What does the future of literacy look like through the lens of open education?

Ahrash N Bissell
What does the future of literacy look like through the lens of open education?

Ahrash N Bissell
Let me break the law…

http://www.flickr.com/photos/jakescreations/52860690/
Moon

Moon is Earth's only natural satellite and the only astronomical body other than Earth ever visited by human beings. The moon is the brightest object in the night sky but gives off no light of its own. Instead, it reflects light from the sun. Like Earth and the rest of the solar system, the moon is about 4.6 billion years old.

The moon is much smaller than Earth. The moon's average radius (distance from its center to its surface) is 1,079.6 miles (1,737.4 kilometers), about 27 percent of the radius of Earth.

The moon is also much less massive than Earth. The moon has a mass (amount of matter) of 8.10 x 1019 tons (7.35 x 1019 metric tons). Its mass in metric tons would be written out as 735 followed by 17 zeroes. Earth is about 81 times that massive. The moon's density (mass divided by volume) is about 3.34 grams per cubic centimeter, roughly 60 percent of Earth's density.

Because the moon has less mass than Earth, the force due to gravity at the lunar surface is only about 1/6 of that on Earth. Thus, a person standing on the moon would feel as if his or her weight had decreased by 5/6. And if that person dropped a rock, the rock would fall to the surface much more slowly than the same rock would fall to Earth.

Despite the moon's relatively weak gravitational force, the moon is close enough to Earth to produce tides in Earth's waters. The average distance from the center of Earth to the center of the moon is 238,897 miles (384,467 kilometers). That distance is growing -- but extremely slowly. The moon is moving away from Earth at a speed of about 1 1/2 inches (3.8 centimeters) per year.

The temperature at the lunar equator ranges from extremely low to extremely high -- from about -280 degrees F (-173 degrees C) at night to +260 degrees F (+127 degrees C) in the daytime. In some deep craters near the moon's poles, the temperature is always near -400 degrees F (-240 degrees C).

The moon has no life of any kind. Compared with Earth, it has changed little over billions of years. On the moon, the sky is black -- even during the day -- and the stars are always visible. A person on Earth looking at the moon with the unaided eye can see light and dark areas on the lunar surface. The light areas are rugged, cratered highlands known as terrae (TEHR ee). The word terrae is Latin for lands. The highlands are the original crust of the moon, shattered and fragmented by the impact of meteoroids, asteroids, and comets. Many craters in the terrae exceed 25 miles (40 kilometers) in diameter. The largest is the South Pole-Aitken Basin, which is 1,550 miles (2,500 kilometers) in diameter.

The dark areas on the moon are known as maria (MAHR ee uh). The word maria is Latin for seas; its singular is mare (MAHR ee). The term comes from the smoothness of the dark areas and their resemblance to bodies of water. The maria are cratered landscapes that were partly flooded by lava when volcanoes erupted. The lava then froze, forming rock. Since that time, meteoroid impacts have created craters in the maria.

The moon has no substantial atmosphere, but small amounts of certain gases are present above the lunar surface. People sometimes refer to those gases as the lunar atmosphere. This "atmosphere" can also be called an exosphere, defined as a tenuous (low-density) zone of particles surrounding an airless body. Mercury and some asteroids also have an exosphere.
Guiding questions:
1. ??
2. ??
3. ??
4. ??
5. ??
6. **Etc**

Moon

Moon is Earth's only natural satellite and the only permanent object on Earth's horizon visible to humans. It is the brightest object in the night sky, given its location in the sky and its surface. Like Earth, the rest of the solar system, the moon is about 4.54 billion years old.

The moon is about 1.68 times the diameter of Earth. Its average distance from the center of Earth is about 384,400 kilometers (239,000 miles). This is about 0.256 times the distance from Earth to the Sun. The moon is the fifth largest moon in the solar system and the smallest moon in the inner solar system. It is the first object outside the Earth visible from Earth.

The moon is rotating in the same direction as it is orbiting the Earth. This is called synchronous rotation. As a result, the same side of the moon always faces the Earth. This means that the side of the moon that is not visible from Earth is called the far side of the moon.

The moon is composed of a mixture of rock, ice, and water. It has a rocky surface with craters and mountain ranges. The moon also has a thin atmosphere, which is composed of gases such as carbon dioxide and argon.

The moon's gravitational force on Earth is what causes the tides. The gravitational force of the moon on Earth causes water to be pulled towards the moon, creating high tides. This force also causes water to be pulled away from the moon, creating low tides.

The moon is an important resource for the future of space exploration. It is rich in resources that could be used for future space missions. These resources include water, metals, and other valuable materials.

The moon is also an important target for space tourism. In the future, it is possible that people will be able to visit the moon for leisure or business purposes.

Moon: 384,400 km (239,000 miles)

Etc
96.7% of Full. Taken with a digital camera shooting handheld down the tube of a Galileo FS-120DX telescope. 25mm eyepiece.

Moon map: Annotated with notes using The Skywatcher's Guide to the Moon, Zoom Astronomy's Moon Map, Geologic History of the Moon and Wikipedia. Mouse over objects in the picture to learn more.

Until I get some type of eyepiece adapter, this is probably the best image I'll be able to take. This flickr member seems to have figured out some excellent techniques.

This photo has notes. Move your mouse over the photo to see them.
Using NASA Imagery and Linking to NASA Web Sites

Still Images, Audio Recordings, Video, and Related Computer Files

NASA still images; audio files; video; and computer files used in the rendition of 3-dimensional models, such as texture maps and polygon data in any format, generally are not copyrighted. You may use NASA imagery, video, audio, and data files used for the rendition of 3-dimensional models for educational or informational purposes, including photo collections, textbooks, public exhibits, computer graphical simulations, and Internet Web pages. This general permission extends to personal Web pages.

This general permission does not extend to use of the NASA insignia logo (the blue "meatball" insignia), the retired NASA logotype (the red "worm" logo) and the NASA seal. These images may not be used by persons who are not NASA employees or on products (including Web pages) that are not NASA sponsored.

If the NASA material is to be used for commercial purposes, especially including advertisements, it must not explicitly or implicitly convey NASA's endorsement of commercial goods or services. If a NASA image includes an identifiable person, using the image for commercial purposes may infringe that person's right of privacy or publicity, and permission should be obtained from the person. Any questions regarding application of any NASA image or emblem should be directed to:

Some searching suggests that the material may be in the public domain…
Wikipedia info –
Licensed using GNU Free Documentation License (GFDL), which is roughly (but not exactly) equivalent to the CC BY-SA license.
CC BY-NC-SA
+
Public domain (?)
+
GFDL
=

A hopeless legal jumble
Where is the Global Learning Commons?
Our mission is to minimize legal, technical, and social barriers to sharing and reuse of educational materials.

ccLearn is a division of Creative Commons dedicated to realizing the full potential of the internet to support open learning and open educational resources.

Our mission is to minimize legal, technical, and social barriers to sharing and reuse of educational materials.

New Resources
Added to Publications:

Added to Articles:
* The beauty of “Some Rights Reserved”: Introducing Creative Commons to Librarians, faculty, and students
* ‘The Objective of Education Is Learning, Not Teaching’
* Minds on Fire: Open Education, the Long Tail, and Learning 2.0
The world is changing...
An anthropological introduction to YouTube
by Michael Wesch
Presented at the Library of Congress
June 23rd 2008
The Internet is BIG…


Matt Britt
http://mirrors.creativecommons.org/wannaworktogether/wannaworktogether.mov
What are Open Educational Resources?

Digitized materials offered freely and openly for educators, students and self-learners to use and re-use for teaching, learning and research.*

Open education depends on a high-quality pool of freely licensed resources.

OER give learners access to a broad array of knowledge materials... available for anyone to use, share, and adapt to suit their educational needs.
Read the Declaration

Cape Town Open Education Declaration: Unlocking the promise of open educational resources

We are on the cusp of a global revolution in teaching and learning. Educators worldwide are developing a vast pool of educational resources on the Internet, open and free for all to use. These educators are creating a world where each and every person on earth can access and contribute to the sum of all human knowledge. They are also planting the seeds of a new pedagogy where educators and learners create, shape and evolve knowledge together, deepening their skills and understanding as they go.

This emerging open education movement combines the established tradition of sharing good ideas with fellow educators and the collaborative, interactive culture of the Internet. It is built on the belief that everyone should have the freedom to use, customize, improve and redistribute educational resources without constraint. Educators, learners and others who share this belief are gathering together as part of a worldwide effort to make education both more accessible and more effective.

The expanding global collection of open educational resources has created fertile ground for this effort. These resources include openly licensed course materials, lesson plans, textbooks, games, software and other materials that support teaching and learning. They contribute to making education more accessible, especially where money for learning materials is scarce. They also nourish the kind of participatory culture of learning, creating, sharing and cooperation that rapidly changing knowledge societies need.

However, open education is not limited to just open educational resources. It also draws upon open technologies that facilitate collaborative, flexible learning and the open-sharing of teaching practices that empower educators to benefit from the best
What is different about OER?

Most digital media = “stuff you can see online for free” → fair-use and educational exceptions

OER = “stuff you can adapt and then share for others to build on” → license to innovate
Open education supports skill development through Active learner participation

- finding
- evaluating
- generating knowledge

Skills gained:
- critical thinking
- creativity
- communication
- collaboration

http://www.flickr.com/photos/suswar/2500249119/
Open education supports equal education opportunity, regardless of region, income, or level of technology.
OER can be easily modified, translated, and shared, so they encourage local production of educational resources suited to both individual and societal values, language and culture.
Advanced technology is not necessary.

OER can be easily modified and adapted to different learning circumstances.
When IP restricts access, adaptation, and sharing, OER help open doors protecting the right to education.

http://flickr.com/photos/fruey/1368008974/
Open education supports

- formal education
- informal education
- lifelong learning
Most students begin their education highly motivated to learn;

Most teachers are highly motivated to share knowledge, not only with their students but with anyone who can benefit.
A child educated only at school is an uneducated child.

- George Santayana

Nothing in education is so astonishing as the amount of ignorance it accumulates in the form of inert facts.

- Henry B. Adams
First, a look at the Legal Barriers.
CC offers an easy way to share materials, versus the murky interpretations of fair use in copyright law.
A spectrum of rights
CC BY ...

- Allows the most freedoms without giving up attribution, which is important for credibility in education

- Is compatible with every other CC license, allowing the most room for innovation via collaboration

- Does not encroach on the freedom of potential users by enforcing a specified use:
  
  e.g. CC BY-SA requires you to share alike, even if the new work is best suited for another license
You are free:

- to Share — to copy, distribute and transmit the work
- to Remix — to adapt the work

Under the following conditions:

**Attribution.** You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

- For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page.
- Any of the above conditions can be waived if you get permission from the copyright holder.
- Nothing in this license impairs or restricts the author's moral rights.

Your fair dealing and other rights are in no way affected by the above.

This is a human-readable summary of the Legal Code (the full license).
But what about Technical Barriers?
CC overcomes Technical Barriers

CC Licenses are also clear to search engines

- CC Licenses specify licensing permissions on works in metadata (RDFa)
- The metadata are also available for other applications, such as search engines, Flickr, and...
Women In Engineering Organization
This portion of the Women in Engineering website defines what the term engineering means, gives some general guidelines as to what it takes to become an engineer, and defines types of engineering. This resource is appropriate for all users, particularly for girls and women, because it targets girls or women, uses inclusive images of girls or women, and shows how engineering can be used to solve real-world problems. Copyright 2005 EDC

Curator: NEDL  Education Level: Learner  Language:  License: 
Subject Tags: Education issues, Careers, Mathematics, Real world applications, Engineering mathematics, Science, Physical science
(explain) (anchors)

Careers - Food Science Program, Department of Process Engineering and Applied Science
This site gives an overview of what is needed to be a food scientist. Required education, types of jobs available, and a salary survey are included.

Curator: NEDL  Education Level:  Language:  License: 
Subject Tags: Job descriptions, Chemistry—Vocational guidance, Jobs and Careers -- Career Information -- Job Types, Descriptions, and Tasks, Chemists, Food industry
(explain) (anchors)

Fundamentals of Electrical Engineering I
The course focuses on the creation, manipulation, transmission, and reception of information by electronic means. Elementary signal theory; time- and frequency-domain analysis; Sampling Theorem. Digital information theory; digital transmission of analog signals; error-correcting codes.

Curator: OER Commons  Education Level:  Language: en  License: 
Subject Tags: Science and Technology
(more from cnx.org) (explain) (anchors)

http://www.engineering.uiowa.edu/%7Eswan/courses/53030/notes/gsd.pdf
In soil mechanics, it is virtually always useful to quantify the size of the grains in a type of soil. Since a given soil will often be made up of grains of many different sizes, sizes are measured in terms of grain size distributions. Grain size distribution (GSD) information can be of value in providing initial rough estimates of a
There is a significant gap between what computers “see” and what humans see. This is one of the fundamental barriers to the infrastructure of the semantic web, but is also solvable.
A Link without Flavor

distributed under a
<a href="http://creativecommons.org/licenses/by/3.0/">Creative Commons License</a>
A Link with Flavor

distributed under a

\(<a rel="license" href="http://creativecommons.org/licenses/by/3.0/\> Creative Commons License \</a\>
Text without Flavor

<h2>The Trouble with Bob</h2>
<h3>Alice</h3>
Text with Flavor

<h2 property="dc:title">The Trouble with Bob</h2>
<h3 property="dc:creator">Alice</h3>

- Why dc:title, why not just title?
- Which meaning of "title"? Article title, job title, real estate title?
- License is a reserved HTML keyword, but title is not.
- We must "import" this concept from somewhere.
  - The Dublin Core vocabulary:
    - http://purl.org/dc/elements/1.1/
    - concepts including: title, creator, copyright, etc.
- Note that it doesn’t actually matter which vocabulary is used, as long as the machine can interpret the intent.
You are free:

- to Share — to copy, distribute, display, and perform the work
- to Remix — to make derivative works

Under the following conditions:

- **Attribution**: You must attribute this work to The PhET Team, University of Colorado (with link).

\[
\text{Attribution this work:}
\]

- **Noncommercial**: You may not use this work for commercial purposes.

- For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page.
- Any of the above conditions can be waived if you get permission from the copyright holder.
- Apart from the remix rights granted under this license, nothing in this license impairs or restricts the author’s moral rights.

Your fair use and other rights are in no way affected by the above.
And finally, the Social Barriers to Open Education

Judy Baxter cbna

http://flickr.com/photos/judybaxter/501511984/
Social Barriers

- Technical Unfamiliarity
- Workload
- Organizational Pressures
- Resources
  - Socioeconomic Factors
  - Teacher Education
  - Time Management
  - Teacher Salary
- Standardized Curricula
- Tenure Standards

Cultural

- Agency
- Developed World vs Developing World
- Mine vs Commons
- Developed World
- Noncommercial Term
- Awareness, Misconceptions

(Bissell and Boyle)
Libraries are not just for reading in, but for sociable thinking, exploring, exchanging ideas and falling in love. They were never silent.

Technology will not change that, for even in the starchiest heyday of Victorian self-improvement, libraries were intended to be meeting places of the mind, recreational as well as educational.

[Here is] a set of rules that describe our reactions to technologies:

1. Anything that is in the world when you're born is normal and ordinary and is just a natural part of the way the world works.

2. Anything that's invented between when you're fifteen and thirty-five is new and exciting and revolutionary and you can probably get a career in it.

3. Anything invented after you're thirty-five is against the natural order of things.

“...part of the pleasure of a library lies in its very existence”.
- Jan Morris
A university is just a group of buildings gathered around a library.

- Shelby Foote

http://flickr.com/photos/hefmercer/118523505/