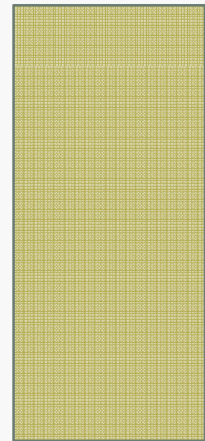


MOOCS (MASSIVE OPEN ONLINE COURSES): DEVIL OR ANGEL?

SAK ONKVIST
PROFESSOR OF MARKETING

HOWARD COMBS
PROFESSOR OF MARKETING

SAN JOSE STATE UNIVERSITY, U.S.A.



ISSUES TO BE DISCUSSED

- What Are MOOCs?
- MOOCs: Pros and Cons
- Peripheral Issues
- Real Issue: Teaching Effectiveness
- Empirical Data
- Conclusions and Implications

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San José State University

member of the California State University system

San Jose State University was the first public university in California. It is now the Largest University in the Silicon Valley.



California State University (CSU) Campuses

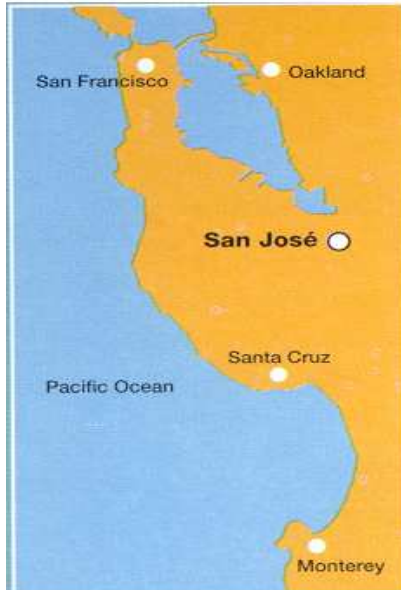
- **23 campuses across California**
- **Over 417,000 students**
- **Over 46,000 faculty and staff**
- **Largest, most diverse and one of the most affordable university systems in the country**
- **Over 1,800 Bachelor's and Master's degrees**



Where is San Jose, California?



San Jose, Capital of the Silicon Valley



San José is conveniently located midway between San Francisco and the Monterey/Carmel area at the sunny southern end of San Francisco Bay. The ocean, the mountains, and many other attractions are just a short drive away.

From serving as the first state capital of California to becoming the Capital of Silicon Valley, San José has distinguished itself as a city with a pioneering past and enterprising future.

Although San José's roots are in agriculture, the city today is better known for its rich harvest of innovative technology.

Safe, Exciting and Sunny.

San José has topped the list of safest big cities for five consecutive years. We've been ranked as the fifth best place to live in America by *Money* magazine. And *Sunset* magazine described our downtown as an "eminently walkable area with level streets, balmy weather and well-marked attractions."



■ Pacific Rim

Yoko Watanabe

BA, English, 1994,
Dokkyo University, Japan

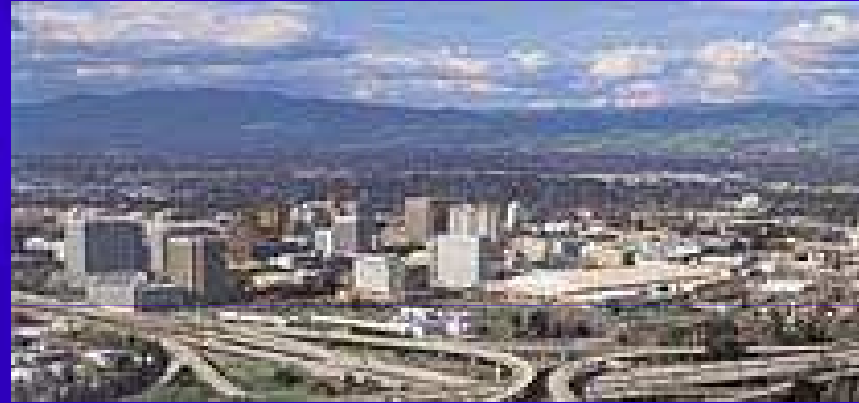
MS, Linguistics, (Teaching English to
Speakers of Other Languages), 1999.

A former teacher from Saitama, Japan,
Yoko lives in the Phyllis Forward

Simpkins International
House. Since she
studies language
acquisition theory for her
TESOL program, her
fellow I-House residents
are a living laboratory.

What is Silicon Valley?

- America's center for technology, innovation, and entrepreneurship



Silicon Valley is home to many major global corporations such as Apple, Cisco, eBay, Facebook, Google, Hewlett-Packard, Intel, Oracle, Yahoo, and many others.

Silicon Valley

America's Center for Technology and Innovation

San Francisco

ORACLE



Google

YAHOO!

VA SOFTWARE



Sun
microsystems

KLA Tencor



CISCO SYSTEMS

VERITAS

intel.



ebay

ALTERNATIVE METHODS OF TEACHING

- Traditional face-to-face or in-person instruction
- Distance learning
 - Correspondence courses
 - Broadcast courses
 - Online courses
 - MOOCs
 - Hybrid or blended classes

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HOPE & HYPE: MOOC MANIA

- Delivery of no-cost higher education to students around the world
- Supposedly the next big thing
- Disruptive innovation: Latest and greatest innovation in higher education
- *New York Times*: 2012 = The Year of the MOOC
- Thomas Friedman: "And nothing has more potential to enable us to reimagine higher education than the ... MOOC platforms."
- *Time* magazine's October 2012 cover story:
 - "Can a new breed of online megacourses finally offer a college education to more people for less money?"
- Fall 2011: a free online course in artificial intelligence by Stanford professors attracted 160,000 students.

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WHAT ARE MOOCs?

- online courses aimed at unlimited participation and open access via the web
- online platforms offering courses and educational materials to very large numbers of people
- open licensing of content, open structure and learning goals, and community-centeredness
- Including traditional course materials such as videos, readings, and problem sets
- Interactive user forums that help build a community for students, professors, and teaching assistants (TAs)
- Because of massive enrollments, MOOCs require instructional design that facilitates large-scale feedback and interaction
 - Peer-review and group collaboration
 - Automated feedback through objective, online assessments (e.g. quizzes and exams)

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PROVIDERS OF MOOCs

- edX = MIT-Harvard non-profit collaboration
 - more than 1 million students
 - Concern about commercialization of online education (e.g., for-profit University of Phoenix)
- Udacity, funded with venture capital
- Coursera
 - for-profit technology company
 - partnering with more than 80 universities
 - 4.7 million Courserians

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PROS

- **Accessibility**
 - Appropriate for any setting that has connectivity (Web or Wi-Fi)
 - Not hindered by time zones or physical boundaries
 - Lower barriers to student entry
- **Affordability**
- **Flexibility**
 - Any language or multiple languages
 - Any online tools
- **Scalability**
 - Fixed cost vs. variable cost
- **Sharing**
 - Peer-to-peer contact enhances learning



CONS

- One-size-fits-all
- absence of serious pedagogy in MOOCs
- Privatization of higher education
- Class Warfare: Racial inequality in higher education
- Hidden financial costs
- Social costs: Demoralized students
- Course completion rates
- student authentication problems
- Digital literacy required
- Participants must self-regulate and set their own goals, time, and effort

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PERIPHERAL ISSUES

- Public defunding vs. democratization of higher education
- Exclusivity (elitist) vs. social equality or inequity
- Fee vs. Free
- Nonprofit vs. for profit

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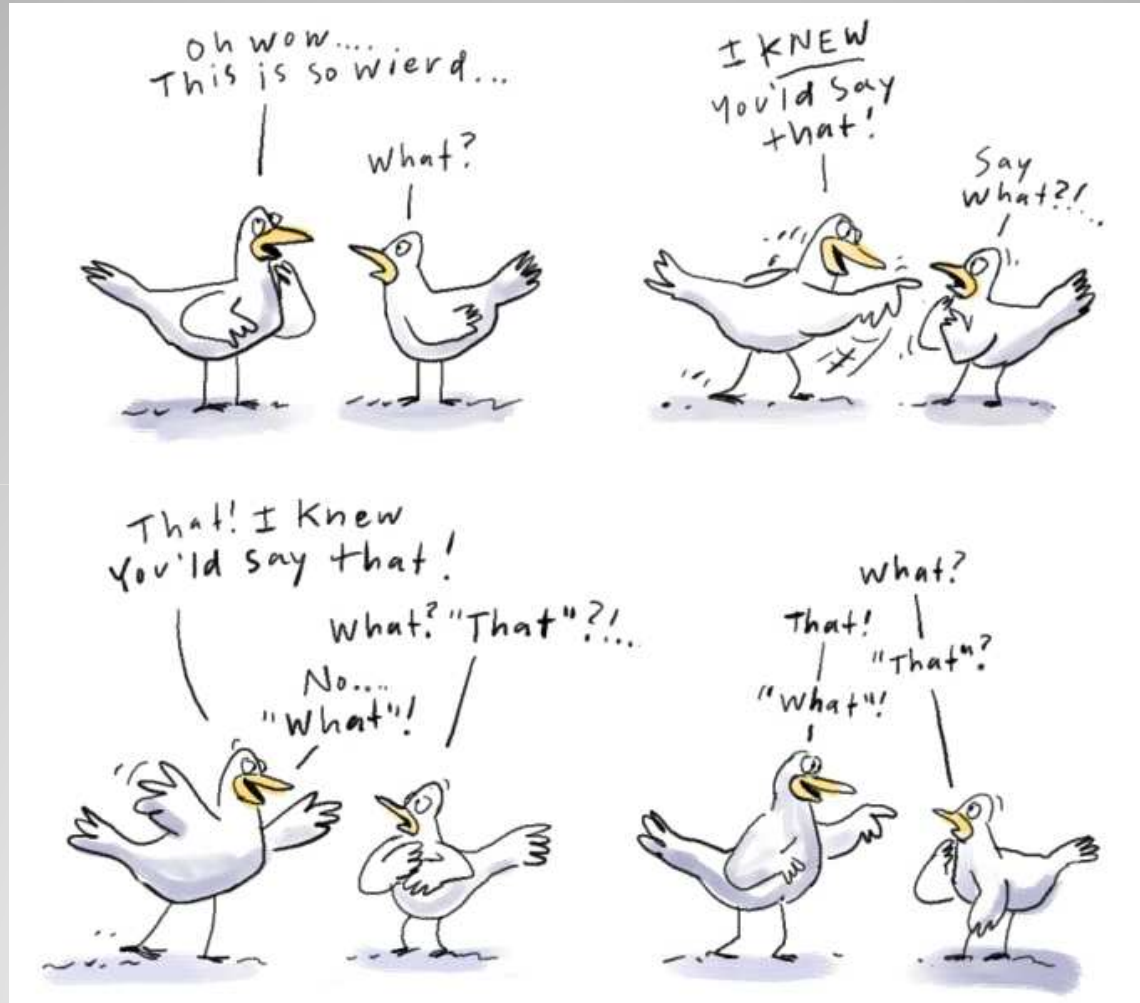
REAL ISSUES

- Efficiency vs. Effectiveness
- Similar to advertising and personal selling
- Advertising is efficient but not effective
 - Using same broad and bland message to communicate with millions of people
 - Gaining efficiency while sacrificing effectiveness
- Personal selling is effective but not efficient
 - much more effective than ad because of "personal" nature
 - one-to-one relationship, full attention, and flexible
 - meaningful message (due to customization)
 - but customized message is costly

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Is this a case of déjà vu?



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DATA: SUMMER CLASS STUDY at San Jose State University

- More than half of the summer-semester students had already graduated from college, compared to none in the spring.
- Students taking online exams in the summer were prompted with “hints” to exam questions.

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PASS RATE

	MOOCs	MOOCs non-SJSU students	Face-to-Face (SJSU students)
Remedial/ Developmental Math	29%	12%	80%
College Algebra	44%	12%	74%
Statistics	29%	12%	80%

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PASS RATE: MOOCs vs. Face-to-Face Courses

- Remedial/Developmental Math course
- 29% pass rate vs. 80% pass rate (regular face-to-face SJSU course)
- 12% of non-SJSU students in the Udacity version of the course passed.

- College Algebra course
- 44% vs. 74% C pass rate (face-to-face version)
- 12% on non-SJSU students in the online version achieved a C.

- Statistics
- 51% vs. 74% C pass rate students (face-to-face version)

- CSU Chancellor White called SJSU's use of online learning **"a failure"**

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FINDINGS

- The second agreement was a no-bid contract with Udacity to offer 3 for-credit, online-only classes in developmental math, algebra, and statistics to SJSU students, who paid \$150 each.
- Udacity courses showed incredibly dismal passing rates compared to students taking the same subjects face-to-face with SJSU professors
- Just 25% of students passed online-only algebra class, compared to a long-term average passing rate of 65% among students who take that class face-to-face with professors.
- In none of the three Udacity partnership courses did more than half of students pass. Four out of five students told surveyors they wanted more help with the content.

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SJSU Philosophy Dept.'s open letter

- Open letter from philosophy department to Harvard University professor Michael Sandel about an online social justice course he developed with the nonprofit online education startup edX
- We believe that having a scholar teach and engage his or her own students in person is far superior to having those students watch a video of another scholar engaging his or her own students.
- We fear that two classes of universities will be created: one, well-funded colleges and universities in which privileged students get their own real professor; the other, financially stressed private and public universities in which students watch a bunch of videotaped lectures and interact, if indeed any interaction is available on their home campuses, with a professor that this model of education has turned into a glorified teaching assistant.
- We believe that the purchasing of online ... courses is not driven by concerns about pedagogy, but by an effort to restructure the U.S. university ...
- Administrators at the CSU are beginning a process of replacing faculty with cheap online education

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SANDEL'S RESPONSE TO SJSU LETTER

- I strongly believe that online courses are no substitute for the personal engagement of teachers with students, especially in the humanities.
- The worry that the widespread use of online courses will damage departments in public universities facing budgetary pressures is a legitimate concern that deserves serious debate.

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Conclusion

- Questions?
- Comments?

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CONS

- Participants must self-regulate and set their own goals, time, and effort
- the need for territory-specific study of locally relevant issues and needs.

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CONS

- Cary Nelson, former president of the American Association of University Professors: MOOCs are not a reliable means of supplying credentials
- Sandra Schroeder, chair of the Higher Education Program and Policy Council for the American Federation of Teachers: "These students are not likely to succeed without the structure of a strong and sequenced academic program."



CONS

- Amherst College faculty: a perceived incompatibility with their seminar-style classes and personalized feedback.
- Duke University faculty: Concerns about the effect of MOOCs on second- and third-tier institutions and of creating a professorial "star system"
- SJSU: pushing professors out of jobs, stifling diversity of thought, and depriving students of discussions

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ASSESSMENT

- Very difficult to have online assessment
- Two most common methods of MOOC assessment: machine-graded multiple-choice quizzes or tests and peer-reviewed written assignments
- Peer review based upon sample answers or rubrics, which guide the grader on how many points to award different answers
- Rubrics for peer grading not as complex as those for teaching assistants



PROCTORING

- Attention must be given to proctoring and cheating.
- Exams may be proctored at regional testing centers.
- Exams may be allowed at home or office by utilizing “eavesdropping technologies” (e.g., using webcams, monitoring mouse clicks and typing styles)

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PERIPHERAL ISSUES

- Freemium business model: basic product (course content) is free. But "premium" services such as certification or placement would be charged a fee.
- Course developers could charge licensing fees for educational institutions that use its materials. Free introductory courses may attract new students to follow-on fee-charging classes. Students may be able to pay to take a proctored exam to earn transfer credit at a degree-granting university, or for certificates of completion.
- On EduKart, fees are charged for providing the courses, not for exams. EduKart uses a franchise network. Franchisees provide advice and then sell courses directly to consumers

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FINDINGS

- It is generally accepted that about 90% of MOOC students drop out.
 - Duke University's "bioelectricity" MOOC enrolled 12,000 students, but only 313 achieved a basic pass.
- The more experienced and more successful students in previous college courses, the better he will do in a MOOC that offers so little in the way of one-on-one support. The least experienced students do worst.
- Overwhelmingly, students who successfully pass MOOCs are academically prepared (i.e., possessing degrees or having taken similar course
- Less prepared students need more supportive structure

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FINDINGS

- Fewer than 10% of students enrolled in Udacity actually finished their online courses, and not all of them received a passing grade. For every 100 students, about five actually learned the topic.
- A 2013 study conducted by University of Pennsylvania analyzed a million users in 16 Penn courses on the Coursera platform. Course completion rates ranged from 2% to 14%, with an average of 4% across all courses. User participation fell off dramatically after the first couple of weeks. Only about half of those registered viewed at least one of the lectures in their course.
- A 2013 study by Princeton University: Not only does student participation decline dramatically throughout the new generation of Web-based courses, but the involvement of teachers in online discussions makes it worse.

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SOCIAL AND RACIAL INEQUITY

- Social equality or inequity (elitist)
- Two classes of universities: well-funded colleges in which privileged students get their own real professors and financially stressed universities in which students watch a bunch of video-taped lectures and interact. Professor has turned into a glorified teaching assistant.
- Outsourcing to a private, for-profit company

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HYBRID

- One agreement, with edX, enabled engineering students to watch MIT course lectures online, and then attend classes with a SJSU professor who engaged them in questions and worked with them closely. Passing rates showed students did better than those in traditional courses. = hybrid approach
- Augmenting, not replacing, traditional education
- access to quality learning at reasonable costs.
- Professors are not part of the conversation
- Professors do not interact at all with students either to encourage them to add insights, or even to tell them they are on the wrong track. Rather, students interact with one another on unmoderated discussion boards.
- A faculty member teaching an in-person course with these characteristics could expect the harshest criticism at evaluation time for his retrograde pedagogy, inadequate assessment of student learning, and dismal failure to foster student success.
- Must expand access to low-income students and provide instruction that is more targeted to an individual's educational needs
- Low-income students lack hardware and infrastructure for meaningful access through a MOOC
- The format must offer a reasonable chance at success

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ONE SIZE DOES NOT FIT ALL

- A study from Stanford University's Learning Analytics group identified four types of students:
 - **auditors**, who watched video throughout the course, but took few quizzes or exams;
 - **completers**, who viewed most lectures and took part in most assessments;
 - **disengaged learners**, who quickly dropped the course; and
 - **sampling learners**, who might only occasionally watch lectures.^[1]



EXPERIMENTAL DESIGN

REQUIREMENTS FOR EXPERIMENTAL STUDY

- Explicit/implicit hypothesis
 - Advertising expenditures → sales
 - Higher price increases brand loyalty
- Variables operationally defined for measurement
 - Definition of brand loyalty
 - Buy same brand 5 times or more when other brands are available
- Manipulation of independent variable
 - Can control price
- One or more control groups
 - Need control group for regular price
- Random assignment
 - Assign objects to groups at random
 - Absence or elimination of other possible causal factors

