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commons

OER Revisited



CHEO Faculty Professional Development Workshop  
14-May-2015  
Boulder, Colorado

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Associate Director of Global Learning

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CONCEPTS OF BIOLOGY

*Concepts of Biology* is designed for the introductory biology course for nonmajors taught at most two- and four-year colleges. The scope, sequence, and level of the program are designed to match typical course syllabi in the market. *Concepts of Biology* includes interesting applications, features a rich art program, and conveys the major themes of biology.

Senior Contributors:

Samantha Fowler, Clayton State University  
 Rebecca Roush, Sandhills Community College  
 James Wise, Hampton University

TABLE OF CONTENTS

- Preface
- Unit 1. The Cellular Foundation of Life [+]
- Unit 2. Cell Division and Genetics [+]
- Unit 3. Molecular Biology and Biotechnology [+]



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MORE RESOURCES >

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INTERACTIVE SIMULATIONS FOR SCIENCE AND MATH

Play with Simulations

The Tech Awards

Faraday's Law



<https://openstaxcollege.org/textbooks/concepts-of-biology>

<https://phet.colorado.edu/>

# What are OER?

Open Learning Initiative Transforming higher education through the science of learning.

Syllabus: Digital Literacy Health (Open + Free)

Syllabus My Scores

Before you begin, [Test and Configure](#) your system for use with this course.

Healthcare Environment

Assignment

UNIT 1: Introduction and Learning Strategies

- Module 1: Introduction to Course (Available Practice)
- Module 2: Learning Strategies (Available Practice)

UNIT 2: Healthcare Environment

- Module 3: Healthcare Delivery Organizations (Available Practice)
- Module 4: Healthcare Payment Systems (Available Practice)

<http://bit.ly/1RwBkda>

ChemCollective Online Resources for Teaching and Learning Chemistry

Home About Teachers Help Feedback Search

We've recently updated our site. If you are having problems, you can click here to get to the old site.

RESOURCES BY TOPIC

- Stoichiometry
- Thermochemistry
- Kinetics
- Equilibrium
- Acid-Base Chemistry
- Solubility
- Oxidation/Reduction and Electrochemistry
- Analytical Chemistry/Lab Techniques
- Physical Chemistry
- Properties of Solutions

Resources to Teach and Learn Chemistry

The ChemCollective is a collection of virtual labs, scenario-based learning activities, tutorials, and concept tests. Teachers can use our content for pre-labs, for alternatives to textbook homework, and for in-class activities for individuals or teams. Students can review and learn chemistry concepts using our virtual labs, simulations, and tutorials. The ChemCollective is organized by a group of faculty and staff at Carnegie Mellon who are interested in using, assessing, and creating engaging online activities for chemistry education.

Quick Links

- Virtual Lab
- Mixed Reception Game
- Stoichiometry Tutorials

News

Presented at BCCE 2014

<http://ir.chem.cmu.edu/>

# Z-Degree



**TIDEWATER  
COMMUNITY COLLEGE**

From here, go anywhere.™

**21 OER-based “Z courses” that make up the zero textbook cost “Z-Degree” an associate of science degree program in business administration.**

<http://lumenlearning.com/success-story-tidewater/>



# Free ≠ OER

Free is still bound by  
copyright all rights reserved.

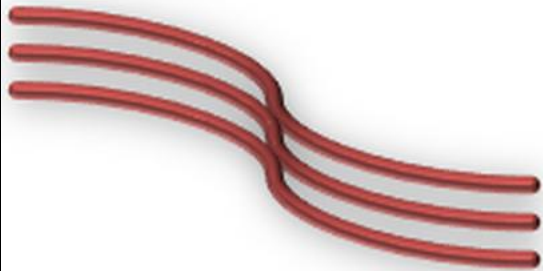


CourseSmart: Online Textbooks, eTextbooks, textbook ...

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Access the world's largest selection of textbooks as eTextbooks. Free for instructors and up to 60% off for students. Free apps for iPad and Android devices.

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## Timebombing A Workbook

This page describes how to limit the functionality of a workbook after a period of time.

# Free + Open = OER

## 5Rs: The Powerful Rights of Open

Retain

- Make, own, and control your own copy of the content

Reuse

- Use the content in its unaltered form

Revise

- Adapt, adjust, modify, improve, or alter the content

Remix

- Combine the original or revised content with other OER to create something new

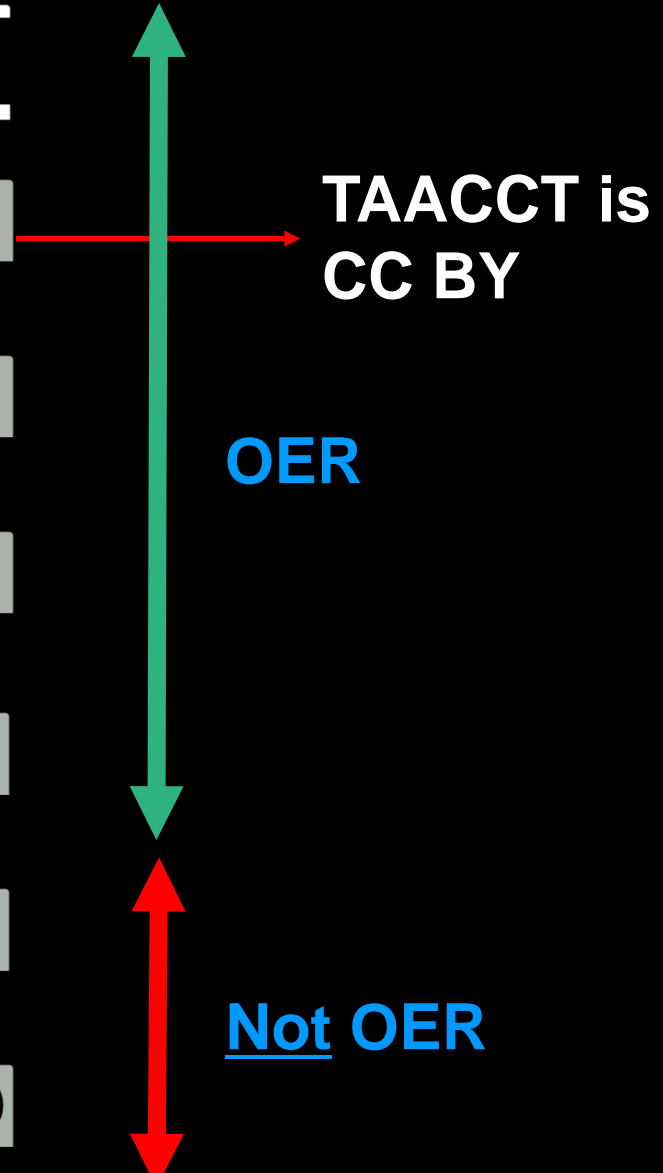
Redistribute

- Share your copies of the original content, revisions, or remixes with others



We make content open.

We make sharing content easy, legal, and scalable.





<http://education.okfn.org/world/>

# Around the World

We are publishing a series of blog posts looking at open education initiatives in different countries. If you would like to contribute a post offering a view on your country then please get in touch by emailing us directly on [education \[at\] okfn.org](mailto:education@okfn.org).

The posts we have published so far are:

- [Open Education South Korea](#) by Stella HaYoung Shin
- [Open Education Russia 2](#) by Anna Sakoyan and Irina Radchenko
- [Open Education Russia](#) by Anna Sakoyan and Irina Radchenko
- [Open Education Italy](#) by Matteo Uggeri
- [Open Education Philippines](#) by Mary Rose Erika Barja
- [Open Education Japan](#) by Tomohiro Nagashima
- [Open Education South Africa #2](#) by Megan Beckett
- [Open Education Wales](#) by Debbie Baff
- [Open Education Finland](#) by Tarmo Toikkanen
- [Open Education Brazil](#) by Gui Bueno
- [Open Education Germany](#) by Zwetana Penova
- [Open Education Holland](#) by Alette Baartmans
- [Open Education Greenland](#) by an M. Pawlowski, Henri Pirk  
Sofoklis A. Sotiriou
- [Open Education South Africa](#) by Anna Wertlen
- [Open Education UK](#) by David Kernohan
- [Open Education Iceland](#) by Tryggvi Thayer
- [Open Education Scotland](#) by Lorna Campbell
- [Open Education Tanzania](#) by Ben Taylor
- [Open Education Rwanda](#) by Bernard Nkuyubwatsi

## OER World Map <sup>f</sup> <sup>t</sup>

[Share your story](#) with the world of [OER](#)!

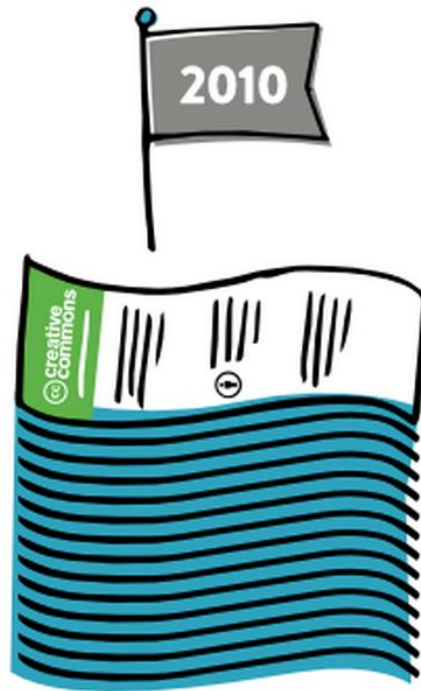


<https://oerworldmap.org/>

# Number of Creative Commons-licensed works



**50** MILLION



**400** MILLION



**882** MILLION



**37%**

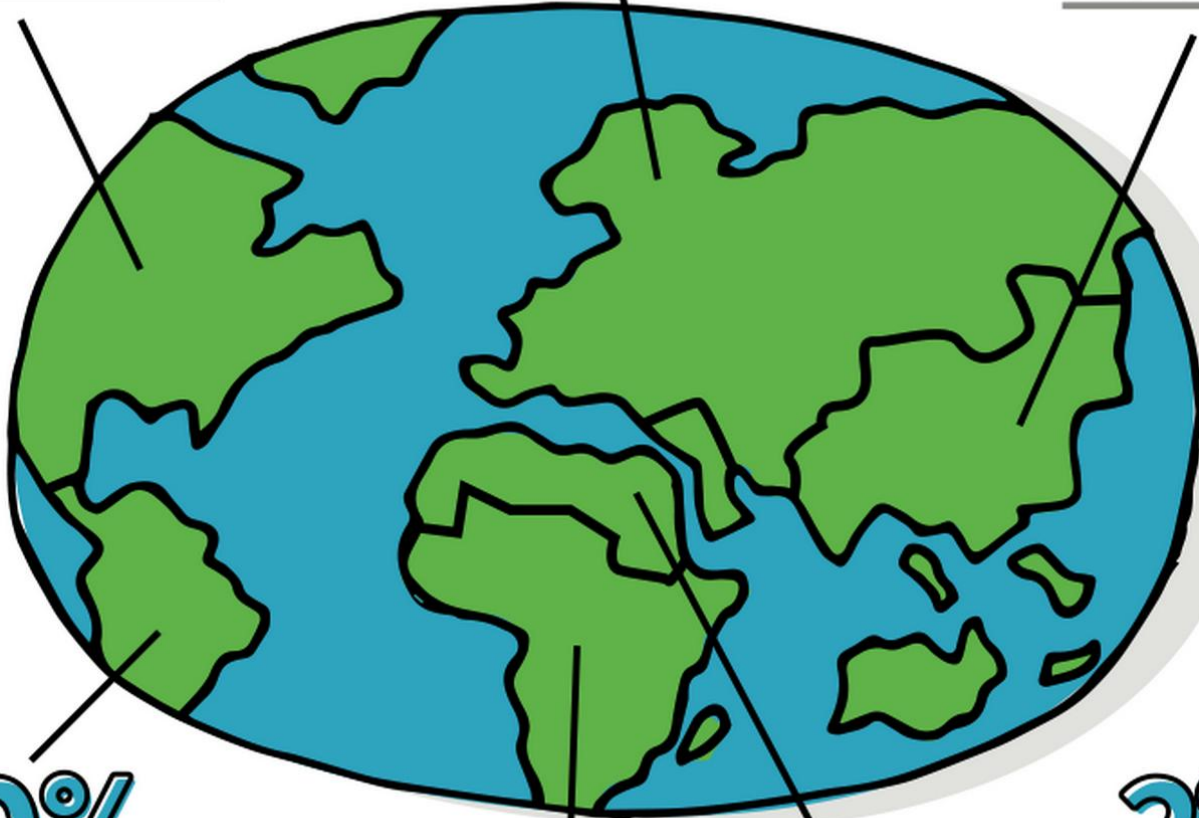
**NORTH AMERICA**

**34%**

**EUROPE**

**16%**

**ASIA-PACIFIC**



**10%**

**LATIN AMERICA**

**1%**

**AFRICA**

**2%**

**ARAB WORLD**

**You Tube**

10 Million Videos

WIKIPEDIA

34 Million Articles

**flickr**

307 Million Photos

 **PLOS**

100,000 Articles

**Scribd.**

50 Million Documents



**500**

500,000 Photos

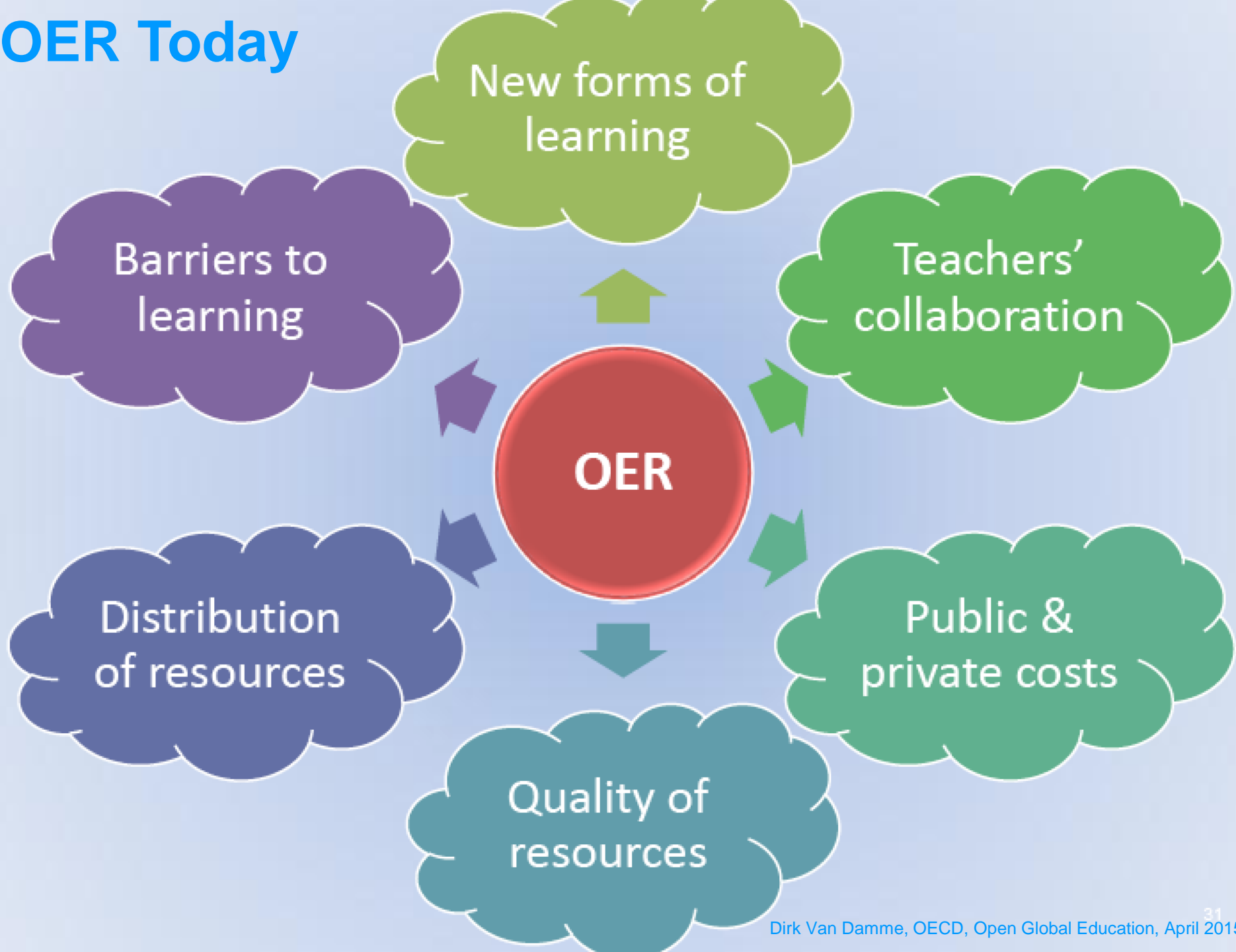
**jamendo**

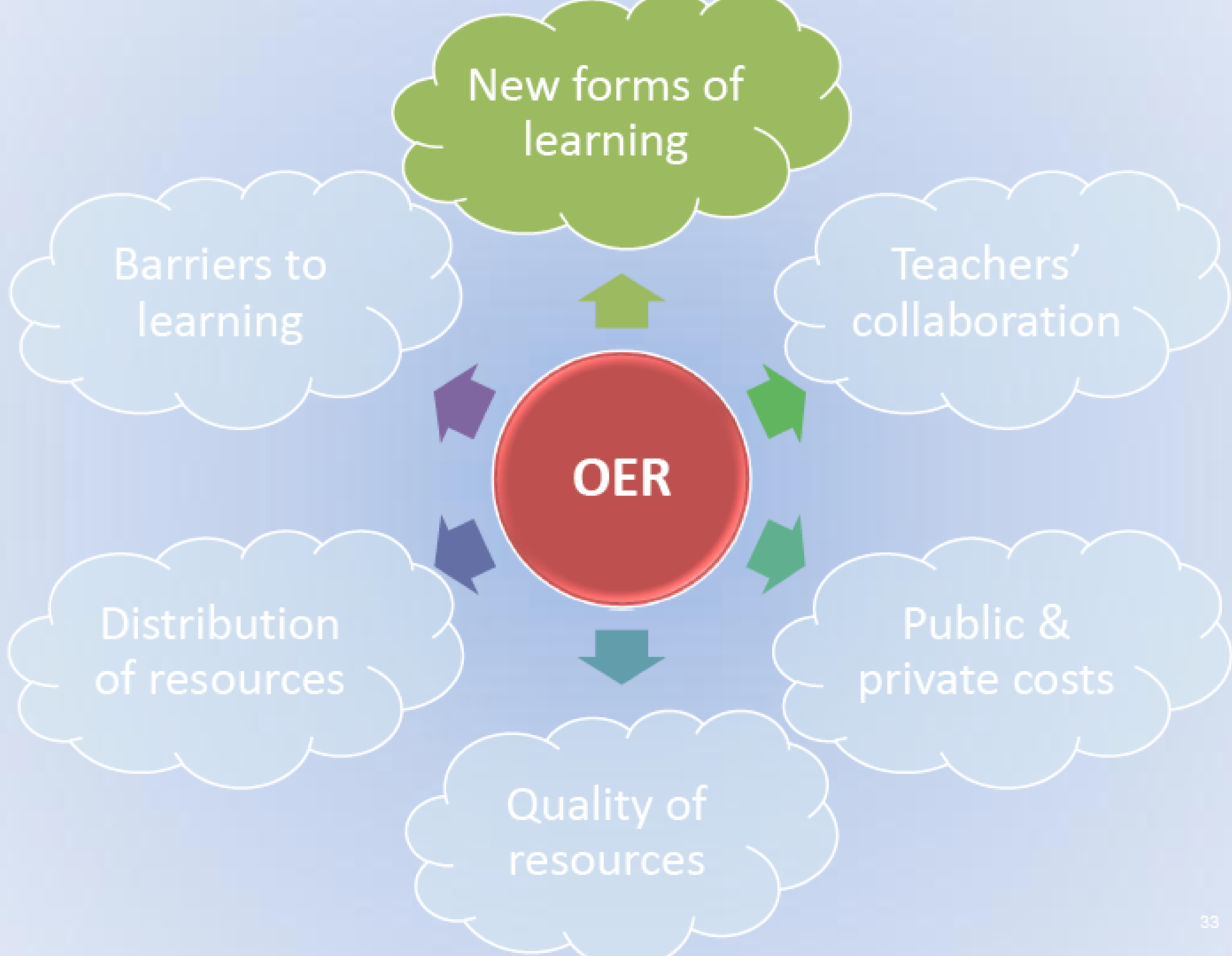
400,000 Songs

**wattpad**

300,000 Stories

# OER Today







# Open Pedagogy

## iterating toward openness

pragmatism over zeal – aut inveniam viam aut faciam

<http://opencontent.org/blog/archives/2975>

### What is Open Pedagogy?

by DAVID on OCTOBER 21, 2013

Hundreds of thousands of words have been written about open educational resources, but precious little has been written about how OER – or openness more generally – changes the practice of education. Substituting OER for expensive commercial resources definitely save money and increase access to core instructional materials. Increasing access to core instructional materials will necessarily make significant improvements in learning outcomes for students who otherwise wouldn't have had access to the materials (e.g., couldn't afford to purchase their textbooks). If the percentage of those students in a given population is large enough, their improvement in learning may even be detectable when comparing learning in the population before OER adoption with learning in the population after OER adoption. Saving significant amounts of money and doing no harm to learning outcomes (or even slightly improving learning outcomes) is clearly a win. However, there are much bigger victories to be won with openness.



This blog is written and maintained by David Wiley.

**lumen**



**How can we use OER 5R's in teaching and learning?**

**How can we extend, revise, and remix our pedagogy based on these additional capabilities?**

**OER impt. not just as content but the teaching and learning it facilitates.**



**Driving airplane down the road, or ...**

Push plane on the street by [Raymond Shobe](#) [CC BY](#)





**realize full potential.**



**Disposable assignments, or ...**





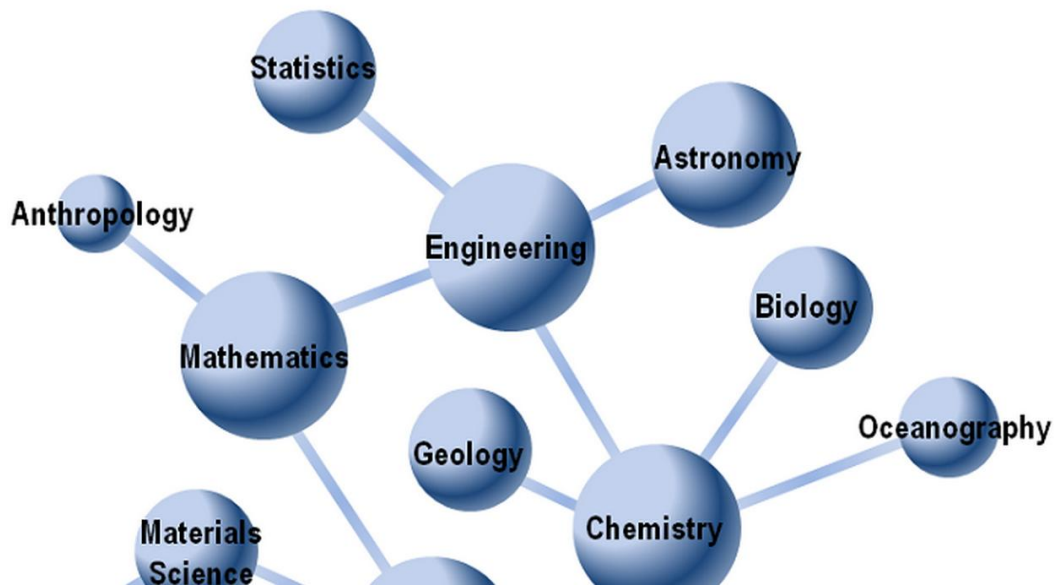
**add value to the world.**

# Improve Course Materials

ChemWiki: The Dynamic Chemistry E-textbook >

## ChemWiki: The Dynamic Chemistry E-textbook

The ChemWiki is a collaborative approach toward chemistry education where an Open Access textbook environment is constantly being written and re-written by students and faculty members resulting in a free Chemistry textbook to supplant conventional paper-based books. The development of the ChemWiki is currently directed by UC Davis Professor [Delmar Larsen](#).



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### The Core

[Analytical Chemistry](#)  
[Biological Chemistry](#)  
[Inorganic Chemistry](#)  
[Organic Chemistry](#)  
[Physical Chemistry](#)  
[Theoretical Chemistry](#)

### Wikitexts

[Cal Poly Pomona](#)  
[Columbia U](#)  
[Diablo Valley College](#)  
[Florida State U](#)  
[Hope College](#)  
[Purdue](#)  
[Sacramento City College](#)  
[UC Davis](#)  
[UC Irvine](#)

### Textbook Maps

[Zumdahl 9<sup>ed</sup>](#)  
[Petrucci 10<sup>ed</sup>](#)

# Build The Global Knowledge Commons

[http://en.wikipedia.org/wiki/Wikipedia:WikiProject\\_Murder\\_Madness\\_and\\_Mayhem](http://en.wikipedia.org/wiki/Wikipedia:WikiProject_Murder_Madness_and_Mayhem) Create account Log in

Project page Talk Read Edit View history

## Wikipedia:WikiProject Murder Madness and Mayhem

From Wikipedia, the free encyclopedia

*“ This is a remarkable project, and a herculean task realized in the short time span of less than 15 weeks. Jon and his students are [a] model for thinking, sharing and contributing with[in] the open space of the internet. An important act of faith and intellectual responsibility. It is ever so impressive. ”*

—Jim Groom<sup>[1]</sup>

*“ Gives students real-world experience finding their way, collaboratively, to high standards of content and writing in their field. It's an incredible example of what college students and their inspired teacher can do, collaborating, reflecting, listening, revising. ”*

—Barbara Ganley<sup>[2]</sup>

*“ Over the course of the last few months I have learned so much about writing I cannot even express... and it shows. I have been a B+/A- student throughout my entire undergraduate career, and my last two papers have been A's! I think the grades speak for themselves. ”*

—Monica Freudenreich<sup>[3]</sup>

*“ I will no longer allow my daughter to consider attending the University of British Columbia, so long as Murray is paid to teach there. ”*

—Gregory Kohs<sup>[4]</sup>



The grand-daddy of them all... [Juan Facundo Quiroga](#)

The [University of British Columbia](#)'s class SPAN312 ("Murder, Madness, and Mayhem: Latin American Literature in Translation") contributed to Wikipedia during Spring 2008. Our collective goals were to bring a selection of articles on [Latin American literature](#) to [featured article](#) status (or as near as possible). By project's end, we had contributed three [featured articles](#) and eight [good articles](#). None of these articles was a good article at the outset; two did not even exist.

**Shortcuts:**  
[WP:MMM](#)  
[WP:WPMMM](#)



**WIKIPEDIA**  
The Free Encyclopedia

**Main page**  
Contents  
Featured content  
Current events  
Random article  
Donate to Wikipedia  
Wikimedia Shop

**Interaction**  
Help  
About Wikipedia  
Community portal  
Recent changes  
Contact page

**Tools**  
What links here  
Related changes  
Upload file  
Special pages  
Permanent link  
Page information

**Print/export**  
Create a book



# Design Course Assignments

Assignment Bank    Types    Create One    ds106

**Assignment Bank**        Search

	<i>Visual Assignments</i>		<i>Design Assignments</i>
	<i>Audio Assignments</i>		<i>Video Assignments</i>
	<i>Web Assignments</i>		<i>Mashup Assignments</i>
	<i>Writing Assignments</i>		<i>Fanfic Assignments</i>
	<i>Animated GIF Assignments</i>		<i>3D Printed Assignments</i>

<http://assignments.ds106.us/>



# Create & Curate Supplemental Resources

The screenshot shows the UBC Wiki page for "Math Exam Resources". The page header includes the UBC logo, the motto "a place of mind", and the text "THE UNIVERSITY OF BRITISH COLUMBIA" and "UBC WIKI". The main title is "<http://wiki.ubc.ca/Science:Math Exam Resources>". Below the title, there are navigation options: "Science", "Discussion", "View", "View source", "History", "Go", and "Search".

On the left side, there is a sidebar with a "Login" button and a "Navigation" section containing links for "Create a New Page", "Main Page", "Categories", "Contents", "Recent changes", and "Help & Support". Below this is a "Wiki Spaces" section with links for "Main", "Course", "Documentation", "Sandbox", and "UBC Wiki Books".

The main content area features a dark green banner with the text: "Welcome to the Math Exam / Education Resources wiki | a place to learn about mathematics created by the UBC mathematical community". To the right of this banner is a photo of a young boy with glasses pointing at a chalkboard with mathematical formulas. Above the photo are social media icons for @MERwiki, Twitter, and an Android App.

Below the banner, a blue bar states: "Featuring 1245 fully solved questions for 49 complete UBC math exams sorted by 152 categories." Below this are links for "How to use this resource · How to contribute" and "About · Usage Data · FAQ".

The "Resources by Course" section lists five courses:


Math 100/180	Math 101	Math 102	Math 103	Math 104/184
Differential Calculus with Applications to Physical Sciences and Engineering	Integral Calculus with Applications to Physical Sciences and Engineering	Differential Calculus with Applications to Life Sciences	Integral Calculus with Applications to Life Sciences	Differential Calculus with Applications to Commerce and Social Sciences

The screenshot shows the OER Commons website. The header includes the OER Commons logo, the URL "<https://www.oercommons.org/>", and navigation links: "Home / Browse All / My OER / Connect / Contribute". On the right, there are links for "Register Now!", "Log In", and "Help". A search bar is located below the navigation links, with a "Search" button and a "Use Advanced Search" link.

The main content area features a dark background with the text: "Connect with a Global Community" and a stylized graphic of Chinese characters.

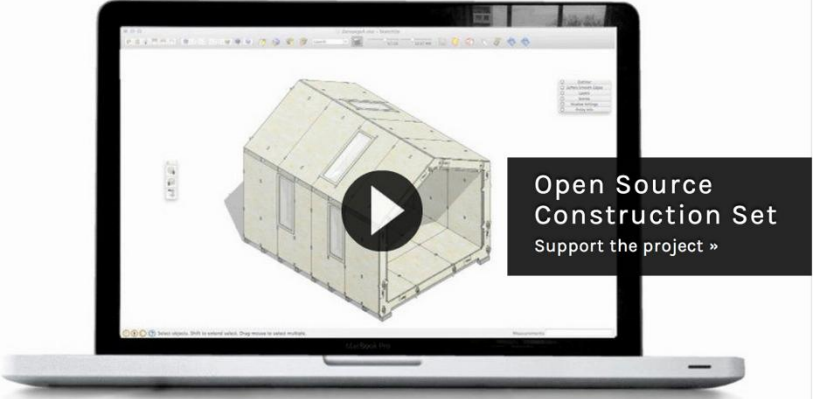
# Create & Customize Designs for Real World Goods

Open source construction set – print your own house. [Blog](#) [Press](#) [Contact](#) [@WikiHouse](#)



<http://www.wikihouse.cc/>

Home What is it? Open library Design Community News Support Us




# WIKISEAT

<http://www.wikiseat.org/>

HOME ABOUT BLOG PARTICIPATE STORE PHOTO GALLERY

"Who says a girl can't use power tools?!"

A quote from Kristina Kopasakis  
AKA @WikiSeatKid on Twitter



<http://creativecommons.org.nz/2013/05/wikihouse-nz/>

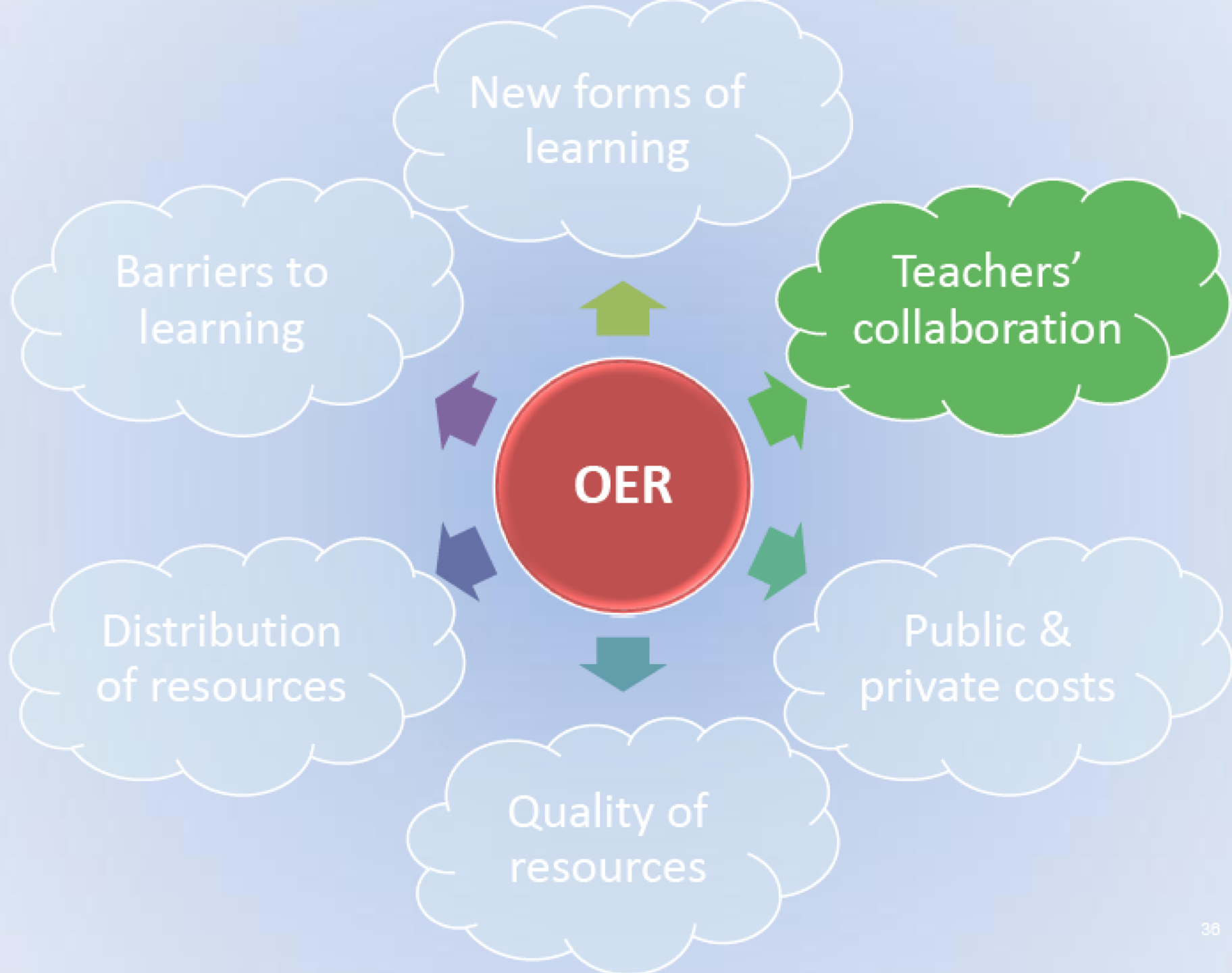
MakerBot Thingiverse <http://www.thingiverse.com/> 



## Thingiverse Featured

Nervous System's Kinematics Bracelets are complex, foldable forms composed of articulated modules. They also look nice. Print a preconfigured size and design or customize your own.

[Learn More](#)





**From Lone Ranger  
to collaborative  
peer-to-peer and  
student co-creation.**





# Shared Earth



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Find Garden / Gardener

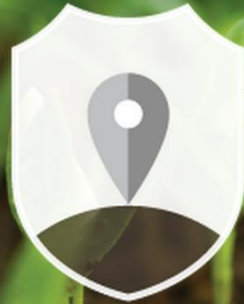
Login

<http://sharedearth.com/>



Connect

I HAVE LAND  
TO SHARE



Create a Garden Profile

I'M A GARDENER  
LOOKING FOR LAND



Create a Gardener Profile

HAVE LAND, NEED A  
GARDENER

I'M A GARDENER, NEED  
LAND

## Shared Earth the Largest Community Garden on the Planet!

[Landshare and SharedEarth.com Form Partnership For Global Growth](#)

Welcome to Shared Earth, a free website that connects **land owners** with **gardeners** and **farmers**.



## open source seed initiative

<http://www.opensourceseedinitiative.org/>

# Teach and learn psychology for free.

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Phil Zimbardo

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<http://nobaproject.com/>



STUDENTS | FACULTY

# Find

a Textbook

Find

Search our collection of open textbooks. The curated collection aligns with the [top 40 subject areas in BC](#). Many of these textbooks have been [reviewed and vetted by BC post-secondary faculty](#).

FACULTY

# Adopt

a Textbook

Adopt

Let us know if you have [adopted an open textbook](#). Or, if you are looking for resources on how to adopt a textbook, we have some resources to help.

FACULTY

# Modify

a Textbook

Modify

Take advantage of the open textbook [Creative Commons license](#) and customize an open textbook to fit your specific needs. Here are some resources to help you modify an existing open textbook.

<http://open.bccampus.ca/>

Oct-2012 BC Ministry of Advanced Education funds Canada's first official open textbook project.

Open textbooks for the 40 most popular post-secondary courses in the province.

Alberta & Saskatchewan join – student activism.

## Search the Library

search

## Browse Subjects

Accounting & Finance

Business, Management & Marketing

Computer Science & Information Systems

Economics

General Education

Humanities & Language

Law

Mathematics & Statistics

Natural & Physical Sciences

Social Sciences

## Open Textbook Library

As an instructor, you want your students to have the best textbooks possible. Unfortunately, not all students can afford the high cost of traditional textbooks.

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## Open Textbook Network



The UNIVERSITY of OKLAHOMA



THE OHIO STATE UNIVERSITY



VirginiaTech

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Only experts like you can determine quality.

Email us at [open@umn.edu](mailto:open@umn.edu) to get started.

# K-12 OER Collaborative

**K-12 OER**  
COLLABORATIVE

HOME • ABOUT • **RFP** • NEWS • CONTACT



## K-12 Open Educational Resources Collaborative: Request For Proposals (RFP)

**Proposals to create full-course, high-quality OER supporting K–12 mathematics and English language arts/literacy, aligned with state learning standards.**

<http://k12oercollaborative.org/>



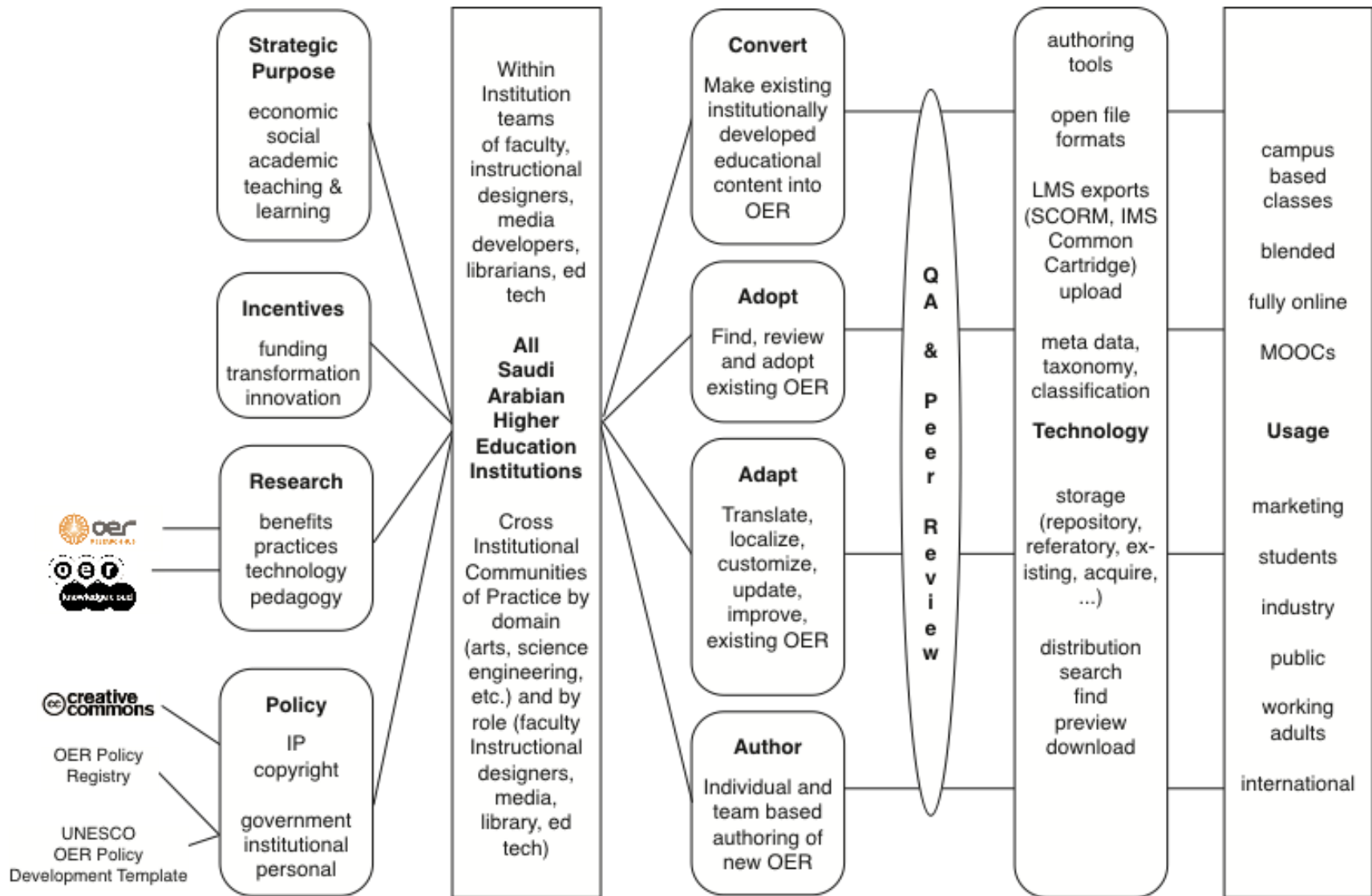


U.S. DEPARTMENT OF STATE  
DIPLOMACY IN ACTION **Open Book Project**

<http://www.state.gov/secretary/20092013clinton/rm/2013/01/203382.htm>

# Saudi Arabia – Leapfrog & Go National

## SUCCESS FACTORS FOR SAUDI ARABIA NATIONAL OER FRAMEWORK





# TOC Pt.1: Resolve Unemployment & Boost Economy

## TRADE ADJUSTMENT ASSISTANCE COMMUNITY COLLEGE AND CAREER TRAINING GRANT PROGRAM

### Partnerships

Labour market demand - high growth industry sectors

#### Employers & Industry

Design & delivery of employer sponsored work-based training models

**Community Colleges  
(Consortia – in state & interstate)**

Local workforce investment board

#### Public Workforce System

Job centers, adult education agencies, career and technical education agencies

### Six Core Elements

#### 1. Evidence Based Design

- use evidence to design program strategies
- base program design on a level of evidence
- use data for continuous improvement of programs

#### 2. Stacked & Latticed Credentials

- post-secondary credentials that have labor market value
- certificates, certifications, diplomas, and degrees
- competency-based educational programs

#### 3. Transferability & Articulation

- career pathways that transfer and articulate
- within and across state lines & within consortia
- bridge from non-credit to credit
- build on previously funded courses & credentials

#### 4. Online & Tech-Enabled Learning

- hybrid and blended learning strategies
- open enrollment, modularize content, accelerate course delivery, interactive simulations, gaming, digital tutors, synchronous & asynchronous, ...
- OER & UDL

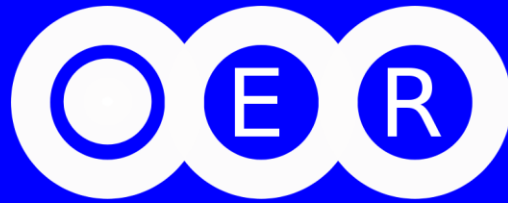
#### 5. Strategic Alignment

- outreach to community - employers and industry, public workforce system, non-profit organizations, philanthropies ...
- leverage supports & do not duplicate existing programs

#### 6. Align with Previously-Funded TAACCCT Projects

# TOC Pt. 2: Steward \$, Maximize Impact, Generate Innovation

TRADE ADJUSTMENT ASSISTANCE COMMUNITY COLLEGE AND CAREER TRAINING GRANT PROGRAM



Open  
Educational  
Resources



# TOC Pt.1: Resolve Unemployment & Boost Economy

## Outcome

TRADE ADJUSTMENT ASSISTANCE COMMUNITY COLLEGE AND CAREER TRAINING GRANT PROGRAM

**\$1.92 billion**    **4 Rounds**    **1087 colleges**    **256 grants**    **Every State**    **Consortia**  
**2011-15**    **700 non-duplicate**

Labour market demand - high growth industry sectors

### Employers & Industry

Design & delivery of employer sponsored work-based training models

**Community Colleges**  
(Consortia – in state & interstate)

Local workforce investment board

### Public Workforce System

Job centers, adult education agencies, career and technical education agencies

**1100 programs of study**  
**Expect 2000 when all is done**

**80,000 enrolments**  
**27,000 have credential already**

**1. Evidence Based Design**

**2. Stacked & Latticed**

**3. Transferability & Articulation**

**4. Online & Tech-Enabled Learning**

**5. Strategic Alignment**



Energy Technology



Advanced Manufacturing



Transportation



Information Technology



Healthcare



Accelerated Progress



Career Pathway Guidance



Student Support + Retention



Technology + Online Learning

**6. Align with Previously-Funded TAACCCT Projects**

# TOC Pt. 2: Steward \$, Maximize Impact, Generate Innovation Outcome

TRADE ADJUSTMENT ASSISTANCE COMMUNITY COLLEGE AND CAREER TRAINING GRANT PROGRAM

More grant programs requiring CC licenses

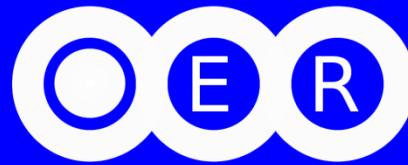


Advocacy & policy advances

US State Dept. Grant: CC BY 4.0: 2015 E-Teacher Scholarship Program  
DOL Ready to Work program - CC BY  
Now in DOL template for all grants  
Office of Disability Employment program - deliverables will go into Skills Commons



Expansion of Commons – TAACCCT OER in technical vocational areas, high growth job sectors.



Open Educational Resources

Growth of OER movement – 700+ community colleges in every US state now engaged in OER development and open education.

USAID in Mexico is taking curriculum developed by TAACCCT grantees, translating to Spanish, and using as part of US-Mexico bi-lateral economic development work.

# Paul Stacey

Creative Commons

web site: <http://creativecommons.org>

e-mail: [pstacey@creativecommons.org](mailto:pstacey@creativecommons.org)

blog: <http://edtechfrontier.com>

presentation slides: [http://www.slideshare.net/Paul\\_Stacey](http://www.slideshare.net/Paul_Stacey)



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