

**京都大学大学院医学研究科社会健康医学系専攻
第6回ファカルティ・デベロップメント報告書**

平成24年12月

社会健康医学系専攻教務委員会

はじめに

京都大学医学研究科社会健康医学系専攻では、よりよい教育のあり方を追及するために、平成 20 年度から、ファカルティデベロップメント (FD) 活動を強化してきており、平成 20 年 3 月 10 日の第 1 回 FD においては、特にコア科目の再編と統一を目的として議論を行い、過渡的な措置として、一部特別コースにおけるコア科目の推奨の実施として実現した。また、第 1 回 FD は、平成 19 年度の教員組織の改組 (注：教授から助教までが、教育・研究において、基本的に同等の権限と責務を負うことになったこと) を受けて行われた最初の全教員参加による FD であった点でも、画期的な FD となった。第 2 回 FD は平成 20 年 11 月 20 日に実施され、同年 10 月に専門職大学院の認証評価を受けた際に指摘された点などをもとに、特にコア 5 領域の重要性と改善に関する議論を行ったが、その結果、平成 21 年度より、特別コースも含めて、全学生にコア 5 領域の履修を必須とするとともに、コア各領域の中で 1 単位科目の選択を可能とし多様化と履修の利便化を図ることとなった。平成 21 年 11 月 20 日に開催された第 3 回 FD では、こうした流れを受け、専攻の教育をさらに理念的にも技術的にも発展させるために、①授業の工夫に関する教員アンケートの実施とベスト授業の事例紹介、②学生による授業評価状況の詳細な分析、③他学部での授業評価の紹介、④公衆衛生の将来展望や公衆衛生大学院の教育内容に関する欧米での議論の紹介などが行われた。その結果、教務委員会による京大 SPH 独自の授業評価システム開発プロジェクトが立ち上がり、平成 22 年度からは、Web-QME ではない新たなシステムが導入されることになった。平成 22 年度の第 4 回 FD では、同年度から始動した新授業評価システムの評価が行われ、学生の参加状況、学生側からの新システムに対する意見が発表され、評価の高かった授業の責任者による授業内容の紹介、ベストティーチャーズ賞の将来的創設を念頭に、外国の事例報告などが行われた。平成 23 年度は、「教育システムの強化について」と題し、さらなる教育の充実を図ることを目的に実施された。特記すべき取り組みとして、米国のメンタリングプログラムのリーダーとして著名な、カリフォルニア大学サンフランシスコ校の Mitchell D. Feldman 教授を招き、米国のメンタリングの内容と動向を学ぶ機会を設けたことであり、その他にも、履修モデルの設定、授業内容のレベル表示、成績評価の厳密性・公正性の確保、レポート提出・試験の過密化の解消策、課題研究の中間指導のあり方などが話し合われた。これらの多くは、その後実質化が図られ、教育活動の充実に貢献している。

本年度は、こうしたこれまでの FD の歩みを踏まえて、「講義への ICT の利用」をテーマに、京都大学高等教育研究開発推進センターの飯吉透教授を招き、ICT(Information and Communication Technology)を用いた教育の世界的潮流や様々な新しい教育形態について学習し、その可能性について議論を行なった。公衆衛生の教育形態も、いずれは、少なくとも一部こうした新しい形態を取り入れた形に変わっていくと予想されるため、時代の流

れを踏まえた有意義な取り組みとなった。

公衆衛生は、世界的にパラダイムシフトを求められている状況にある。環境問題、人口増加、高齢化などによって増大する健康ニーズに、保健医療システムは十分な対応をできない状態にあり、その矛盾は今後さらに拡大すると予想されるが、こうした新たな困難に、公衆衛生による効果的・効率的な対応が求められている。それが昨今、「ニューパブリックヘルス New Public Health」として語られている内容である。欧米の公衆衛生大学院は、20世紀からこの問題に対する議論と対応を始めており、日本の公衆衛生もこうした視点に立った教育・研究の見直しが求められている。日本を代表する公衆衛生大学院の1つとして、我々も「ニューパブリックヘルス」を担う視点から、常に教育を見直し、進化していくことが必要であり、FDがそうした取り組みの具体的な場として、今後も一層充実していくことを心から願ってやまない。

平成 25 年 1 月

京都大学大学院医学研究科社会健康医学系専攻
専攻長・専攻会議議長 木原 正博

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4. 参加者およびグループ分け
5. 各分野からの提案
6. おわりに 教務委員長 古川壽亮

第6回ファカルティ・デベロップメントプログラム

テーマ： オープンエデュケーション

場所： セミナー室A および 演習室

日時： 11月30日金曜日9時～12時

プログラム：

9時～10時： 講演「医学、社会医学におけるオープンエデュケーションの可能性」

飯吉透（いいよし・とおる）京都大学 高等教育研究開発推進センター 教授

10時～11時： 分野ごと（または希望グループ）に分かれて自分野でオープンエデュケーションを応用するとしたらどんなことができるかをスモールグループディスカッション

11時～12時： 各グループの発表

飯吉透教授講演

教育イノベーションとしての オープンエデュケーションの可能性

飯吉 透, Ph.D.
(iiyoshi@mac.com)

京都大学 高等教育研究開発推進センター 教授

KUSPH FDワークショップ 11.30.2012

1



2

文明

技術的・物質的所産



教育 文明

技術的・物質的所産

教育 文化

精神的所産

教育イノベーション

一人の教育者の情熱と狂気

サーカスのように夢中になれる大講義：「基礎物理学」



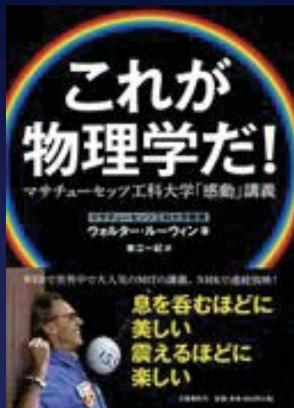
「物理への愛のために」

"For the Love of Physics captures Walter Lewin's extraordinary intellect, passion for physics, and brilliance as a teacher. Hopefully, this book will bring even more people into the orbit of this extraordinary educator and scientist." —Bill Gates

FOR THE LOVE OF PHYSICS

From the End of the Rainbow to the Edge of Time—A Journey Through the Wonders of Physics

Walter Lewin
with Warren Goldstein



TEAL (Technology Enable Active Learning)



The Gallery of Teaching and Learning - KEEP Case Studies: Transferring Knowledge and Experience

John Belcher教授と仲間たちによる授業改革プロジェクト

9

複数の学科・学部が協力して教育イノベーションを推進



数学科で開発されたMathletsが、物理学科のTEALでも利用されている。

Mathlets Mathlets Snapshot

10

教育イノベーションは、一日にして成らず！

The New York Times

At M.I.T., Large Lectures Are Going the Way of the Blackboard



The Massachusetts Institute of Technology has changed the way it offers some introductory classes. Prof. Gabriella Socola at a class on electricity and magnetism.

by DARA SIMEN
Published: January 12, 2009

CAMBRIDGE, Mass. — For as long as anyone can remember, introductory physics at the Massachusetts Institute of Technology was taught in a vast windowless amphitheater known by its number, 26-100.

Squeezed into the rows of hard, folding wooden seats, as many as 300 freshmen anxiously took notes while the professor covered multiple blackboards with mathematical formulas and explained the principles of Newtonian mechanics and electromagnetism.

But now, with physicists across the country pushing for universities to do a better job of teaching science, M.I.T. has made a **radical change**.

The physics department has replaced the traditional large introductory lecture with smaller classes that emphasize hands-on, interactive, collaborative learning. Last fall, after years of experimentation and debate and resistance from students, who initially petitioned against it, the department made the change permanent. Already, attendance is up and the failure rate has dropped by more than 50 percent.

Related
Times Topics: Massachusetts Institute of Technology

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in the class, Afshin Shafiq and her classmates use clickers to answer their professor's questions.

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3. EDITORS' SELECTIONS (what's this?)

YHW
Oakton, VA
January 13th, 2009
8:41 am

When I was an MIT undergrad, I remember really feeling that I didn't get much out of the 8.02 Intro to Electricity and Magnetism class. It seemed that the whole point of the class was to demonstrate how much you did not get it. Wish I had had this kind of opportunity.

[Recommended](#) Recommended by 23 Readers

6. EDITORS' SELECTIONS (what's this?)

Lynn
New York
January 13th, 2009
6:41 am

Probably, a school should offer both options. Some people do learn best quietly, thoughtfully, by themselves, and by following a skilled [rare, of course] faculty member through the development of an idea, rather than in an active buzzing setting, which can be distracting. But for anyone, the chance to self pace, which is enabled by classroom computers, moving more quickly through material that the individual finds easy to catch onto, more slowly through material the individual finds more challenging, certainly is a better use of time, as is the opportunity for learning by doing.

[Recommended](#) Recommended by 56 Readers

27. EDITORS' SELECTIONS (what's this?)

Tom
Moberg
January 13th, 2009
8:42 am

As a college instructor, I agree with the concept and use many of the techniques even in large classes, but I am concerned about where the rubber meets the road. How well and to what extent do the students retain the information from the two types of class settings and how well can the students apply what they learned when they actually get a job? Are the extra expenditures cost effective to the students? Considering that tuition costs are skyrocketing faster than inflation, the program seems to use an inordinate amount of additional resources in personnel and equipment, all of which drive up costs. Smaller classes are also great, but if you have 300 students to teach and teach 50 at a time, that means 6 classes compared to one class. Until those questions are addressed, the jury is still out.

[Recommended](#) Recommended by 30 Readers

45. EDITORS' SELECTIONS (what's this?)

zabrizk
Santa Maria CA
January 13th, 2009
12:09 pm

Not only are there real issues with the cost and space requirements for this method of instruction, but I suspect there are problems with objective, individual grading. In addition, "individualized," hands-on instruction slows the entire classroom down to the speed of the slowest learners. It dumbs down the average class session by only permitting time for a few points to get across. So what if 95% of the class get the three teaching points offered (for example) in an individualized classroom versus 50% of the class getting the ten major teaching points in a traditional lecture? Raise the bar and the students will rise to meet it. Lower the bar and the students will meet that lower bar as well. I'd rather have a system that places personal responsibility on the students that challenges them than a system that coddles and spoon-feeds them. In addition, with an elite institution like M.I.T., I'd hope the students are intellectually curious, motivated and responsible. I'm a "traditionally" trained aerospace engineer and fully happy that I didn't go through any of these "hands-on" classes. While they would have been more interesting and faster paced than a traditional lecture, I'm sure I wouldn't have learned as much.

[Recommended](#) Recommended by 25 Readers

At M.I.T., Large Lectures Are Going the Way of the Blackboard - NYTimes.com MIT TechTV – Perspectives of TEAL

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000 - Intro

024 - The Moral Side of Murder

24.15 - The Case for Cannibals

Discuss This Video Next Episode 02

James Kakalios

AUTHOR PHYSICS PROFESSOR SCIENCE CONSULTANT PUBLIC SPEAKER CONTACT

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JEWEL & SHALDO

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Sal on the Khan Academy @ TED

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Overview of our personal software

Forbes names you need to know

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Word Cloud: BIOLOGY, TRIG, FINANCE, CALC, HISTORY, ALGEBRA, CURRENT ECO, BANKING AND MONEY, CHEMISTRY, ARITHMETIC, PHYSICS, CREDIT, INTRODUCTION TO INTEREST, POLYNOMIALS, QUADRATIC EQUATIONS, INFLATION, DEFLATION, LINEAR COLLATIONS, PYTHAGOREAN THEOREM, CREDIT DEF, LINEAR FUNCTIONS, RAISING MONEY FOR A S, PRESENT VALUE, STAR, GRAPH OF THE SINE FUNCTION, POLAR COORDINATES, FRENCH REVOLUTION, NAPOLEON AND THE WAR, HAITIAN REVOLUTION, QUADRATIC EQUATIONS, INFLATION, DEFLATION, INTRODUCTION TO LEVERAGE, CPI INDEX, PAYDAY LOANS, PRESENT VALUE, RESERVE BANKING, AGGREGATE FINANCE, MORTGAGE, PAYDAY LOANS, PRESENT VALUE, INTRODUCTION TO INTEREST, MONEY FOR A STARTUP, BASIC ADDITION LONG DIVISION.

Khan Academy



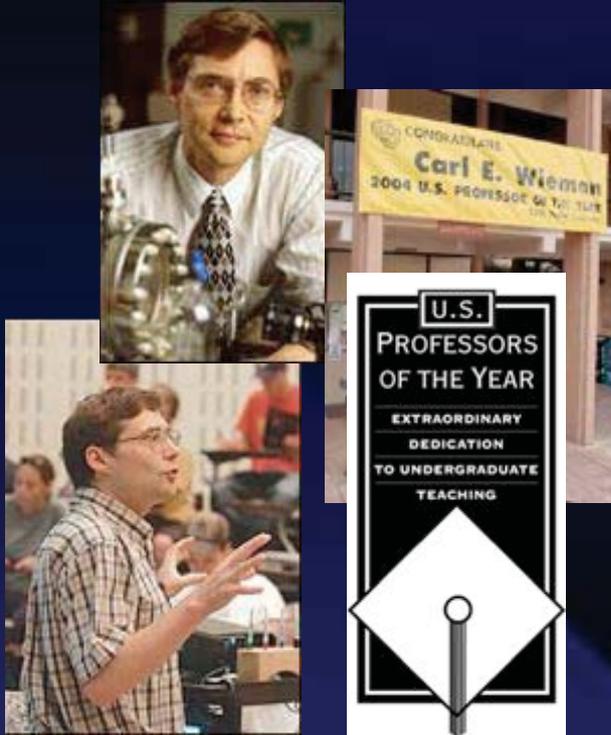
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Flipped Classroom: 自宅で授業・教室で復習

The image shows a collage of news articles. On the left is a snippet from the Los Altos Town Crier, dated Tuesday, 03 May 2011, with the headline "LAEF leaders learn value of Khan Academy". It includes a photo of students in a classroom and text describing how they use Khan Academy. On the right is a snippet from the Pittsburgh Post-Gazette, dated Thursday, January 05, 2012, with the headline "New twist in education: 'Flipped classroom' makes homework an in-school effort, puts lectures online". It includes a photo of a teacher, Pete Bouvy, interacting with students in a classroom.

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Carl Wieman (U.S. Professors of the Year 2004)



物理学教授 Carl Wieman

- ノーベル物理学賞
- NSF Distinguished Teaching Scholar
- U.S. Professors of the Year他、教育改善活動に関する賞多数
- Teachingにかける情熱
- PhETプロジェクト



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ノーベル物理学賞の賞金で作られた 物理学習用オープン教材

From This Week's Chronicle

A NEW FORMULA FOR TEACHING

A Nobel Prize winner in physics takes charge of reforming undergraduate science education at the University of British Columbia. Carl E. Wieman (above) says that he misses his research, but that the Nobel Prize brings a responsibility he can't ignore.
(Photograph by Lyle Stafford)

PhET Simulations

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Gas Properties : Play with an ideal gas. Add particles to a box and change the volume, add or remove heat, change gravity, and more. Measure the temperature and pressure, and see how the properties of the gas vary in relation to each other.

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Masses & Springs

Radios Waves & Electromagnetic Fields

Wave on a String

Balloons & Static Electricity

Gas Properties

Carl Wieman教授とコロラド大学ボルダー校の仲間によるプロジェクト

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格差超越装置としてのオープンエデュケーション

Initiative of San Luis Digital Agenda (アルゼンチン)



地元のLa Punta大学がプロジェクトを全面的に支援

iLabs



Dynamic Signal Analyzer



Polymer Crystallization



Heat Exchanger



Microelectronics Device Characterization



Shake Table



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- 最新の実験機器・施設へのアクセス
- iLabsを通じた教育・研究コミュニティ作りと教育・研究コンテンツの共有

世界に広がるiLabs



Microelectronics Device Characterization
(MIT-EECS, deployed 1998)



ELVIS
(MIT-EECS, deployed 2006)



Dynamic Signal Analyzer
(MIT-EECS, deployed 2004)



Neutron Spectrometer
(MIT-Nuclear Eng., deployed 2008)



Logic Lab
(OAU, Nigeria, deployed 2007)



Radioactive Decay
(University of Queensland, Australia, deployed 2007)



FPGAL Lab (OAU, Nigeria, deployed 2009)



Telecom Lab
(Makerere U, Uganda, deployed 2009)

African Virtual University



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オープンエデュケーションによるハイチの高等教育の復興

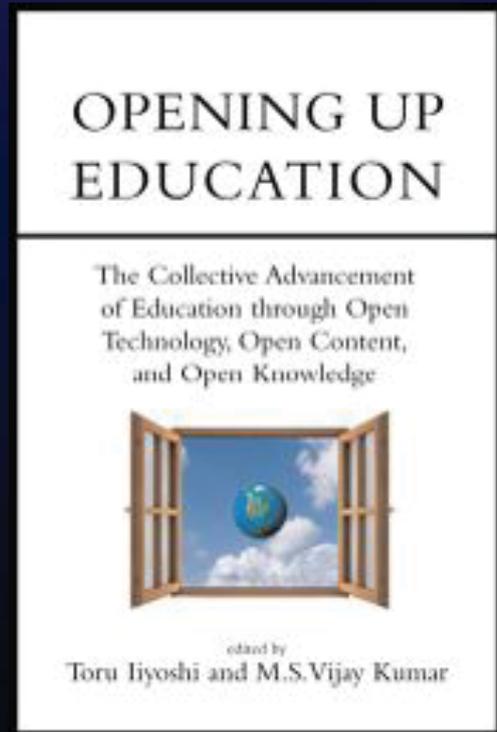


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21世紀のオープンエデュケーションの可能性を探る

- 「オープンエデュケーションによって、教えと学びをどのように進展させられるか」を、カーネギー財団の出版プロジェクトを通して検証・模索
- 38人のオープンエデュケーションのリーダーと専門家による全24章を収録
- これらのプロジェクトや機関が体得した知見や将来へのビジョンを網羅: OKI, IMS, CNI, Sakai, Moodle, iCampus, VUE, Mellon Foundation, OCW, Connexions, OLI, MERLOT, OpenLearn, SOFIA, Creative Commons, Hewlett Foundation, CASTL, VKP, ISSOTL, Open University, Carnegie Foundation, LAMS, 他
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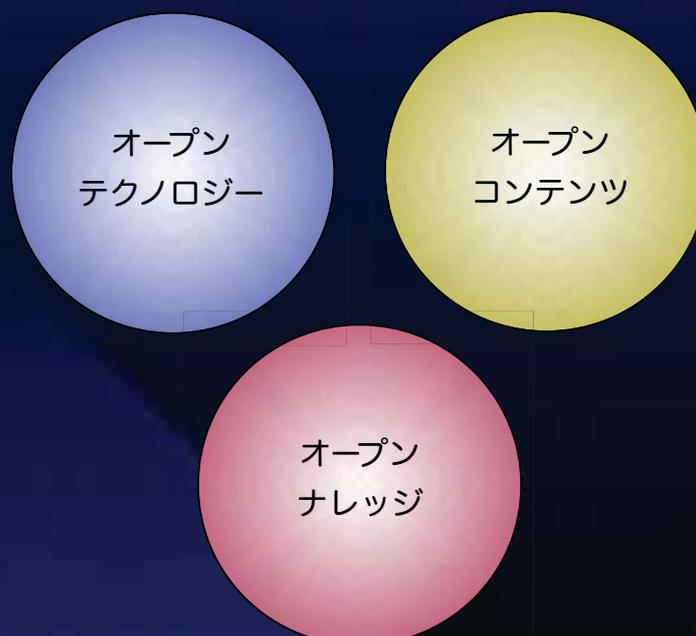
<http://mitpress.mit.edu>
Search: "opening up education"



MIT大学出版局より刊行
(2008年)

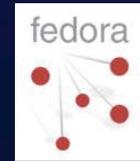
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オープンエデュケーションの三構成要素



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オープンエデュケーションの三構成要素



and more...

オープンエデュケーションの三構成要素



拡がり続けるオープンコンテンツの世界 既に何万ものオープンな教材が利用可能

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MIT OpenCourseWare: 2000以上の講義教材・ビデオを公開

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ウェブ上でオープン化されている講義教材や授業ビデオは、より良く教えるための宝庫！

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JHSPH OpenCourseWare

Find open public health courses and materials.

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"Vaccine trials are governed by research ethics, such as informed consent and privacy."

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— Janice Shirley, United States
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share
adapt
How much does OCW mean to you?
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社会健康医学関連のOpen Educational Resources

African Health OER Network
<http://www.oerafrica.org/healthoer>

CDC Learning Connection
<http://www.cdc.gov/learning/about.html>

Erpho (the East of England Public Health Observatory)
<http://www.erpho.org.uk/ep/commissioning.aspx>

Health Knowledge
<http://www.healthknowledge.org.uk/four-learning-styles>

Johns Hopkins Bloomberg School of Public Health's
OpenCourseWare
<http://ocw.jhsph.edu>

Johns Hopkins Bloomberg School of Public Health's
Online Courses
<http://distance.jhsph.edu>

NHS Health Scotland's Virtual Learning Environment
<http://elearning.healthscotland.com>

Friedman School of Nutrition Science and Policy
<http://ocw.tufts.edu/Schools/3>

USAID Global Health e-learning centre
<http://www.globalhealthlearning.org>

London School of Hygiene and Tropical Medicine
<http://conflict.lshtm.ac.uk>

Tufts University's OpenCourseWare
School of Medicine
<http://ocw.tufts.edu/Schools/1>

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Friedman School of Nutrition Science and Policy
<http://ocw.tufts.edu/Schools/3>

USAID Global Health e-learning centre
<http://www.globalhealthlearning.org>

Western Governors University's College of Health
Professions Program
[http://www.wgu.edu/
online_health_professions_degrees/
online_healthcare_degree](http://www.wgu.edu/online_health_professions_degrees/online_healthcare_degree)

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OpenCourseWare コンソーシアム

JOCW
JAPAN OCW CONSORTIUM

世界各国の100以上の大学・機関が参加し、既に数千もの講義教材が公開されている。

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April 22, 2010, 01:59 PM ET

Bill Gates Says Open Courseware Is Good but Needs Improvement

By Jill Laster



The fragmented world of open courseware should be transformed into "a worldwide resource that's very clear who should use what," Bill Gates said in a speech on Wednesday at the Massachusetts Institute of Technology.

The Microsoft founder praised MIT as being "at the forefront" in open courseware, adding that he has taken many of the institution's OpenCourseWare classes. But he said some problems have yet to be solved in open courseware, such as how to make courses across campuses easier to find and how to best use interactive features.

The Bill & Melinda Gates Foundation is looking at how to help support innovation in open courseware, he said. "What's been done so far has had very modest funding. This is an area we need more resources, more bright minds, and certainly one that I want to see how the foundation could make a contribution to this."

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Open Learning Initiative (Carnegie Mellon University)

Carnegie Mellon University

Open Learning Initiative
Transforming higher education through the art of learning

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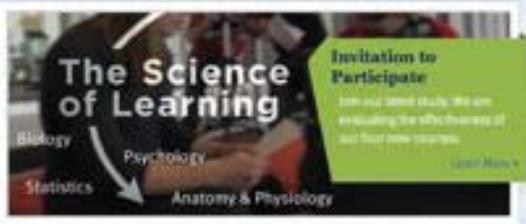
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WHAT WE DO

The Open Learning Initiative offers online courses to anyone who wants to learn or teach.

Our aim is to combine open, high-quality courses, continuous feedback, and research to improve learning and transform higher education. [Learn More >](#)



Invitation to Participate

Join our online study. We are evaluating the effectiveness of our first open courses. [Learn More >](#)

RECENT NEWS, EVENTS & MEDIA

- CC-OLI Pilot Evaluation
- August Webinar Series
- Study of OLI in the Wall Street Journal

[News, Events & Media](#)

FEATURED



Higher education is faced with some big challenges -- from resource issues to compressed teacher/student interaction times. Watch this video to get a glimpse of what we're doing to help the higher education system respond.

WHAT PEOPLE ARE SAYING

The learning curve is sharp and managing the resources was difficult at first, but having access to what students are really learning and not is excellent.

[Student Testimonial](#)

CURRENT PROJECTS

- APUSANCE Planning Project
- CC-OLI Community College Courses
- OLIX

[See all Current Projects](#)

OUR FUNDERS

The Open Learning Initiative is generously supported by the following foundations:



THE WILLIAM AND FLORA HEWLETT FOUNDATION

より深く、より効率的に、より確実に学ばせる工夫

36

● インタラクティブなシミュレーションをコース教材に内包

The screenshot shows a web interface for a chemistry course. At the top, it says 'Unit 4: Biological Chemistry' and 'Weak Electrolytes'. Below this, there are three boxes with icons and text: 'Define a weak electrolyte and write an expression for its dissociation constant', 'Describe the operation of a buffer', and 'Explore the relationship between the concentration of acid and conjugate base of a buffer'. The main content area is titled 'Acid Dissociation and Equilibrium'. It contains a paragraph explaining that the extent of acid dissociation depends on the pH of the solution. Below this is the chemical equation: $CH_3COOH \rightleftharpoons CH_3COO^- + H^+$. The text then defines the equilibrium constant K_a as the ratio of the mathematical product of the concentrations of each product to the concentration of the reactant. The equation for K_a is given as $K_a = \frac{[CH_3COO^-][H^+]}{[CH_3COOH]}$. At the bottom, there is a 'Watch the video' section with a video player showing a 3D molecular model of the dissociation process.

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● AI(人工知能)技術を応用した自学サポートツール(Cognitive Tutor)をコース教材と共に提供

Determine the sum of three concurrent forces:

Force F_1 has a magnitude of 5N; its line of action passes through points A (1, 1) and B (4, 3)

Force F_2 has a magnitude of 4N; its line of action is parallel to a 3-4-5 triangle

Force F_3 has a magnitude of 7N; its line of action is at 60 degrees to the horizontal

The diagram shows a 2D coordinate system with x and y axes. Three forces, F_1 , F_2 , and F_3 , are shown acting from a common point. F_1 is a blue vector pointing towards the point (4, 3) from (1, 1). F_2 is a blue vector pointing towards the point (1, 1) from a point that would be (4, 3) if the vector were extended. F_3 is a blue vector pointing towards the point (1, 1) from a point that would be (4, 3) if the vector were extended. A green triangle is drawn with vertices at (1, 1), (4, 3), and (1, 3). A 60-degree angle is marked between the horizontal axis and the line of action of F_3 .

What is the magnitude of the sum?
 $R = \text{[input box]} \text{ N}$

What is the direction of the sum?
 $\theta = \text{[input box]} \text{ degrees}$

Hint

38

- 自習過程の学習診断結果を教員や学生自身に伝え、理解にくいしにくい概念や学習項目を明らかにする。



(Candace Thille, 2007)

Carnegie Mellon University

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Anatomy & Physiology

◀ [Back to Open + Free Course List](#)

Anatomy & Physiology [\[Enter Course\]](#)

Note: The first five units are now available.

The entirety of the first semester and the beginning of the second semester will be available in September for this two-semester course.

OVERVIEW:

You probably have a general understanding of how your body works. But do you fully comprehend how all of the intricate functions and systems of the human body work together to keep you healthy? This course will provide that insight. By approaching the study of the body in an organized way, you will be able to connect what you learn about anatomy and physiology to what you already know about your own body.

By taking this course, you will begin to think and speak in the language of the domain while integrating the knowledge you gain about anatomy to support explanations of physiological phenomenon. The course focuses on a few themes that, when taken together, provide a full view of what the human body is capable of and of the exciting processes going on inside of it. The themes are:

- Structure and function of the body, and the connection between the two.
- Homeostasis, the body's natural tendency to maintain a stable internal environment.
- Levels of Organization, the major levels of organization in the human organism from the chemical and cellular levels to the tissues, organs and organ systems.
- Integration of Systems, concerning which systems are subsets of larger systems, and how they function together in harmony and conflict.

ACADEMIC STUDENTS

Are you taking a class with an instructor? If so, you will need to register for an OLI account and then sign up for your class using a Course Key, which your instructor will provide.

COURSE FEATURES

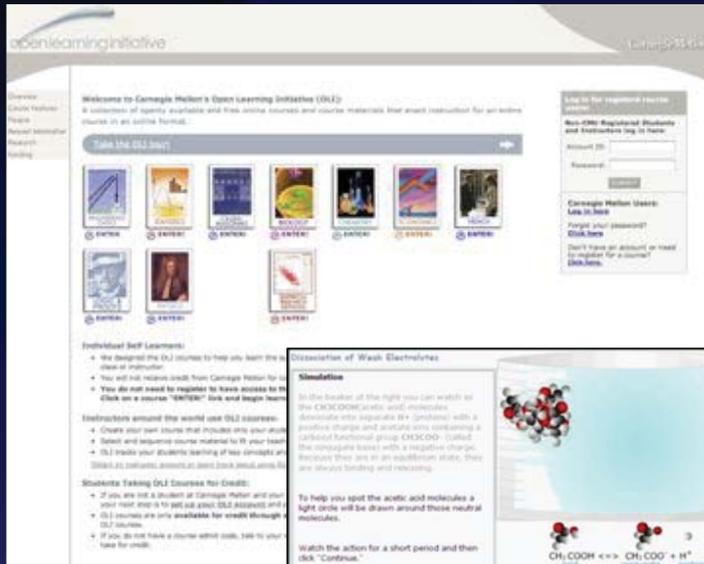
All of our courses include practice exercises and assessments that provide targeted feedback. [Learn more](#)

WHAT PEOPLE ARE SAYING

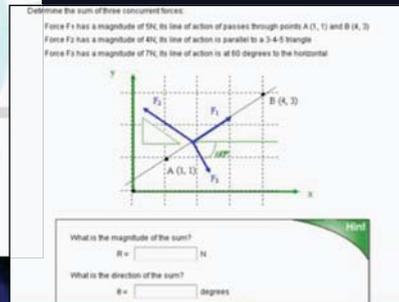
We're very supportive of this kind of environment – we think the Open Learning Initiative is leading the way.

Martha Karter, Under Secretary, U.S. Department of Education, OLI event hosted by CMU in Washington D.C.

大学教育におけるFlipped Classroomも可能 Open Learning Initiative (Carnegie Mellon University)



- 学習科学や認知科学に基づいたコース設計
- 効率的・効果的な学習・教授の追求
- 理解度・学習進度の可視化
- 教授法・学習法・教材の改善のための教員と学生のコミュニティ作りを支援



Open Textbook: Connexions (Rice University)



create

Fourier Analysis in Complex Spaces

Summary: This module derives the Discrete-Time Fourier Series (DTFS), which is a Fourier series type expansion for discrete-time, periodic functions. The module also takes some time to review complex sinusoids, which will be used as our basis.

Introduction

By now you should be familiar with the derivation of the $e^{j\omega t}$ for continuous functions. This derivation leads us to the following equations that you should be able to derive:

$$f(t) = \sum_{k=-\infty}^{\infty} c_k e^{j k \omega_0 t} \quad (1)$$

$$c_k = \frac{1}{T} \int_0^T f(t) e^{-j k \omega_0 t} dt$$

$$= \frac{1}{T} \int_0^T f(t) e^{-j k \omega_0 t} dt \quad (2)$$

quantity ω_0 is $f(t)$.

[NSF P4I support]

mix

FIR Filter Example

Summary: An example of using a Finite Impulse Response filter.

Input Signal → Low Pass Filter → Output Signal

The image shows three plots: an input signal, a low-pass filter response, and the resulting output signal. Below the plots are frequency spectra for each.

burn

books+

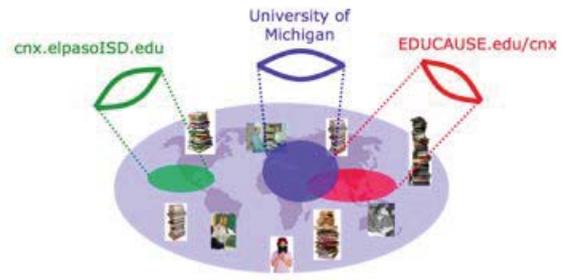
modular
 authored by community
 continuously updated
 personalized on assembly
 published on demand
 inexpensive



lenses

social software for peer review

inspiration: Flickr, de.licio.us, ...



(Richard Baraniuk, 2007)

CONNEXIONS

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You are here: Home > Content

Search for Content

551 results for: "public health"

Limit search to: Title | Author | Collections | All Subjects

Recent Searches: "public health" (551 matches), public health (552 matches)

Sort by: Relevance | Results per page: 10

View: Detail | Compact | Statistics

Public Health and Sustainability (m43321)
 Author: Cindy Klein-Bernal
 Keywords: morbidity, mortality, post-traumatic stress disorder, urban sprawl, volatile organic compounds
 Summary: In this module, the following topics will be covered: 1) definition of public health, 2) public health impacts of non-sustainable development, 3) key public health impacts of climate change.

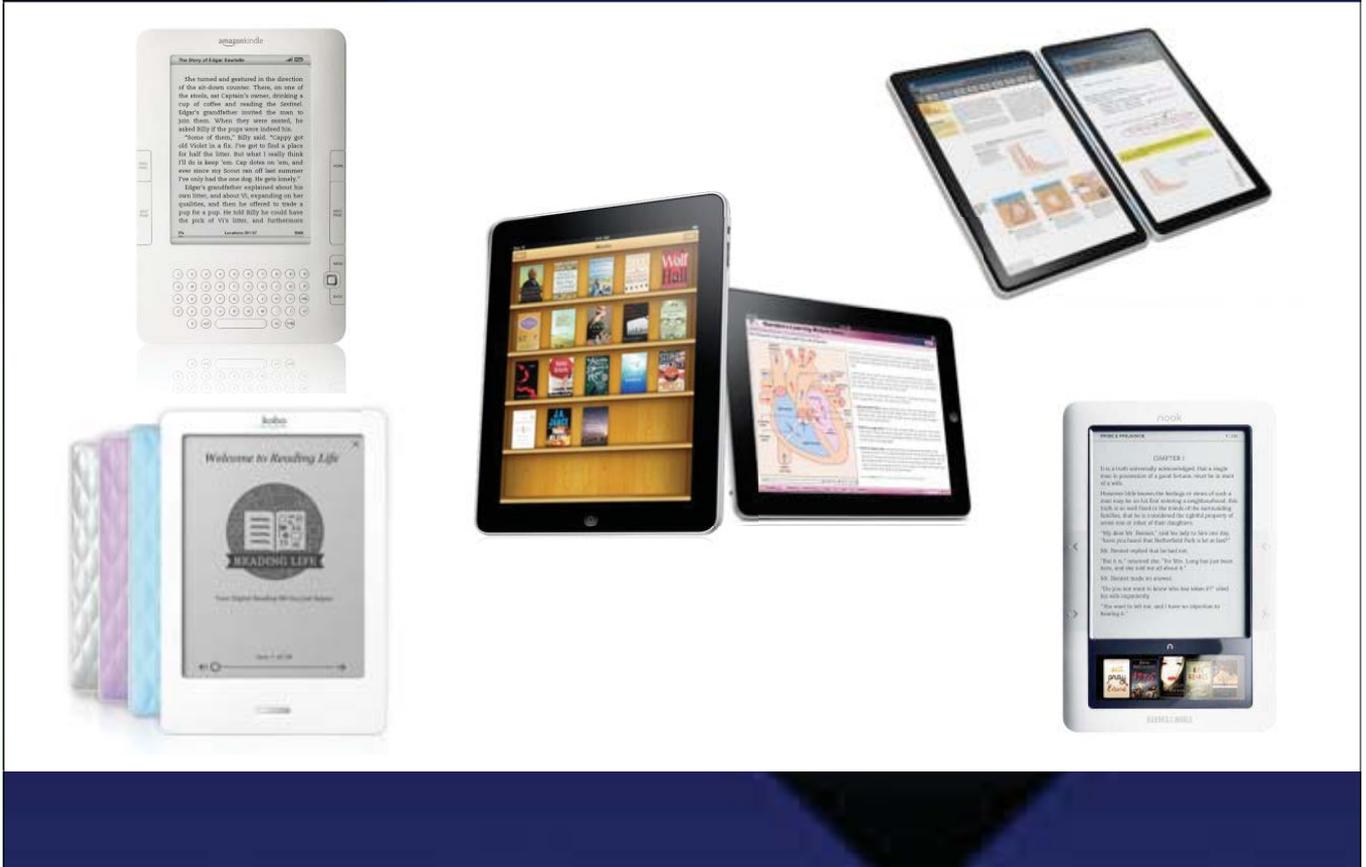
California Department of Public Health and Pandemics: All Hands on Deck (m33875)
 Author: Adriana Herentas
 Keywords: H1N1, Pandemic, Public Health
 Summary: "California Department of Public Health and Pandemics: All Hands on Deck" A Public Health Seminar Delivered By Dr. Mark Horton, Director of California Department of Public Health, on January 25, 2010.

DEVELOPING THE MARKETING PLAN FOR HANOI SCHOOL OF PUBLIC HEALTH (m28820)
 Author: Tran Thung Viet
 Keywords: Research missions, Training
 Summary: The HSPH's library has always tried to fit into training and research missions of our academic institution by selecting, acquiring, organizing and providing access to high quality information resources on public health as well as providing instruction and guidance to ensure effective retrieval and use of information for user community.

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REPOSITORY
 Total Collections: 1251
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 Total Modules: 21111
 Visit a random module

電子書籍時代：Open Textbookの普及を加速



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Driving Awareness and Adoption of Open Textbooks

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- Success Stories
- Press Room
- Events
- ODT Blog
- Contact us
- Join the Community

STAY IN TOUCH WITH US

Like 4 likes. Sign Up to see what your friends like.

Welcome to College Open Textbooks!

Funded by The William and Flora Hewlett Foundation, College Open Textbooks is a collection of colleges, governmental agencies, education non-profits, and other education-related organizations that are focused on the mission of driving the awareness and advocacy for open textbooks. This includes providing training for instructors adapting open resources, peer reviews of open textbooks, and meeting online professional networks that provide support to authors who open their resources. Through our community outreach, we have found that open textbooks should be:

- easy to use, get, and pass around,
- editable so instructors can customize content,
- cross-platform compatible,
- printable,
- and accessible so they work with adaptive technology.

That's just the short list.

Help us shape and continue to define what open textbooks turn out to be. Your voice will help create open textbook standards and guide development. We need you!

For organizations and community colleges interested in joining - Please contact us.

For individuals - please join the **College Open Textbooks Professional Network** and participate in the conversation and development of open textbooks that benefit all college students.

News & Events

November 23rd, 2008
Sponsorship Program for Advocate Trainers Announced

November 18th, 2008
College Open Textbooks Reaches 8000 on Nov. 12

November 15th, 2008
Webinar: 11:00a - 11:30am (PST)
How to Drive College Costs Down & Quality Up in TX and OK: Emerging Textbook Solutions

November 13th, 2008
Think Globally, Act Openly: Three Different Approaches to OER

Success Stories - Open Textbooks



Dr. Lisa McDonnell
Open Textbook Adapters

[Click here to view](#)



Erik Christensen
Open Textbook Testimonial

[Click here to view](#)



Janet Spencer
Open Textbook Adopter

[Click here to view](#)



Scan QR, Your FREE Copy of OPEN TEXTBOOK (web)

Project Funded by The William and Flora Hewlett Foundation

Photo Credits: Site: 11/08

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College Open Textbooks Community

Driving Awareness and Adoptions



collegeopentextbooks.org

Main My Page Events Adopt Review Blogs Photos Notes Groups Ning How-To

A site for stakeholders and participants of the Community College Open Textbook Collaborative

Photos



+ Add Photos View All

Latest Activity

- James Sartin** is now a member of College Open Textbooks Community
[Welcome There!](#)
12 hours ago
- Jacks Hood** updated an event [Register Today for CCCOER Only Meeting at Evergreen Community College at Evergreen Community College](#) yesterday
- Samuel Lewis Barbee** added a blog post [Student Created OER Materials on Saturday](#)
- WILLIAM and SARA ESCOBAR** joined College Open Textbooks Community on Thursday
- Amanda Salinas** at [Texas](#) and [North Carolina](#) joined College Open Textbooks Community

Events

December 9 Thursday [Register Today for CCCOER Only Meeting at Evergreen Community College](#)
December 9, 2012 from 11am to 2:30pm - [Evergreen Community College](#)

+ Add an Event View All

Past Events

Please visit this link to view [past events](#).

About This Site College Open Textbooks

Welcome to the networking space for the College Open Textbooks Community. Feel free to browse, comment, or seek help. Monica Sam will take over as webmaster starting in October 2012. She has been the webmaster for our Advocate/Trainer Ning for months. In the meantime, contact [Jacks Hood](#) if you need assistance.

Help us promote open textbooks! Become a member of this community by clicking on Signup in the upper right of this page. After your membership is approved, please feel free to join one or more of these groups:

- [Accessibility](#)
 - [Adopters](#)
 - [Authors](#)
 - [Librarians](#)
 - [Researchers](#)
 - [Reviewers](#) or the [OER Center for California](#).
- Those who are interested in becoming open textbook trainers, visit the [Advocate/Trainer ning network](#) for lists of open textbooks and peer reviews visit the [Community College Open Textbook Collaborative](#). The collaborative is a partnership of twelve organizations managing an Open Textbook grant from the William and Flora Hewlett Foundation. Visit the members of our consortium including [Carnegie Mellon](#), [Community College Consortium for Open Educational Resources](#) (more than 200 member colleges), [Connexions](#), [Florida Distance Learning](#), and [nine others](#).

Forum

Ab Kader Reviews "A First Course in Linear Algebra"
Started by Bill Bucklin in [Recommend an Open Textbook for Review](#) May 27.

Welcome to College Open Textbooks Community
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New to this site



See the College Open Textbooks box in the middle of the [Main Page](#).

Ning How-To?

Photo is [question mark 2](#) by [Leo Reynolds](#)
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Groups

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- Adopters of Open Textbooks**
16 members
- Accessibility**
13 members
- OpenTextbook Authors and...**
22 members
- Open Textbook Research**

Future Energy

Course



HACC DIFFERENTIAL EQUATIONS

Autism and Related Disorders
Yale

INTRODUCTION TO ROBOTICS
STANFORD

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2. **iPad and iPhone App Develop...**
Stanford
3. **Understanding Happiness**
TED
4. **Programming Methodology**
Stanford
5. **What is religion?**
The Open University
6. **Ingenuity in the Developing W...**
TED
7. **Core Concepts in Chemistry**
Duke University
8. **Introduction to Statistics**
Harrisburg Area Community College
9. **Introduction to Algorithms**
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Paul Hegarty
- 2. **Mythology**
Gail Lomender, Department of En...
- 3. **Building a Business**

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Ingenuity in the Developing World TED	Introduction to Statistics Harrisburg Area C...	Machine Learning Stanford	Astronomy: Frontiers and... Yale University	International System in the 20... Stanford	Core Concepts in Chemistry Duke University	On a pedestal, celebrity through... The Open University	Prec Math Stan

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Ecosystems

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検索

ウェブ全体から検索 日本語のページを検索

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Google

夕食メニュー マグロ

検索

ウェブ全体から検索 日本語のページを検索



(築地)

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Demand-Pull : オープンな教材の利用促進

- 「必要な人に」
- 「必要な時に」
- 「必要な中身を」
- 「必要な形で」 ← 重要!

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Demand-Pull : オープンな教材の利用促進

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知の料理人としての教師



Carnegie Foundation Retreat 2007

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Faculty Developmentとは、
大学における「教授実践」の
文化や価値観を変えること。

55

Faculty Developmentとは、
大学における「教授実践」の
文化や価値観を変えること。

個々の教員の価値観・教授活動に対する
意識と行動の変容

教授実践コミュニティの形成

教育機関としての大学の意欲的な取り組み

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イノベーティブな実践 ≠ 優れた実践

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イノベーティブな実践は、
より優れた実践へ向けての初めの一步。

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教育実践コミュニティの特性と価値観

実践	Good	Better	Best
コミュニティの特性	Communal 共有的	Collaborative 協調的	Competitive 競争的
価値	Product 現状	Process 改善の過程	Product 理想的モデル

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教育実践コミュニティの特性と価値観

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60

Scholarship of Teaching and Learning

- 教授実践を公開する。
- Peer Reviewを通じた建設的意見交換を行う。
- 互いの実践から学び合い、個人・コミュニティとして教育実践の改善に関する知識構築を行う。

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「互いに学び教え合うこと」、「学ぶために教え、教えるために学ぶこと」の大切さ。

「学びたい」「学んでもらいたい」と切望し、希求しているか？そのような人たちとは、どこで出会えるのか？

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オープンエデュケーションの三構成要素

オープン
テクノロジー

オープン
コンテンツ

オープン
ナレッジ

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Teaching Duetを通じた教育実践知の共有

The screenshot displays the MIT Blossoms website interface. At the top, the MIT logo and 'MASSACHUSETTS INSTITUTE OF TECHNOLOGY' are visible. The main header features the 'MIT BLOSSOMS' logo with the tagline 'Math and Science Video Lessons for High School Classes' and the slogan 'Planning Today - Growing Minds'. A navigation bar includes links for HOME, VIDEOS, ABOUT US, COMMUNITY, RESOURCES, PARTNERS, and NEWS, along with a search bar. The main content area is divided into two sections. On the left, a large video player shows a man in a plaid shirt holding a tray with candles, with the title 'The Towers of Hanoi: Experiential Resource Thinking'. On the right, a 'HIGHLIGHTS' sidebar lists three items: 'Video Lessons from Saudi Arabia' (with a thumbnail of a man in a white thobe), 'New Video Lessons Coming' (with a thumbnail of a globe), and 'Teacher Professional Development BLOSSOMing in the DC Public Schools' (with a thumbnail of a woman). The footer contains the text 'An initiative of MIT's Learning International Networks Consortium' and logos for LINCE and other partners, along with social media icons and the copyright notice '© 2012 Massachusetts Institute of Technology'.

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学部・学科レベルでの教員同士の教育知とノウハウの共有

MIT Mathematics CI Space collaborative space for instructors of communication-intensive subjects

HOME TEACHING TIPS COURSE ARCHIVE DISCUSSIONS SITE HELP

CI Space > Teaching Tips > Presentations > Teaching Presentation Skills

TEACHING PRESENTATION SKILLS

HOW TO TEACH PRESENTATIONS SKILLS

Before any student presentations

After an initial round of student presentations

Useful tricks

- Ask class to generate list of features of a good presentation. Refer to this list when giving feedback on later student presentations.
- You may be able to obtain video equipment to film some student presentations. Seeing a video of yourself in front of an audience can be extremely informative (though often painful and awkward...). To ease the pain, it could be helpful to watch or discuss the video with the student, emphasizing the positive aspects of the presentation.
- If you have students comment on each others' presentations, each presenter is likely to receive the same feedback from multiple people and so is more likely to hear the feedback. To ensure that peer feedback is constructive, monitor the first few rounds and give guidance to individual peer reviewers as needed.

DISCUSSIONS RELATED TO TEACHING PRESENTATIONS:

This page displays all discussions tagged "Presentations" or "Assignments"

Student presentations in teams
March 4th, 2010 by carnahan | Tags: Presentations, team | | 2 Comments >

How to handle students with varying backgrounds/ability
September 22nd, 2009 by sassaf | Tags: Course structure, Presentations, team | | 2 Comments >

RELATED FILES

- Chalk Talk Comments (doc)
Download checked

65

プラットフォームのオープンソース化

Educational Collaboration Space a site for collaborative teaching

WELCOME GOOD PRACTICES DISCUSSIONS COURSE PAGES SITE HELP

Welcome

[Replace the following text with your own front-page text.]

Welcome to the ECS demo site! This platform supports pedagogical collaboration. The platform has three main components, which can be accessed from the maroon bar, above.

- **Good Practices** pages are for current pedagogical wisdom; these pages are fairly static but are expected to improve gradually over time.
- **Discussions** are less formal and more ephemeral than the pages. When discussion generates good ideas, those ideas should be added to the relevant Good Practices pages.
- **Course Pages** are for experimentation. Here can be archived the specific materials and strategies used each term along with commentary on their effectiveness. Successful materials should be linked to the Good Practices pages.

These three work closely together. For example, an idea from a discussion may be tested in a course, discussed further, revised and retested, and finally added to the Good Practices pages (where it may continue to evolve). This platform is very flexible: your site is not restricted to the structure described above.

► **Get Started!** <- Click maroon heads to see more text

PAGE TREE

Show | Hide | Expand all | Collapse all

- Educational Collaboration Space
 - Discussions
 - Welcome
 - Good Practices
 - Course Pages
 - Site Help

LATEST UPDATES

- Welcome
- Pedagogical Topic 1
- Edit and Create Pages
- 19.101 FA10 Loesch
- 19.104 FA10 Who

MIT MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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教育的知識や経験をどのように扱い、
どのように表象すればいいのか？

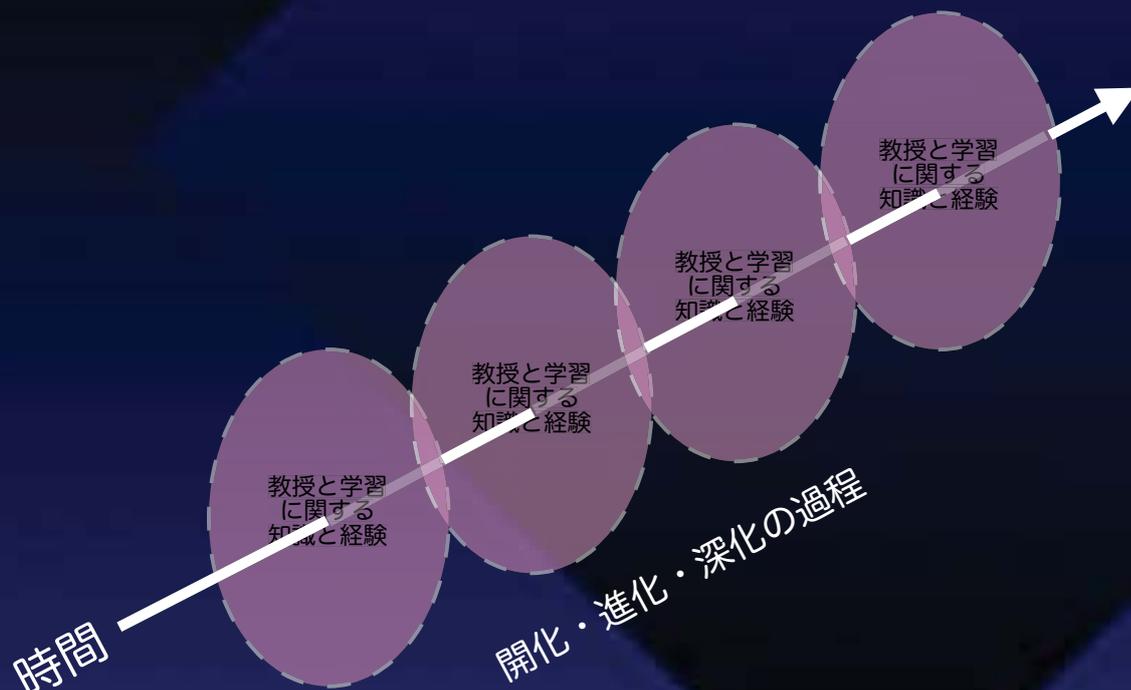
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ここでいう「知識(ナレッジ)」とは？

教授と学習に関する
経験的知識

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このような知識と経験を継時的に記録し蓄積していくことは容易ではない



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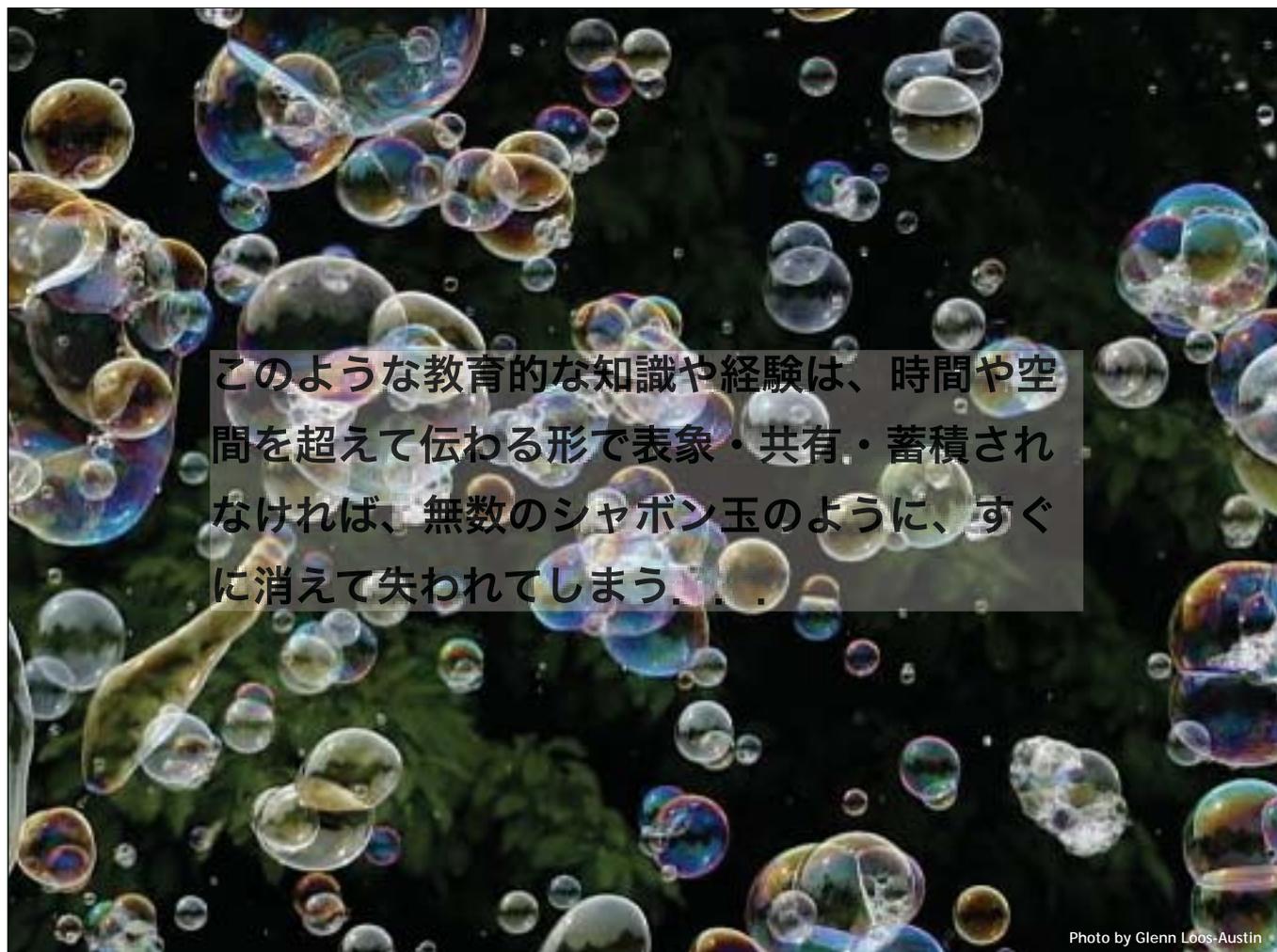
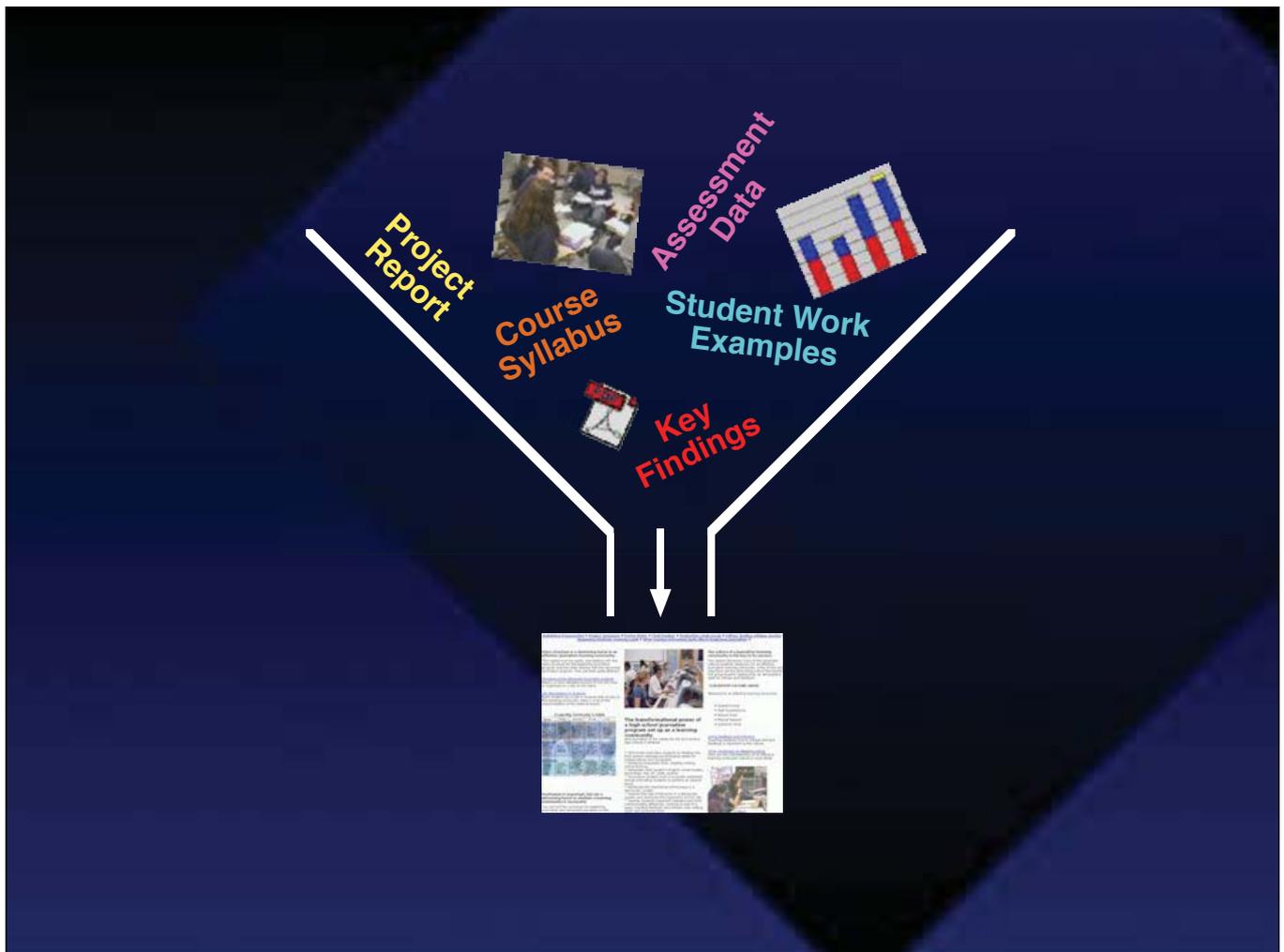
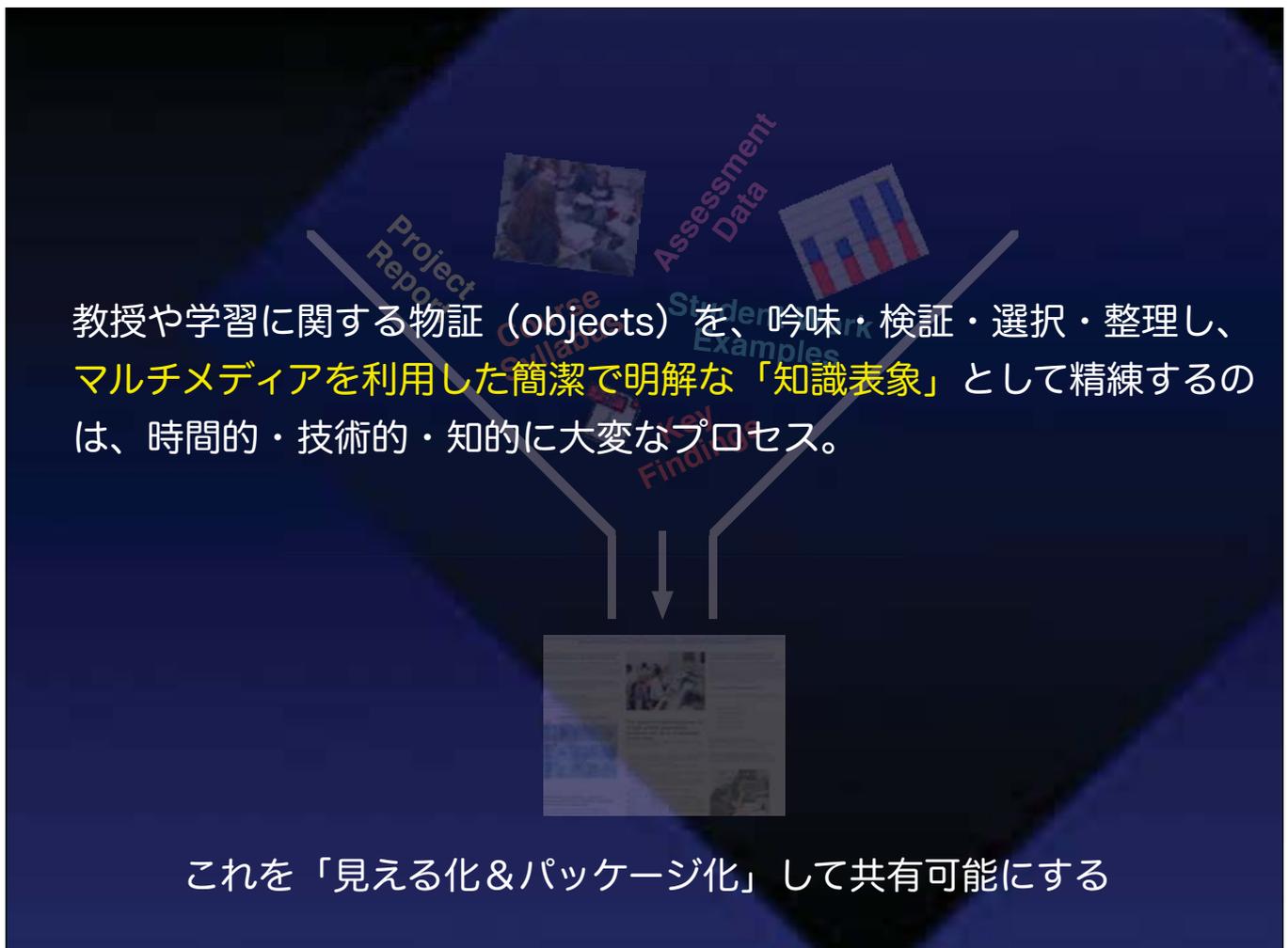


Photo by Glenn Loos-Austin

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KEEP Toolkit: 教育知識表象・共有テクノロジー



オープンソース
無料利用サービス
(2009年にMERLOTへ)

By カーネギー財団
知識メディア研究所



KEEP Toolkitを使って、世界中の38,000人以上の教育者や学生が、既に140,000以上もの教育的知識の表象(ナレッジ・オブジェクト)を生み出した。



d'Arbeloff Interactive Mathematics Project (d'AIMP): Mathlets

Haynes R. Miller

Department of Mathematics, MIT

Computer Manipulatives in an Ordinary Differential Equations Course
A paper in *Journal of Science Education and Technology* (2007, PDF)

For what discipline, course, intended learning objectives and intended learners are these learning materials designed?

The basic undergraduate differential equations course at MIT, 18.03, is taken by some 85% of all undergraduates in their freshman or sophomore year. This course faces several challenges common to such courses across the country. A grant from the d'Arbeloff Fund for Excellence underwrote a project to address these challenges. A principle outcome has been the creation of a suite of Java applets for use as lecture demonstrations and, most importantly, as the basis for homework assignments. These applets can be used directly or in modified form in down-stream courses, enhancing transfer.

18.03 Differential Equations (Spring 2006, OpenCourseWare)
See the problem sets (in Assignments) and the Mathlets used (in Tools).



What pedagogical, teaching or learning problem(s) were you trying to solve by developing these learning materials? For example, was this designed to help you explain or illustrate a concept that students find hard to learn?

Three dilemmas face basic university mathematics courses, especially differential equations courses.



Introduction (8 mins.)

How did you, or do you, use these learning materials when teaching?

These applets are used as lecture demonstrations and, more importantly, as the basis for homework assignments. Each applet represents information in several forms, linked by placement or color. This linkage helps convey the connection between physical system, the parameters specifying the differential equation, and the graphical representation of solutions. System parameters or initial values are varied by means of sliders, and the effect on solutions is represented dynamically. Students enrich their understanding by making measurements and then verifying them by calculation.

Why do you believe these methods and learning materials are more effective in accomplishing your learning or teaching goals than other methods and materials? Please provide student work examples and/or other evidence that

What refinements have you made (and/or are you planning to make) to the learning materials?

Work on creating these manipulatives began in Fall 2000. They were initially written in True Basic by Yu Min. In Spring 2002, they were used in homework and for classroom demonstrations in a large differential equations class. They were presented as executables and the students had to use them in on-campus computer clusters. In Fall 2002, Deborah Upton joined the team and began an intensive formative assessment of the manipulatives as they existed at the time. This resulted in numerous improvements that were incorporated in time for use in homework assignments in Spring 2003. An extensive survey and interview study was conducted with students to learn about the way in which they used the manipulatives in that class. These data led to a better understanding of how students responded to this pedagogical medium, and to substantial improvements in the applets themselves. The manipulatives have been a staple in this course since then. In Spring 2002, a programmer began porting the code to Java, with a second programmer completing the project by Fall 2005.

Since then, many technical improvements have been introduced, taking better advantage of the power of Java. Moreover, many new applets have been written, often reaching beyond the limits of the curriculum of 18.03. (Examples: Series RLC Circuits was built in Spring 2007 for use 6.02, Electromagnetism, and Nyquist Plot was built with advice from Karen Williams in Fall 2008 for use in her Astronautics course.)

What advice would you give other faculty in using these materials/methods in their own courses?

1. Don't overuse these in lecture. Think carefully about what you want to illustrate, and practice your act.
2. You have to explain every component you want students to take note of, and talk through what you are doing, slowly and carefully.
3. Integration into homework is more effective than use in lecture. Use in lecture can acquaint students with a tool in

Mathletsプロジェクトに関するオープンナレッジ

MIT OpenCourseWare

Transforming Introductory Physics Courses

From a Large Lecture Classroom to a Student-Centered Active Learning Space
John W. Balch, Peter Dourmashkin, David Lister, and Judy Yehudi
Massachusetts Institute of Technology Department of Physics

MIT Center for Educational Computing Initiatives

Such Physics is a new focus for teaching physics education research (PER) that includes both lecture and conceptual models of physical phenomena. The format is centered on an active learning approach - that is, a highly collaborative, hands-on environment, with extensive use of related images and analog equipment.

What is the focus of your investigation?

The motivation for moving to a different mode of teaching introductory physics courses was twofold. First, the traditional lecture and recitation format was showing an increasing decline in student success rates. At MIT the traditional recitation format had a 40-50% attendance rate, even with good lecturers, and a 10% or higher failure rate. Second, a range of educational innovations in teaching had been developed that had the potential to improve student learning. Finally, unlike many educational institutions in the US, we cannot do away with the traditional lecture format. Our goal at MIT was to create a laboratory component for over three decades. Experiments were something we had been anxious to introduce.



Fig. 1. Introductory physics students in the d'Arbeloff Studio Classroom.

What was your approach and what tools were combined to facilitate the student understanding of the subject matter?

The TEAL project is centered on an active learning approach, aimed at helping students visualize, describe, and understand physical phenomena. This is a specially designed classroom with extensive use of related equipment. This collaborative, hands-on approach merges lectures, recitations, and disjunct laboratory experiences in a media-rich environment. In the TEAL classroom, the students sit together at round tables (Fig. 1), with a total of three tables. Five hours of class per week is broken into three, two-hour sessions and a one-hour problem-solving session. The students are exposed to a mixture of presentation, discovery experiments, and hands-on experiments, and collaborative exercises. This design experiments and computer-aided analysis of experimental data provide the students with direct experience of many electromagnetic phenomena.

What resources / references have you found helpful?

TEAL also incorporates advanced labs and three 100A of Donnan-Darwin-Bryant Institute by Professor Jon Wilson. This project has been funded and supported in part by a number of other agencies, including the North Carolina State University's Center for Learning and Assessment, the National Science Foundation, and the MIT Research Program on Learning and Assessment. Our approach is most similar to the SCALE program at UCSD.

What resources / references have you found helpful?

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MERLOT

Neuroscience for Kids

http://faculty.washington.edu/chudler/neurok.html
Eric H. Chudler, Ph.D., University of Washington, Seattle, WA

E-mail: chudler@u.washington.edu

Neuroscience for Kids



Motivation

Neuroscience is a rapidly changing field and access to educational material about the brain and nervous system is limited. Neuroscience for Kids is a resource that provides students and teachers with interactive on-line material and hands-on, off-line activities for learning about the anatomy and physiology of the nervous system.



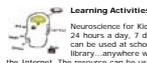
Background

Neuroscience for Kids has been developed for students and teachers at all levels, although most of the material is designed for middle school students and teachers. The site is intended to be used as a supplement to class instruction. Students and teachers explore at their own pace as they learn about many neuroscience topics including brain structure and function, neurological disorders, the senses and drug effects.



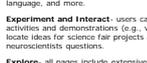
Impact of Use on Teaching and Learning

To evaluate the effectiveness of Neuroscience for Kids on student attitudes toward science and neuroscience content knowledge, the entire web site was distributed via CD to 52 teachers (approximately 3,194 middle school students) across the country. Each teacher was provided with a maximum of 5 CDs per class. Student content knowledge of neuroscience concepts improved after use of the resource, but student attitudes toward science remained unchanged.



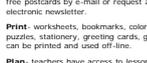
Learning Activities

Neuroscience for Kids is available 24 hours a day, 7 days a week. It can be used at school, home or the library...anywhere with access to the Internet. The resource can be used to:



Experiment and Interact

Users can view on-line activities and demonstrations (e.g. visual illusions), locate ideas for science fair projects and ask neuroscientists questions.



Explore

all pages include extensive links to other resources on the WWW.



Play

on-line and off-line games, demonstrations and quizzes permit users to learn in an entertaining environment. Students and teachers can also send free postcards by e-mail or request a monthly, electronic newsletter.



Print worksheets, booklets, coloring books, puzzles, stationary, greeting cards, games, quizzes can be printed and used off-line.

Plan: teachers have access to lesson plans and materials that can be used inside or outside of class.
Ask: a group of scientists in the Neuroscientist Network is ready to answer your questions about the nervous system.



Tips for Teaching

Students and teachers can work through the Neuroscience for Kids material at their own pace. If visitors are interested in basic information about the functions of the brain, they can begin with the link to "Explore the Nervous System." To reinforce concepts related to neuroanatomy and neurophysiology, students and teachers can select from many hands-on activities in "Experiments and Activities." Links to other Internet web sites and resources for further exploration about the nervous system are also provided. Visitors can sign up to receive the monthly, electronic "Neuroscience for Kids Newsletter."



Explore the Nervous System

Experiments and Activities
Neuroscience for Kids Newsletter



Reflections

Neuroscience for Kids is a collaborative effort between neuroscientists and K-12 educators. Neuroscientists bring the content knowledge to the project while educators are aware of the best practices that make learning enjoyable. It is through this type of partnership that exemplary Internet resources can be developed for students and teachers.

This electronic portfolio was created using the XML "Snapshot Tool", a part of the KEEP Toolkit™, developed at the Knowledge Media Institute of the Norwegian Foundation for the Advancement of Teaching. Terms of Use - Privacy Policy

公開された教材の開発者と利用者の双方が、互いの教育的な知識や経験を共有することで、より効果的な利用が促進される。

ユーザー名: [] パスワード: [] [ログイン]

KEEP Toolkit

HOME | MOSTについて | MOST活用プログラム | スナップショットギャラリー | ユーザーガイド

スナップショットギャラリー

現在の登録者数480名 | コミュニティ83件 | スナップショット1401件

スナップショットギャラリー

- 検索
- 新機能FDレポートフェーズ (新機能FD)
- コースレポートフェーズ
- 授業/コースの改善
- 新機能FD活動
- Web公開成果
- SQLの事例

パスワード再発行 | 利用規約 | プライバシーポリシー | ライセンス | MOSTヘルプ

MOST 講習会実施中

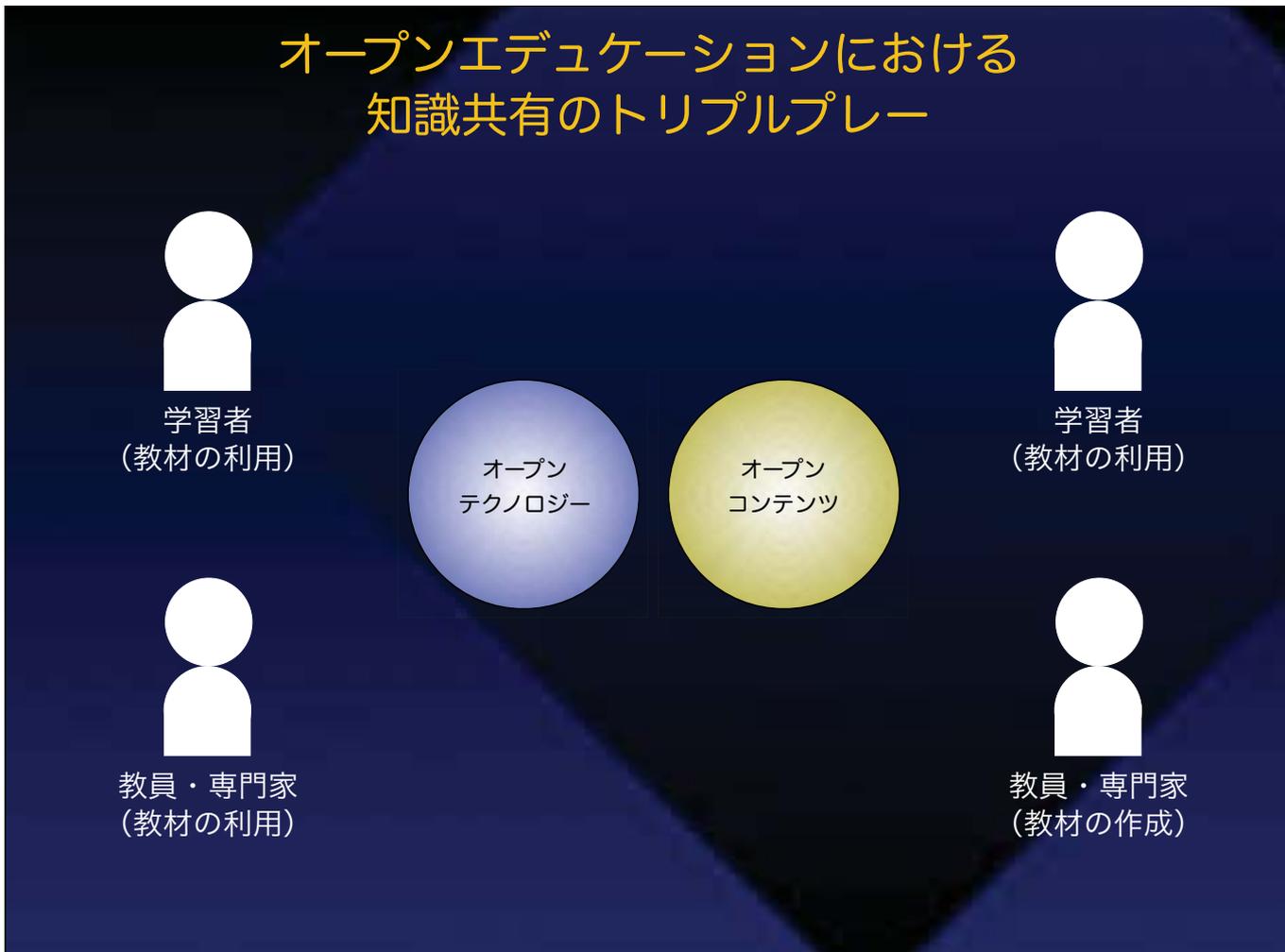
お問い合わせ

新機能FD活動

新機能FD活動に関する特種的なスナップショットを紹介します。

スナップショットの作成例

<p>OCWリソースをシステムと連携させた学習プラットフォームの構築</p> <p>平山節子先生 (聖野大学 看護保健学部)</p>	<p>山口大学共通教育における学習コミュニティの構築と評価の事例</p> <p>小松香穂理先生 (山口大学 工学情報機構) ほか</p>	<p>IT学習システムを併用して学習させた学習プラットフォームの構築</p> <p>藤原正樹先生 (仁愛女子短期大学、福井県学習コミュニティ推進協議会 FOCチーム) ほか</p>
<p>MOOCの自己学習を目的とした電子書籍の活用と評価に関する一考察</p> <p>長瀬美穂先生 (関西大学 教育開発支援センター) ほか</p>	<p>愛媛県立高松技術大学における「実社会教育」の推進と実践</p> <p>栗田北幸先生 (愛媛県立高松技術大学 保健科学部 看護学科)</p>	<p>自治体教育者によるプログラムの開発と評価</p> <p>高本美子先生 (総合研究大学院大学 学融合推進センター) ほか</p>



オープンエデュケーションにおける 知識共有のトリプルプレー



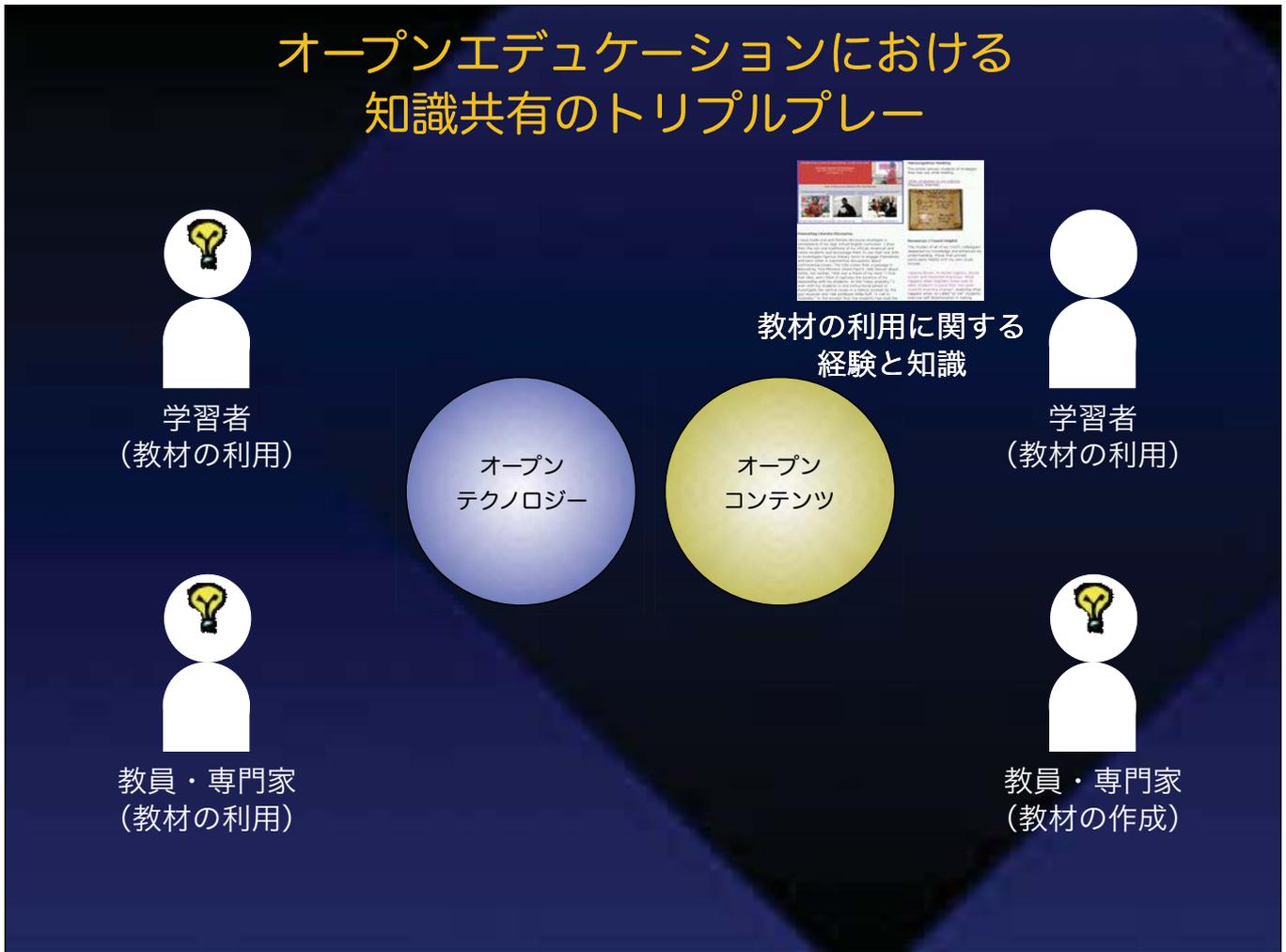
81

オープンエデュケーションにおける 知識共有のトリプルプレー



82

オープンエデュケーションにおける 知識共有のトリプルプレー



オープンエデュケーションにおける 知識共有のトリプルプレー



オープンナレッジを巡る課題

- 万人に役に立つ知識 vs. 特定の人に役に立つ知識
- いかにか知的な好奇心を刺激し、積極的に「より良い教えと学び」を目指した実践を促すか？
- 効率的・効果的な教育に関する知識共有の促進とその検証を、どのように行うか？
- 人と知識、人と人（さらに人と教材やツール）をどのように最適に結びつけるか？

85

Teaching & Learning Commons
Developed by the Knowledge Media Laboratory of The Carnegie Foundation for the Advancement of Teaching

Commons Manifesto

The Teaching and Learning Commons is an intellectual community space provided to enrich and encourage exchange of knowledge about teaching and learning.

We acknowledge the growth in representations of educational knowledge from instructors at all levels, increasing numbers of digital learning objects, and large and small efforts at educational transformation. We thus offer this space as a place in which teachers, learners, and institutions can engage in **knowledge building and sharing**. To participate in this collective effort, you are invited to:

- create representations of effective teaching practice
- share these representations with the community
- read, understand, and comment on others' work
- build on the work of other community members
- and, based on what is learned, re-create new representations to contribute to the commons.

A Circle of Knowledge Building & Sharing

Latest Blog Post

Group Authoring for Teachers and Learners
Feb. 28 2007

There are different kinds of group-authoring tools available to educators. Wikis appear to be the most ubiquitous and offer several, well known benefits for students and more...

Featured KEEP Work

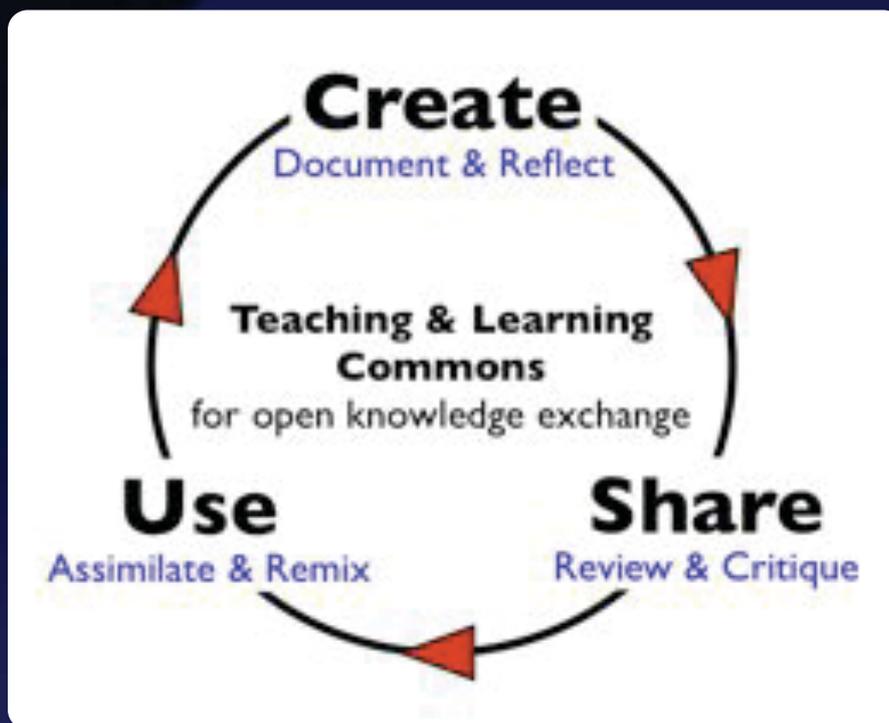
First Grade Snapshot by Charles Duarte

Charles Duarte, a first grade teacher in Queen Creek, AZ, has participated in developing a practitioner research group consisting of teachers with Desert Mountain elementary school. The area of study he has chosen to focus on is the potential of moving toward a paperless classroom. Despite some obstacles in achieving an entirely paperless environment, Charles' goal was to intensify his focus on student use of technology in the classroom and how that impacts student engagement and overall performance. He took it upon himself to put a primary educator's spin on the use of the snapshot to benefit both students and parents. more...

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86

教育的知識の「生成—共有—利用」を循環させる



A Circle of Knowledge Building and Sharing
(Iiyoshi & Richardson, 2008)

87

公開・共有されたカリキュラム・教材・教育テクノロジーが、「どのようにデザイン・開発・利用されたか」という経験や知識は、共有され蓄積されなければならない。

これによって初めて、「教育イノベーション」を目指す実践コミュニティの形成を通じて、オープンナレッジになる。

1. 教育テクノロジーの質的改善
2. 教育テクノロジーの利用方法の改善
3. 個々及び全体の教育的知識の増大

88

テクノロジーによって支援された 「教えと学びの実践コミュニティ」の構築に向けて



大学、教員、学生が、それぞれの立場でオープンエデュケーションに参加

89

オープンエデュケーション: Education 2.0への序章



- 教育システムの根本的な再構築を促進
- 協調的な教えと学びを可能にする「オープン」な教授・学習環境の実現
(オープンテクノロジーとオープンコンテンツを無料で自由に使うことが可能になり、互いの知識や経験を共有しながら、ダイナミックに最良の学習を追求できる)
- 大切なのは、学ぶ者と教える者の双方が「より良く学びたい・教えたい」という**情熱**を持続させること！

90

「Eの時代」から「Oの時代」を経て「Cの時代」へ

● Eの10年：1990年代

- e-コマース、e-ビジネス、e-パブリッシング、e-ラーニング
- Gopher (1991)、WWW (1991)、Mosaic (1993)、XML (1996)、WebCT & Blackboard (1997)、他

● Oの10年：2000年代

- オープンソース、オープンシステム、オープンスタンダード、オープンアクセス、オープンエデュケーション、オープンリサーチ、オープンイノベーション
- WEB 2.0、Wikipedia、YouTube、Blogs、OpenCourseWare、iTunes U、他
- 「解放テクノロジー」(J. M. Unsworth)

● Cの10年：2010年代

- Collaboration、Collectivity、Communities、Commons、Cloud
- Social Networking Service (SNS)、Twitter、Social Learning、Meta University

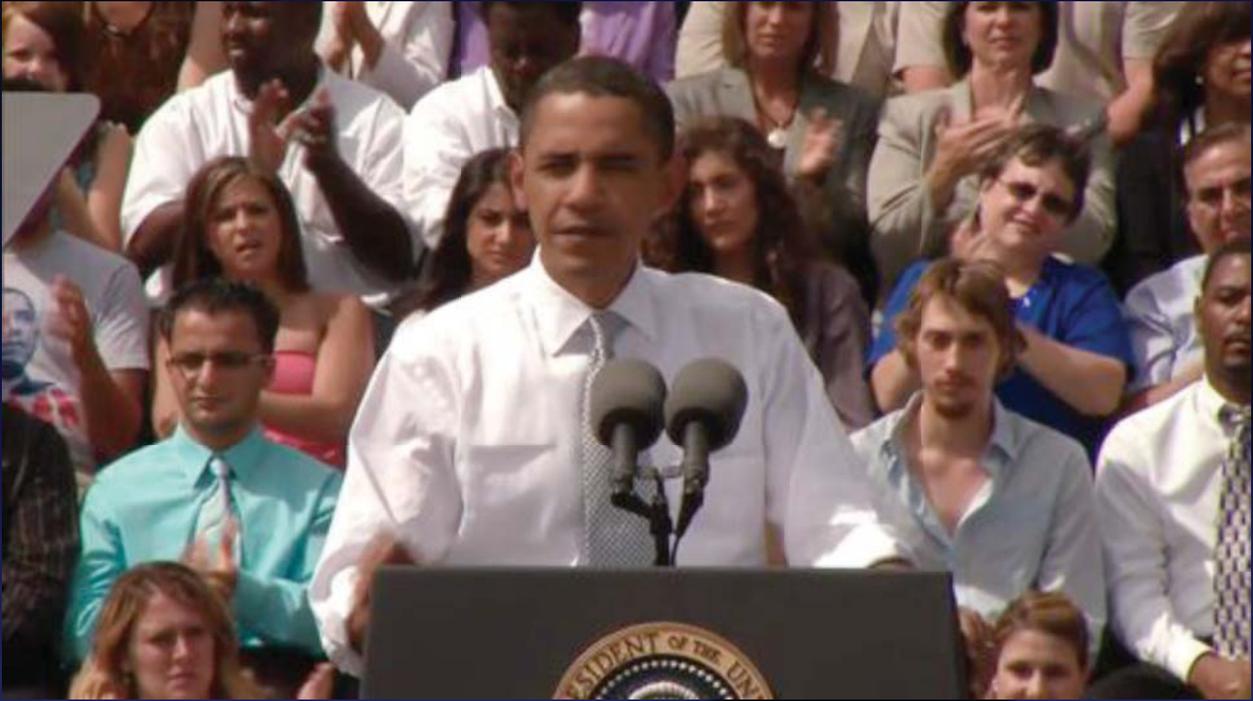
91

オープンエデュケーション「次の10年」： 実験段階から実証段階へ

- オープンエデュケーションの主要な牽引力となってきた民間助成財団や教育振興財団による助成の縮減
- 各国政府・国際機関などによる実際的なオープンエデュケーション利用の推進（現実の教育問題・課題への解決策として）
- 新たなオンライン高等教育システムの台頭、国際的な高等教育制度の見直しと刷新、既存の大学の進化と淘汰などを加速
- よりグローバルなプラットフォーム、ツール、スタンダードの普及との相乗効果
- より効果的・効率的なオープンエデュケーションのモデルや開発プロセスの実践的模索

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オープンエデュケーション： 実験段階から実証段階へ



(Macomb Community College, 2009)

93

アメリカの（世界の？）高等教育の未来

- 高等教育を受ける人々の数は増加し続けるが、フルタイムで4年制の大学に通う学生の数は減少する。
- より安価・便利・柔軟な高等教育システムへのシフト。
- 3年以下で学位が取れる学士プログラムの台頭。
- 1年のリメディアル教育プログラムを充実させ、よりcollege-readyな学生を増加させる。
- 2020年以降、（現在）人種的マイノリティーの学生が、大学で過半数を占めるようになる。
- オンライン型やブレンディッド型の教授-学習活動（授業のディスカッション、オフィスアワー、講義、宿題・課題）が普及する。

94

「グローバル化・フラット化する世界」において求められる 21世紀の教育におけるパラダイム転換

Supply Push → Demand Pull

流通・販売

小売店 → オンラインストア

メディア

マスメディア → パーソナルメディア

広告

マスメディア → ネット検索付帯

教育

大量生産的・画一的な知識や
技能の習得

コミュニティーベース
興味・能力・必要に応じたオン
デマンドな知識・技能の習得

21世紀の教育におけるパラダイム転換

Supply Push → Demand Pull

教育

大量生産的・画一的な知識や
技能の習得

コミュニティーベース
興味・能力・必要に応じたオン
デマンドな知識・技能の習得

高等教育 1.0 → 高等教育 2.0

現代社会において、個々人が、知識的・技能的・職業的基盤を確保するために、十歳代後半から二十歳代前半までの四年間を「壁に囲まれた」大学で過ごせば「高等教育は修了」というモデルは、機能しなくなりつつある。「高等教育のロングテール化」が不可避。

オープンエデュケーションを活用した新たな高等教育モデルの模索

一人ひとりの無限の可能性のための
次世代教育環境 = オープンエデュケーション

97

「ネット社会になり、情報はどこでも入手できる。そう
なると、大学の使命は、学問を通じての師弟関係に
収斂されていくのではないか」

- ピーター・ドラッカー

だが、その「師弟関係」すらもネットは変えつつある...

98

21st century education is about

- creativity
- cultural awareness
- problem solving
- innovation
- civic engagement
- communication
- productivity
- collaboration
- accountability
- exploration
- initiative
- responsibility
- leadership

Today, teachers must be, and learners must be

- innovators
- mentors
- entrepreneurs
- motivators
- illuminators
- catalysts
- teachers
- researchers
- synthesizers
- innovators
- explorers ...

99

open study

Username or Email Password Log In Facebook Login

Tutoring Redefined

Get free help instantly from over 100,000 students just like you.

Get Started ▶

Simple, Fast, and Free.

Get live help
Need help? Ask a question, and get an answer from a student just like you.

Meet students
Tired of studying alone? Connect with learners studying the same things you are.

Become a hero
Help students when they need it most and achieve legendary status among learners worldwide.

100

OpenStudy : 世界中の学生が学び合い教え合う



101



をテキストにしたポケゼミを通じ、京大の1年生たちは、何を感じ考えたか？

「今この教育界の激動の時代に、大学の教育も変革を余儀なくされると思います。その真っ只中にいる中で、私たち学生の身分ではその変革を見ているしかありませんが、ただそれに振り回されるのではなく、主体的に考え、取捨選択することが大切であろうと思います。変革の背景をきちんと理解していると、教育の目指す方向性がよりはっきりと分かり、より効率的に学ぶことができると思います。」（工学部1年 中村拓哉君）

「（オープンエデュケーションを）積極的に利用したいと思った。具体的には、大学の講義の補助教材として使ってみたいと思う。（中略）京大OCWなどを利用して、講義の内容を完全に理解し、その理解をさらに深めたいと思う。」（文学部1年 足利聡太君）

「ある事柄について本当に学びたい者同士がオンライン上でコミュニティを作り、議論などを交わしながら積極的に学ぶというのは、これまでには存在しなかった学習形態である。OpenStudyを通じてこのような学習形態を構築すれば、従来の何倍も効率よく、そして楽しく学習できることは間違いないと感じた。また、これは何も学ぶ側に関してのみ言えることではなく、教える側に関しても言えることである。」（経済学部1年 宮垣徹哉君）

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「ウェブが世界中に広まっていき、インターネットにアクセスできるという状況ならば、誰もが瞬時に情報を得ることができるという便利な社会になり、今や、インターネットは、我々の生活に欠かせないものになりました。それは、物心ついた時からインターネットが存在していた時代に生まれた私が、インターネットにアクセスできない世界など想像できないと覚えることからわかります。そんな世の中に定着しているインターネットがあるからこそ、それを教育にいかし、学びたいという気持ちとやる気さえあれば、どこまででも貪欲に学ぶことができるという環境が整えられていっているのだと感じました。これは、「学ぶ」ということにおいて、貧富の格差や地域の格差などの障害が取り除かれるということで、つまりは、これからの時代は、「やる気」によって格差が生まれてくることになるのでしょう。」

- 小池美咲さん（関西学院大学久保田ゼミブログより抜粋）

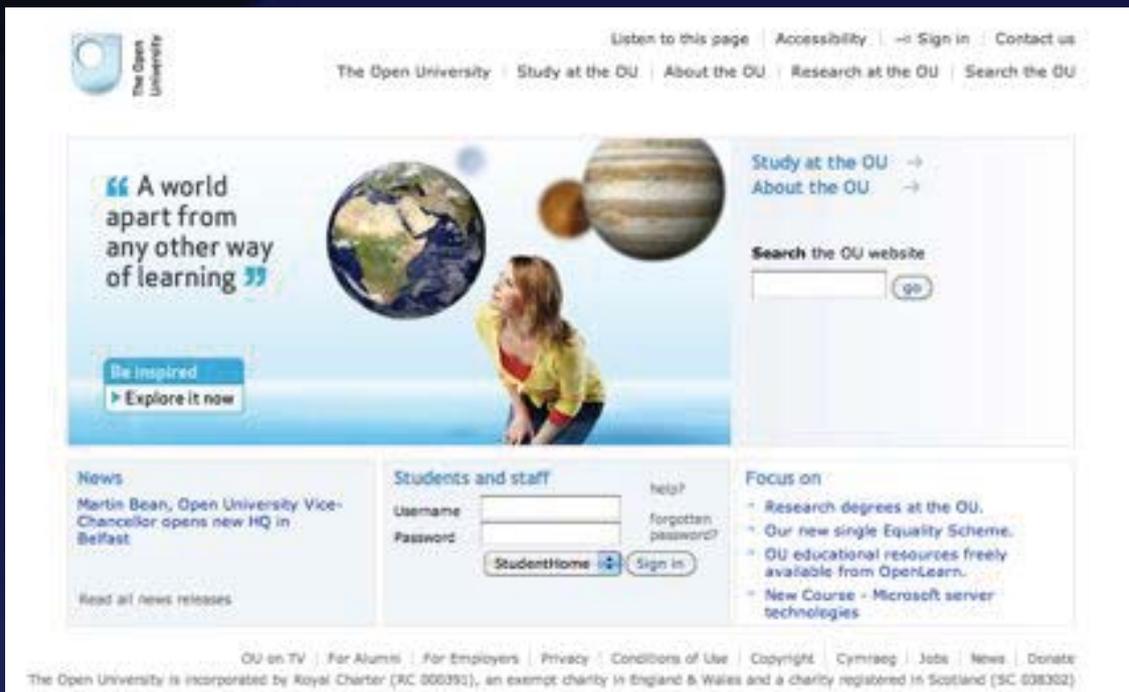
「たしかにこの時代、学校や塾で教わることだけが学ぶことのすべてではありません。私は、高校や大学を出たら学ぶことは終わりだと思っていましたが、そういうわけにもいきません。本ではこの時代を「個人が一生学び続ける時代」と表現しています。この時代にふさわしい教育が21世紀のオープンエデュケーションです。オバマ大統領がオープンエデュケーション宣言をしたことによって、アメリカはプロジェクトを立ち上げ、オープンエデュケーションに大きな期待をしています。日本ではあまりオープンエデュケーションと聞かないのでまだまだアメリカに遅れているのかな、と思いました。」

- 角谷奈美さん（同上）



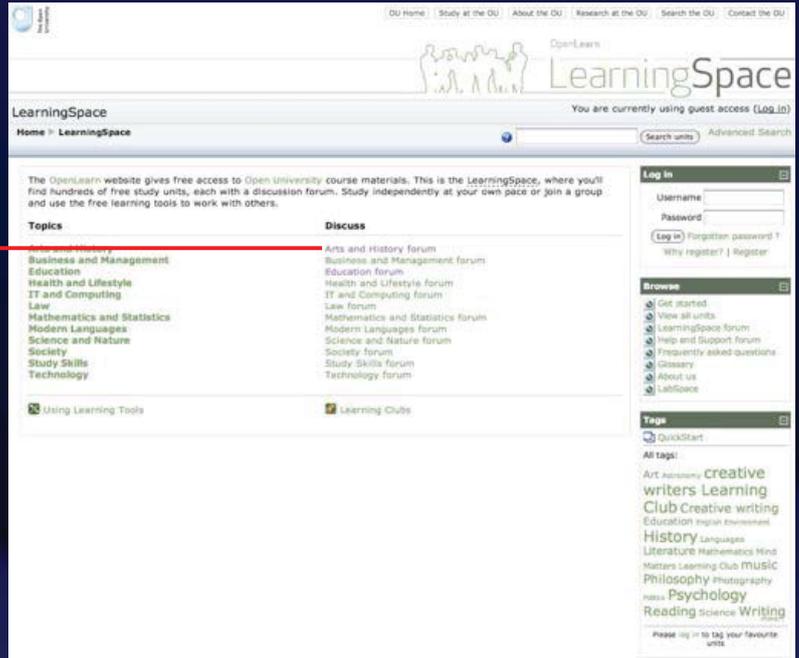
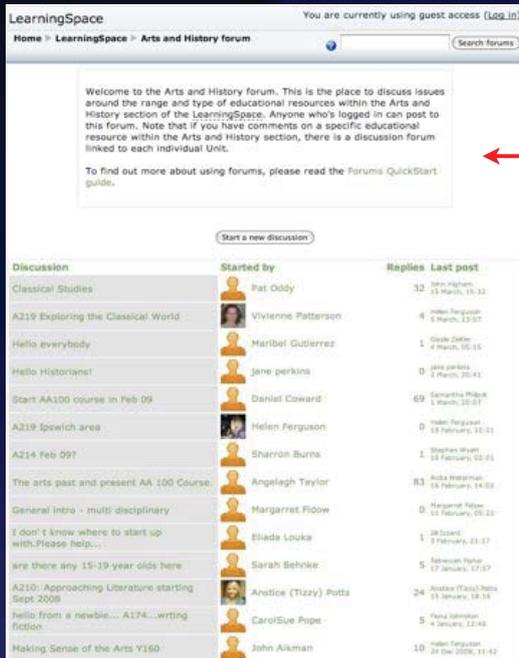
を読んで、今の大学生はどう思ったか？

UK Open University



UK Open University

OpenLearnプロジェクト

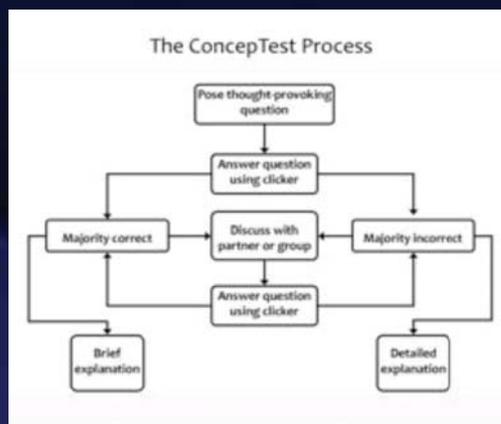
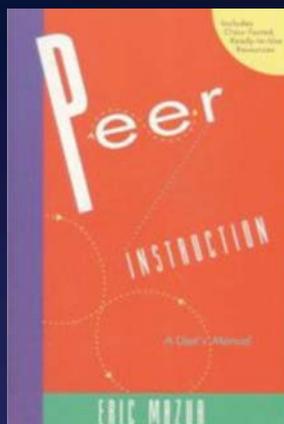


- Open Universityの教材の一部を公開
- 学習コミュニティ作りを支援
- LMSは、Moodleを利用

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Peer Instruction

基本概念的な概念や手法に対して学生の注意を集中させながら、講義中の学生同士のインタラクションを通じ深い理解を促す教授・学習方法



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学習情報分析を利用しアクティブな協調学習を最適化

The image displays three screenshots of the Learning Catalytics platform. The top-left screenshot shows a question interface with a diagram of a light reflecting off two mirrors. The top-right screenshot shows a question about a probability distribution with a tree diagram. The bottom screenshot shows a class roster with columns for student names, scores, and participation status.

Prof. Eric Mazur's Group
@Harvard University

映画 "Minority Report" 教育版?

Massive Open Online Course

The screenshot shows the course page for 'Introduction to Artificial Intelligence' at Stanford University. It features the course title, instructors' names (Sebastian Thrun and Peter Norvig), and a video player for the first unit.

INTRODUCTION TO Artificial Intelligence

The instructors

Sebastian Thrun
Sebastian Thrun is a Research Professor of Computer Science at Stanford University, a Google Fellow, a member of the National Academy of Engineering and the German Academy of Sciences. Thrun is best known for his research in robotics and machine learning.

Peter Norvig
Peter Norvig is Director of Research at Google Inc. He is also a Fellow of the American Association for Artificial Intelligence and the Association for Computing Machinery. Norvig is co-author of the popular textbook 'Artificial Intelligence: A Modern Approach'. Prior to joining Google he was the head of the Computer Science Division at NASA Ames Research Center.

Unit 0w, 1 Introduction

- 世界中から10万人以上が登録
- 学習評価サービスも提供
- コース修了者には認定書を発行

The screenshot shows an article on CollegeDegrees.com titled 'Stanford to Experiment with Massive Open Online Course'. The article discusses the benefits of MOOCs and mentions that Stanford University will be offering an AI course this fall.

COLLEGEDEGREES.com — School Partner Programs

Stanford to Experiment with Massive Open Online Course

Since the advent of online learning, tech-savvy educators in the realm of higher education have been experimenting with its possibilities. Right now, one of the newer applications of online education has been massive open online courses, or MOOCs. MOOCs allow one or more facilitators and/or educators to host a course that can be accessed by an unlimited number of people at any location, provided they have internet access. The MOOC can be a one-day or week-long course, or a full-fledged, semester-long course. MOOCs are "open" in the sense that participants do not have to pay for the course, and are usually only required to register.

Stanford University will be experimenting with a MOOC this fall by allowing open online access to a course titled Introduction to Artificial Intelligence taught by computer science professor Sebastian Thrun and Google research director Peter Norvig, according to the *Chronicle of Higher Education*. The course on artificial intelligence is already a popular one at Stanford, drawing in about 200 students for the classroom-based course. Thrun is hoping that by bringing the class online, he and Norvig can create the largest course on artificial intelligence ever taught, according to his [video announcement](#).

Massive Open Online Course: MITx

MIT launches online learning initiative

'MITx' will offer courses online and make online learning tools freely available.

News Office

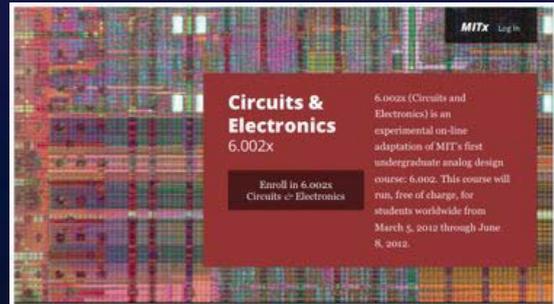
December 19, 2011

Share |

MIT today announced the launch of an online learning initiative internally called "MITx." MITx will offer a portfolio of MIT courses through an online interactive learning platform that will:

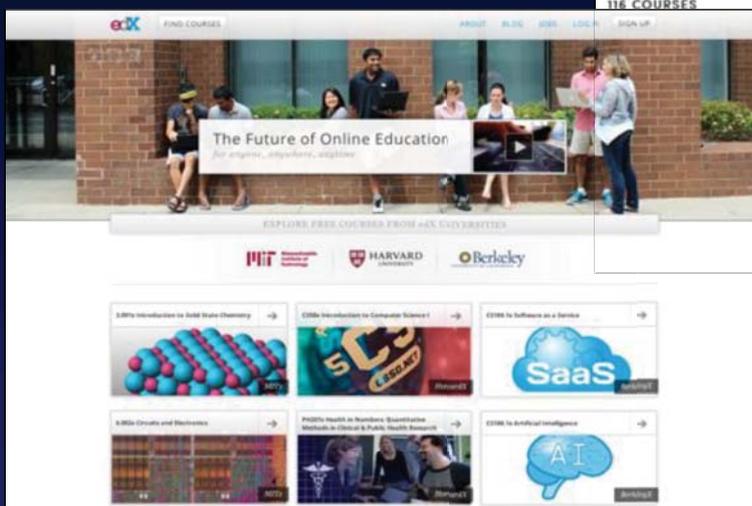
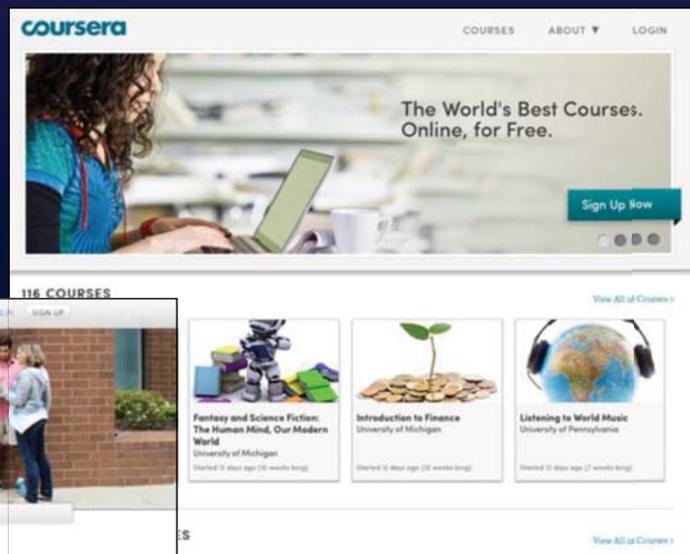


- organize and present course material to enable students to learn at their own pace
- feature interactivity, online laboratories and student-to-student communication
- allow for the individual assessment of any student's work and allow students who demonstrate their mastery of subjects to earn a certificate of completion awarded by MITx
- operate on an open-source, scalable software infrastructure in order to make it continuously improving and readily available to other educational institutions.



MOOC Wars? Coursera vs. edX

スター教師たちが参戦する
「教えのバトル・ロワイヤル」



大学 (組織) → 教員 (個人)
というシフト



Principles of Public Health

Zuzana Bic

Principles of Public Health introduces the major concepts and principles of public health and the determinants of health status in communities. Emphasizes the ecological model that focuses on the linkages and relationships among multiple natural and social determinants affecting health.



Next Session:

January 2013 (10 weeks long)

[Sign Up](#)

36 20 286
 Tweet +1 Like

Workload: 9-12 hours/week

About the Course

Principles of Public Health introduces the major concepts of public health and the determinants of health status in communities. The course emphasizes the ecological model that focuses on the linkages and relationships among multiple natural and social determinants affecting health. As a relative concept, the health of populations is assessed through comparisons of temporal, spatial, and demographic dimensions of disease burden. The goal of public health is to understand why and how different populations carry different kinds and amounts of disease burden, and to use that knowledge for improving health by preventing disease.

PH207x: Health in Numbers: Quantitative Methods in Clinical & Public Health Research *HarvardX*

[REGISTER FOR PH207X](#)



overview

ABOUT THIS COURSE

Quantitative Methods in Clinical and Public Health Research is the online adaptation of material from the Harvard School of Public Health's classes in epidemiology and biostatistics.

Principled investigations to monitor and thus improve the health of individuals are firmly based on a sound understanding of modern quantitative methods. This involves the ability to discover patterns and extract knowledge from health data on a sample of individuals and then to infer, with measured uncertainty, the unobserved population characteristics. This course will address this need by covering the principles of biostatistics and epidemiology used for public health and clinical research. These include outcomes measurement, measures of associations between outcomes and their determinants, study design options, bias and confounding, probability and diagnostic tests, confidence intervals and hypothesis testing, power and sample size determinations, life tables and survival methods, regression methods (both, linear and logistic), and sample survey techniques. Students will analyze sample data sets to acquire knowledge of appropriate computer software. By the end of the course the successful student should have attained a sound understanding of these methods and a solid foundation for further study.



Course Number	PH207x
Classes Start	Oct 15, 2012
Classes End	Jan 18, 2013
Estimated Effort	10 hours/week
Prerequisites	None

Real Credits by MOOCs?

COURSERA

Supported by
**BILL & MELINDA
GATES foundation**

American Council on Education to Evaluate Credit Equivalency for Coursera's Online Courses

We are pleased to have recently announced that we have begun working with the American Council on Education (ACE) to initiate a credit-equivalence evaluation of a select few of the courses offered on Coursera.

This new third party evaluation, conducted through ACE's College Credit Recommendation Service (ACE CREDIT®), has the potential to make these select courses completed on Coursera eligible for college transfer credit at institutions choosing to accept the ACE recommendations.

ACE CREDIT® is a recognized authority in assessing non-traditional education experiences and helping students gain credit for courses and exams taken outside traditional degree programs. ACE CREDIT®'s review process enlists a team of academic faculty to assess courses and exams for the purpose of making college credit recommendations. These recommendations are generally accepted by more than **2,000 colleges and universities** in the US, opening the possibility for students enrolled at one of these institutions to transfer credit into their degree programs. The decision to accept ACE CREDIT recommendations is fully subject to the policies of the school and degree program a student wishes to apply it towards.

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The New York Times
The Opinion Pages

ROOM for DEBATE

Search All NYTimes.com

MAY 6, 2013

Got a Computer? Get a Degree.

INTRODUCTION



Andres G. Farfan for The New York Times

A student watches an online economics class in real time at the University of Florida.

Last week, Harvard and the Massachusetts Institute of Technology announced a new nonprofit partnership to offer free online courses. Those who complete the course will get a certificate of mastery and a grade, but no official credit.

Should Harvard and M.I.T. offer credit for these courses and even allow students to obtain their degrees online? Indeed, doesn't it make more sense for elite colleges and universities to do this?

[READ THE DISCUSSION »](#)

DEBATERS



The Promise of Lower Costs

RICHARD VEDDER, CENTER FOR COLLEGE AFFORDABILITY AND PRODUCTIVITY

These efforts present the possibility of sidestepping dysfunctional student aid programs and barriers to entry.



Enhancement, Not Replacement

SEAN DECATUR, OBERLIN COLLEGE

These courses are not a substitute for in-person classes, and students completing them should not receive credit toward a degree.



A Way to Reach Minorities

KATHY ENGLER, NORTHERN LIGHTS LIBRARY NETWORK

Online higher education can lower racial barriers, and for this reason alone, Harvard and M.I.T. should offer these courses for credit and degrees.



More Options Means More Learning

JEREMY GLEICK, SOPHOMORE, UCLA

It doesn't have to be just Psych 101. Colleges can teach the history of children's literature, or the Second Punic War.



What About the Lab Work?

WALTER LEWIN, PROFESSOR OF PHYSICS, M.I.T.

A certificate would be nice. But how do I know John did all the work, and that it wasn't actually done by Mary?

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WGU NEWS

- WGU featured on NBC Nightly News
- Watch video from the WGU Winter 2010 Commencement Ceremony
- TIME Magazine Calls WGU "The Best Readily Cheap University You've Never Heard Of"

VISIT THE WGU NEWSROOM →

SCHOLARSHIPS AT WGU

- Additional Economic Turnaround Scholarships Available
- \$3,000 Scholarships Available for Employees of Small Businesses
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Western Governors University

- アメリカの19州の協力によって創設されたオンライン公立大学
- 通常の大学のように自前の履修課程に合わせた講義を提供していない
- 学生が十分な知識や技能を持ち合わせていることが試験やレポートで確認されれば、「学生が、どのような教材を使って、どのように学んだかに関係なく、評価基準に従って単位を認定し、必要な単位数が揃えば学位を授与する」という制度を採用(学生は、オープンエデュケーションをフル活用できる)
- 学位取得にかかるコストは、普通の私立大学の六分の一程度
- 学士課程を最短二年間で修了可能なので、学生(特に社会人学生)が経済的・時間的に得られるメリットも大きい
- 学生のための24/7オンライン学習支援(教員やチューターによるカウンセリングなど)やオンライン図書館などの学習リソースなどの提供

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College of Health Professions

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College of Health Professions
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- ▶ B.S. Nursing (Prelicensure)
- ▶ B.S. Health Informatics (from the College of Information Technology)

Master's Degree Programs:

- ▶ M.S. Nursing—Education (for RNs with BSNs)
- ▶ M.S. Nursing—Leadership and Management (for RNs with BSNs)
- ▶ M.S. Nursing—Education (RN to MSN Option)
- ▶ M.S. Nursing—Leadership and Management (RN to MSN Option)
- ▶ MBA Healthcare Management

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Gain the credentials and competence the industry demands with an online healthcare degree from WGU. Our accredited, competency-based degree programs will put you in an excellent position to fill the growing need for competent, compassionate healthcare professionals.

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Peer-To-Peer U & U of The People

P2PU Learning for everyone, by everyone, about almost anything

Home Courses News About Us Contact Us Login/Register (Not the Person You?) Search

Welcome to P2PU

Round 2 is officially underway, but it's a new website, more courses, a bigger community, two languages, and things will be a little rough around the edges at the beginning. We'll be back to our mission and working efficiently and soon. In case you are looking for our past phase courses, go to: [OLD COURSE ARCHIVES](#).

Sign-up for the next round of courses is tentatively scheduled to open in August 2010. However, you can still access all the course materials and even follow the discussions. Check out the running courses [here](#).

The Peer 2 Peer University (P2PU) is an online community of open study groups for short university-level courses. Think of it as online book clubs for open-educational resources. The P2PU helps you navigate the wealth of open-education materials that are out there, creates small-groups of motivated learners, and supports the design and facilitation of courses. Students and tutors get recognition for their work, and we are building pathways to formal credits as well.

Courses Start learning, view our Open Courses [Link](#)

Community Find Your Peers, Sign Up [Link](#)

Contact Us Contact us for any further info. [Link](#)

Recent Courses

- Introduction to Building Ideas Through Design - May 2010 [View course](#)
- The course is currently running. Sign up is closed.
- Introduction to Book Design - May 2010 [View course](#)
- This course is currently running. Sign up is closed.

世界中の有志によってボランティア的に運営され、学生は、無料で講義やグループ学習に参加したり、試験やレポートなどによる学習評価を受けることができる。

これらの新たな高等教育機関を通して受けられる教育によって、単位や学位を取得できるようになれば、高等教育の在り方は大きく変わる。

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May / 08 / 2010 Login

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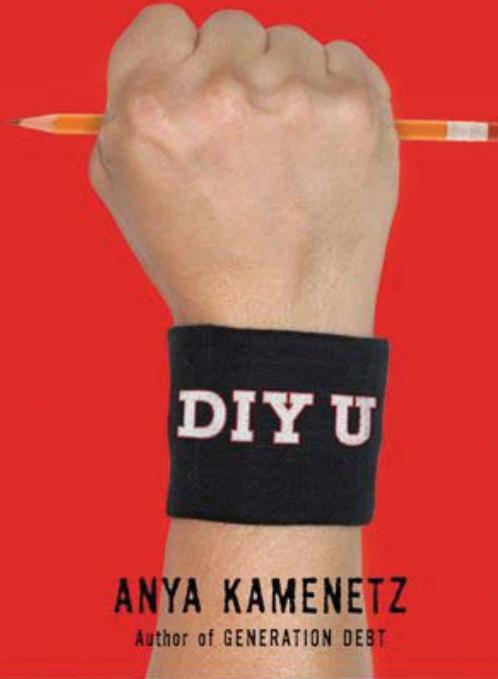
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Transformation of Higher Education

★★★★★★★★★★



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オープンエデュケーションは
偶然のブームではなく
必然的な教育の進化段階

120

*“If we teach **today** as we taught **yesterday**,
we rob our children of **tomorrow**.”*

- John Dewey (1916)

121

*“If we learn **today** as we learned **yesterday**,
we rob ourselves of **tomorrow**.”*

122

ウェブ進化 × 教育の進化 = 無限の可能性

教育とは無限の可能性を信じること

123



124

“The way that we are going to ratchet up our species is to take the best and to spread it around to everybody, so that everybody grows up with better things.”

Steve Jobs

125

オープンエデュケーションは
偶然のブームではなく
必然的な**教**の進化段階

126

最善の学びと教えを最大多数の人々に！

Be iOpen!

Join Us in Opening Up Education!

スモールグループ討論から

参加者およびグループ分け

グループ	分野	参加者
1	医療統計学	佐藤、寒水
2	薬剤疫学・臨床研究管理学	川上、堀部、徳増、村田、河野
	ゲノム疫学	
3	医療疫学	山崎、山本
3	医療経済学	大坪
4	医療倫理学・遺伝医療学（遺伝カウンセラーコース）	小杉、沼部
4	医学コミュニケーション学	岩隈
5	健康情報学	中山、高橋、宮崎
6	環境衛生学	小泉、原田、人見
7	知的財産経営学	山本、寺西
7	予防医療学（保健管理センター）	岡林
8	社会疫学	木原、木原雅
8	人間生態学（フィールド医学）	松林
9	健康政策・国際保健学	里村、岩永
	環境生態学	
	健康増進・行動学	古川

医療統計と オープンコース

医療統計学分野

佐藤俊哉・寒水孝司

社会健康医学系専攻FD

2012年11月30日



医療統計教育の現状

- 講義 (午前1コマ)
 - ▶ パワーポイントを使った座学
- 実習 (午後2コマ)
 - ▶ 講義の復習
 - ▶ 実データの解析を通して理解を深める
 - ▶ グループディスカッション
 - ▶ 毎週のレポート提出とフィードバック

2

オープンコースの利用可能性

- 医療統計学の講義に必要な基礎を学ぶ
 - ▶ 指数・対数など数学的基礎
 - ▶ 図表の読み方などの記述統計の基礎

あまりおもしろくない、できない

- かえて「医療統計アレルギー」を助長?

3

オープンコースの利用可能性 2

- 講義の復習と理解を深めるツールとして
 - ▶ 実習で行っている内容(データ、手引き等)を公開
 - ▶ 実習を選択してなくても各自で自習可能

フィードバックをどうするか?

4

薬剤疫学

- **オープンエデュケーションのメリット**
遠隔、オンデマンド等利点あり
入学のきっかけとなる(初回無料のネット配信)
 - 興味を提供する、年齢・属性を問わない
→ただしやはり教育産業的
- **本質は、そのあとの**
 - 双方向性、中身、人脈こそ重要

- 教科書にかいてあることは不要
- そもそも大学では講師というフィルターで教える内容(午前)
- 基礎知識のあとはディスカッション(午後)
 - 例) 医薬品の創成と毒性評価の授業
 - 事前課題を出し、授業日当日はディスカッションを中心とした内容。例を用いて、実際に「評価すること」を経験させる。
- そしてRU11としては研究

医療疫学・医療経済学

SPHにおけるオープンウェア活用可能性について (医療疫学・医療経済学での討議)

- 大学入学の意味： 受身の方に必要あるか？
- 言語のバリアー： コンテンツはたくさんある
 - 日本語で作成、パイの問題
- 課題研究の指導(オープンウェアでは難しいのでは)
- 遠隔教育(スカイプなど)とオープン教育の使い分け

- 社会貢献として一般市民(或いは医療者)への教育
- 院生の教育成果としてオープンウェアを作る
 - コミュニティーの主催
 - 教員はスーパーバイズ
 - コピーライトの問題

医療疫学の教育活動への オープンエデュケーションの活用

(参考) 医療疫学

4

医療疫学が提供する教育内容

- コア・疫学（他分野と分担）
- 研究デザイン特論 I・II
- 医学生・診断推論教育
- 医療者への教育
- MCRコース限定必修
 - 研究プロトコール・マネジメント法
 - 臨床統計学特論
 - データ解析法特論
 - 臨床研究コミュニケーション法



オープンエデュケーションの 活用が見込まれる教育細目

- **医療系学生・診断推論教育**
 - 医療系学生への、疫学的な『ものの考え方』の基礎の普及
- **医療者への教育**
 - 医療には、多分に疫学的なものの考え方が活かされることが多い。
 - －3た論法(薬を飲んだ・治った・効いた)が今なお大手を振っている実状
 - しながら、医療者は現在の教育において学ぶ機会がない

**医療者・医療系学生の基礎的な教育に
オープンエデュケーションの活用できるのでは？**

オープンエデュケーションの 活用が見込まれる教育細目

- **一般住民へのヘルスリテラシー教育**
 - 正しく情報を取捨選択する力の涵養に
 - エキスパートオピニオンにとどまらない、自信にとっても切実な医療の選択に役立つような教育を

**さらには一般住民をも含めた
ヘルスリテラシーの教育への活用の可能性**

医療経済学における オープンエデュケーション

医療経済学分野における活用アイデア

- 該当科目:「医療経営ヤングリーダー・コース」
- 目的: 病院経営に関する知恵の共産
- 参加者の候補: 関心のある者(登録制の方が聞き手は安心か)
- コンテンツ: 実務を中心としたケースの紹介
 - 自病院を背景とした動画はテキストでの情報よりもイメージを伝えやすいのでは(暗黙知の共有に有用)
 - 多様な学術領域からの理論的な解説や支援も含む
 - 一定量コンテンツが溜まれば、ダイジェスト版を作るのもよい
- 考えられる障壁: 参加者の枠を広げると管理が煩雑になりうる

医療倫理学・ 医学コミュニケーション学

オープンエデュケーションの可能性： 2つの提案

医療倫理・医学コミュニケーション

- ① SPHを代表する授業の様子を5分程度にまとめ、ホームページ上で公開
 - SPHの紹介と導入
- ② 3つの自然観・死生観(生老病死を含む)を代表する国・地域の学生たちとのリアルタイムでのディスカッション
 - 「自然を征服する」「自然と協調する」「自然にあらがう」死生観 (クラックホーンとストローベック)
 - シナリオ例: 人工中絶、延命治療、アンチエイジング (美容整形)

健康情報学

2012.11.30

医学、社会医学における
オープンエデュケーションの可能性

健康情報学

中山健夫、高橋由光、宮崎貴久子

教育にどのように活かせるか1

- 宮崎
 - 「つくる」「つたえる」「つかう」 に一致。土壌はある
 - 京大OCWでの健康情報学の講義のPDF公開
 - フィードバックあり
 - 利用者の立場からは、有料or無料が分かりやすいように
 - 企業とのコラボ
- 高橋
 - 発信者が継続的に、発信できるか、フィードバックに応えられるか
 - 人的資源(TA、プロジェクトオフィサー、専門職員)の養成
 - 多様なキャリアステップ(教員・研究者だけではない)

3

教育にどのように活かせるか2

- 中山
 - 10分くらいのYouTube(英語・日本語)公開は可能
 - 目的は?
 - PR(自分、分野、専攻、大学)
 - 組織としては人気教員10人の動画を公開
 - 組織として行う場合は、あまり「安っぽく」見えないように、京大OCWとのコラボ
 - Facebookは使えるか?
 - オープン、セミオープン、セミクローズ、クローズ
 - フィードバック体制の準備
 - 継続的なフィードバック、炎上対策

4

Background Knowledge (BK) Foreground Knowledge (FK)

- 「疫学」の講義はBK→公開可能
- Case Study(例 MCRプロマネ講義)は、Foreground→貴重なノウハウ・経験が凝縮→公開は要検討(うまく公開できれば、さらに進んだ次元の段階のフィードバック・インタラクションの基点になる可能性あり)
- 医学部(卒前教育)・MPHは、BKの講義→系統的知識の教育が中心
- 系統的なBKはオープンエディケーション教材を充実→「しなくてもすむ」ことから、「すべきこと(実習、コミュニケーショントレーニングなど)」へリソースを移動
- 人材開発
 - 人材(教員、研究者、専門職員、アシスタント)

5

環境衛生学

環境保健で必要なもの

- 基礎的な知識: 環境リスクアセスメント
- 対象: 行政、企業の実務者、産業保健実務者、環境NGO (GreenPeaceなど)
- 内容: リスクアセスメントの基礎から応用事例研究
- 必要な形: 自学学習・インタラクティブ・実習 (On the bench training)

オープンエデュケーションにする

- Technology
- Contents・・・中毒学、環境科学、疫学など
コースウェア、教科書
- Knowledge・・・化学・製薬実務者
- **Training**・・・

目標

- 安全な社会
- 理性的な環境論争
- オープンエデュケーションで利害関係者の
教育、参加

知的財産経営学・予防医学

オープンエデュケーションを利用するとすれば、
どのような目的が考えられるか

知財経営学分野/予防疫学分野グループディスカッション

知財経営学分野 大学への入学を誘うための、研究者&企業在籍の方への
オープンエデュケーションと認証制度

法律/知財基礎
特許演習
契約実習

上記目的と併せて、最新情報(規制の制定や
緩和等)を卒業生、修了生へフィードバック

ビジネス/アントレ
創業技術概論
技術経営概論

コンテンツ充実のためのオープン教材の活用

生命科学

社会科学系のバックグラウンドの方に
高等学校レベルの教材での予習、復習に活用

疫学

一般社会 及び
コフォート参加者、多施設共同研究参加者
への基礎的な疫学情報の提供

知識、経験の習得において

まねる 猿まねと言われ、善悪の判断は入らない、
(知識を得る)

まなぶ 何を、何の目的で学ぶのかには
知識・経験が必要
→大学でまなぶ理由

さとり 知識・経験の普遍化

社会疫学・人間生態学

オープンエデュケーションに対する 可能性と問題点・疑問点について

木原正博、木原雅子(社会疫学分野)
松林公蔵(人間生態学)

可能性

- 途上国の人々、貧困者など、これまで教育機会から途絶された人々に教育機会を提供する上での有用性に疑問の余地はない。
- 優れたオープンコースは、あらゆる人々の学習を助ける上で役立つ。

問題点・疑問点(1)

一般的観点と、人間や文化を扱う学問分野(社会疫学、人間生態学)に関わる専門家としての観点から、問題点や疑問を感じる部分がある。

(1) 一般的問題点・疑問

- 英語はオーディエンスがグローバルであるため、社会貢献という観点からもオープンコース作成の動機付けができやすいが、日本語で作成する場合の、メリットが明確に分からない。
- 「学び」は、知識だけではなく、教員のフィロソフィ、人間性から得られるもの、教員と学生、学生同士の人間的つながりから得られるもの等を含めた概念である。IT化に伴ってこうしたものが失われていく可能性はないか。失われるものを認識して、それを補う営みが伴わなければ、「学び」が崩壊する危険はないか(メタファ:「便利な」郊外型大店舗が、地域コミュニティを崩壊させてしまった)。

問題点・疑問点(2)

(1)人間や文化を扱う学問分野の専門家の観点からの問題点・疑問点

- 自然科学的(数理的、物質的)学問分野や知識伝達が主となる学問分野には、向くかもしれないが、人間や文化を丸ごと扱う分野にオープンエデュケーションが向くかどうか疑問。
- 質的方法の教育に、オープンコースは向かないのではないか。例えば、インタビュー法の微妙なノウハウの体得、質的データの分析の指導は、オープンコースでは難しく思われる。
- とくに、さまざまに外的条件やメンバーシップの異なるフィールド現場で、リスクを管理し、実践に関する適切な判断力・決断力を養うためには、Face to Faceでのリーダーシップ、フォロワーシップの涵養が必須で、この点はオープンコースでは限界がある。

健康政策国際保健学

健康政策・国際保健学における オープンエデュケーション

- オープンする範囲(対象・内容)をどのようにするかは検討が必要
- 健康政策学・・・以下の点から難しい部分がある
国民衛生の動向(8月末発行)
この内容の反映をどのようにするか？
法律等の変化にどのように対応するか
- 国際保健学・・・可能性としては以下のようなもの
現地の現状・環境を直接見たり聞いたりが可能
海外の教員・学生とのオープンディスカッション
海外等との共同事業

おわりに

2012年度のFDは、今年度から教務委員長を務めさせていただいております私、古川の提案で、オープンエデュケーションをテーマに3時間の予定で開かれました。予定を15分以上超過し、3時間を越えるFDとなりました。

オープンエデュケーションとは、インターネット上で講義やその教材が無償（またはごく安価）で公開されることにより、インターネットにアクセスさえできれば誰でもどこでも教育を受けられるようになる体制のことをいいます。米マサチューセッツ工科大学（MIT）が他の教育機関に先駆けて、自校の講義で使われている教材の全てをウェブ上で無料で公開すると発表したのが2001年で、彼らはこれをOpenCourseWare (OCW)と名付けました。以後、さまざまな教育機関の取り組みに発展し、世界中で多くの事例に発展しています。

さらに上記の大学発のオープンエデュケーションとはやや異なる文脈で、有名感動講義・講演を集めたTED Talks (<http://www.ted.com/talks>)、世界を相手に初等教育を展開するKahn Academy (<http://www.khanacademy.org/>)など、新しい知識伝達の形は急激な展開を見せています。大学、大学院もこの動きと無縁であるわけには行きません。いや、おそらく、講義や演習を中心とした旧来の方式は、自動車に対する馬車と相同なものとなって行くことが予感されます。

そうした激しい動きの中、京都大学高等教育研究開発推進センターに、このオープンエデュケーションの世界の中心で活躍してこられた飯吉透教授が2012年1月に着任しておられます。本年のFDでは、われらがKUSPHでオープンエデュケーションをどのように活かして行くことができるかを、飯吉教授の講演と、それを受けた教官のグループワークの形で検討いたしました。

飯吉先生の盛り沢山の内容のご講演の後、各分野ごとにオープンエデュケーションの将来性や注意点についてのディスカッションが行われ、本報告書に収載されたような発表が行われました。

たとえば、健康増進・行動学分野では飯吉教授、および京大OCW担当の土佐尚子教授、および京大でSakaiというlearning management systemを展開しておられる梶田将司教授とともにEBMの入門OCWを開発する計画が進んでいる。今回のFDを機会に、KUSPHでもKUSPHに相応しい形でオープンエデュケーションが広がって行くことが期待されます。

2013年1月

社会健康医学系専攻
教務委員会委員長
古川壽亮

2012 年度教務委員会（五十音順）

大坪徹也（医療経済学）
木原雅子（社会疫学）
河野雅之（薬剤疫学）
里村一成（健康政策・国際保健学）
早乙女周子（知的財産経営学）
寒水孝司（医療統計学）
高橋由光（健康情報学）
古川壽亮（委員長、健康増進・行動学）