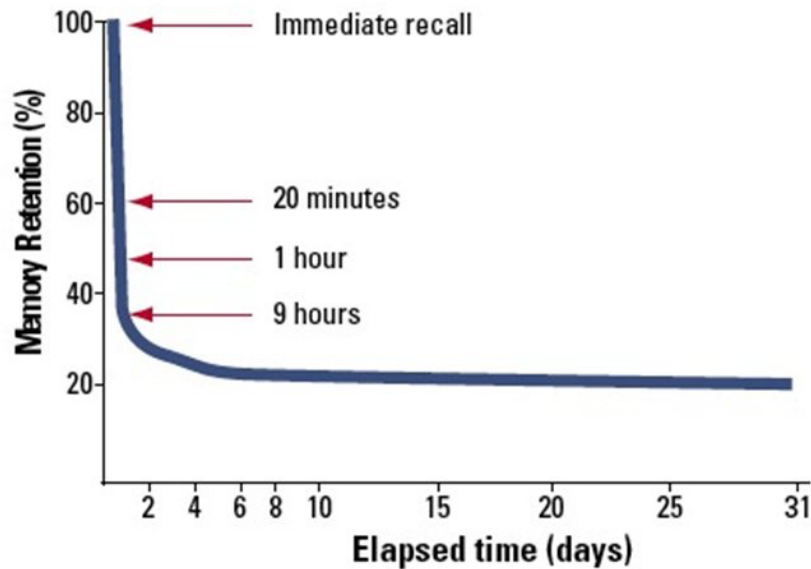
10 minutes length video could highly absorb students

study efficiency





# MOOCs is helpful to improve memory



By quizzes followed short video in the course, realize retrieval study and thus improve memory.



# MOOCs are beneficial to education reform

## *MOOCs bring new teaching methods*

- Participatory, independent and interactive study: learners are both students and instructors.
- Study at any time at any place.
- Multi-form teaching: teaching in the classroom is not only way.
- Whole process evaluation: to push learners study regularly.
- Mixed teaching: flipped classroom



# Instructors' role in MOOCs' view

1. Free choices for learners will push instructors to improve teaching performances.
2. Be the director of course, rather than only the actor.
3. Not all the instructors should give MOOCs, but they can use MOOCs to improve teaching quality.





# Universities in MOOCs' view

- Universities should be changed by MOOCs
  - Knowledge imparting function based on paper textbooks and real classrooms will be weakened.
  - Knowledge and MOOCs factories
  - Teaching research function based on MOOCs will be enhanced.
  - More as communities for discussion and communication.
  - More as lab bases;





# Learners in MOOCs' view

## ● *Learners should change:*

1. From reactive to proactive study
2. Participatory study: as both student and instructor.
3. Focus on more on ability cultivation







# Some Opinions

- ④ MOOCs are special online courses, not all online courses are MOOCs.
- ④ MOOCs are not only teaching resource, and, more importantly, teaching and studying process that are well organized based on advanced pedagogy.
- ④ Not all the universities and all teachers should give MOOCs, however, they could use MOOCs to increase education and teaching quality.



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# Problems with Traditional Education on Students

## ④ Non student orientated education:

- no enough freedom for students in choosing preferred majors;
- all the learning bounded to a major;
- no opportunities for self learning and development

## ④ Less concern on students' employment ability;



# MOOCs is helpful to realize “student orientation”

- ④ Changes passive learning mode, and thus stimulate the enthusiasm of study.
- ④ Change the traditional study only for credits and satisfy different study demands.
- ④ Let students have the opportunity to study without being bound to the major
- ④ Offer unlimited learning space for excellent students.



# Difference between traditional classroom and MOOCs



Pictured in  
Apr. 7, 2015,  
in “college  
physics” class

Traditional classroom: some students play mobile phone

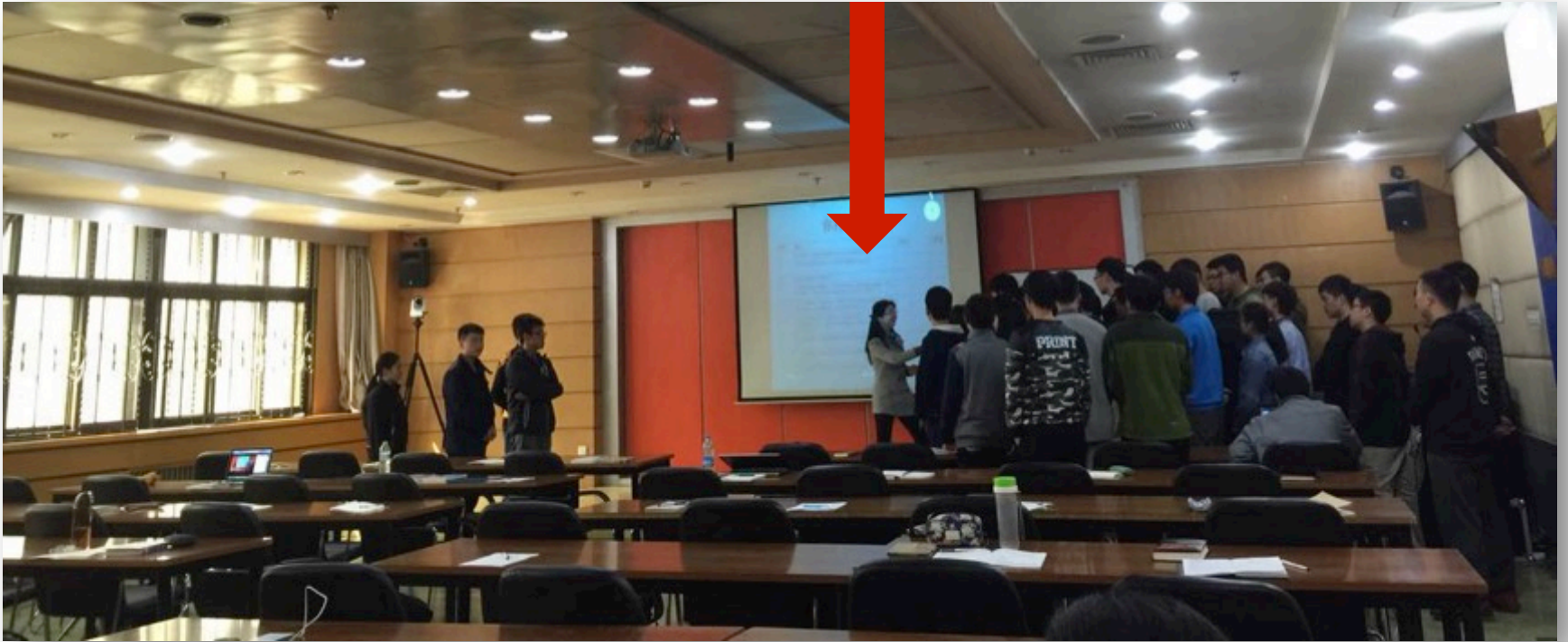


Chinese Medicine  
and Chinese  
Traditional Culture

Flipped Classroom: students actively interact



# Flipped classroom – make teachers and students be much interactive



Classroom discussion: Course “Contemporary Applied Psychology”





# MOOCs offer unlimited learning space for excellent students



Xu Shen, one SJTY final year students, got 8 course certificates and 5 offers from top 50 oversea universities





# MOOCs help student realize their dreams



By taking “Analog Electronics Technique” offered by SJTU Professor Yihui Zheng on CnMOOC, Yuanxin Yang, one sophomore student from Guangzhou vocational college of science and technology trade realize his dream in studying in top university。



# Conclusion

- ④ MOOCs makes it possible for massive and high quality teaching share, which is helpful for education fairness and improve higher education quality as whole;
- ④ MOOCs can promote education and teaching reform and increase teaching quality
- ④ MOOCs can realize the education philosophy of “students orientated” and offer benefits to students and learners.
- ④ MOOCs could make education and teaching better



**Thanks !**