Flipping Sustainability: Web 2.0 Imagines a Sustainable Future

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Chapman University

California Higher Education Sustainability Conference San Francisco, CA
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Imagining a Sustainable Future
What is Flipping?

Moving some of the content online and out of class in order to facilitate active, deeper learning in class

“The learning in school should be continuous with that out of school”

Dewey (1919)
Bloom’s Taxonomy of Learning (New Version)

- Remembering
- Understanding
- Applying
- Analyzing
- Evaluating
- Creating

Increasing difficulty
6 Reasons to Flip the Classroom

- Promotes use of sustainable tools
- Enhances digital literacy skills
- Encourages student engagement
- Promotes ownership of active learning
- Creates learner-centered, not teacher-centered, space
- Generates opportunities for multiple leaders; Eco-Leadership style
Eco-Leadership

- A form of organizational leadership within a network of interdependent webs of relationship
- Enables shared advocacy for commonly held goals
“Our interdependence in a fast-changing world requires radical leadership rethinking. Globalization and the network society have wide-ranging impacts, reconfiguring how we organize, communicate, and relate.”

Platforms for creating, curating, and sequencing flipping

- iTunes U – features and limitations
- iBooks – possibility for publishing and sharing research and curriculum
- YouTube – playlists and video hosting
# USF Sustainability Course

**Sustainability**
University of South Florida

- **Details**
- **Ratings and Reviews**
- **Related**

## Description

These podcasts reflect the thoughts and actions of people who are working to achieve a balance between the consumption of natural resources and the price to be paid for using them.

<table>
<thead>
<tr>
<th>Name</th>
<th>Time</th>
<th>Released</th>
<th>Description</th>
<th>Popularity</th>
<th>Price</th>
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<tbody>
<tr>
<td>USF Patel School of Global Sustain...</td>
<td>10 min</td>
<td>Oct 4, 2012</td>
<td>Dr. Richard Fenner...</td>
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<td>CACCE Phase 1 project</td>
<td>1 hr 1 min</td>
<td>Feb 2, 2012</td>
<td>EWRE lecture series</td>
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<td>43 min</td>
<td>Dec 4, 2011</td>
<td>Environmental &amp; W...</td>
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<td>43 min</td>
<td>Dec 4, 2011</td>
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<td>Tampa Bay Estuary Program - ...</td>
<td>12 min</td>
<td>Nov 17, 2011</td>
<td>Water Choices IV</td>
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<td>Dr. Kaia Vailathamoorthy - Wat...</td>
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<td>Water Choices IV</td>
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<td>USF Provost Dr. Ralph Wilcox - ...</td>
<td>3 min</td>
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<td>USF Patel Center 1...</td>
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<td>Sep 22, 2011</td>
<td>Sustainability pod...</td>
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<td>Sep 7, 2011</td>
<td>AEESP 2011 conf...</td>
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<td>Climate Change and Development:...</td>
<td>48 min</td>
<td>Sep 6, 2011</td>
<td>Keynote presentation</td>
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<td>Understanding The Oceans</td>
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<td>Aug 11, 2011</td>
<td>Sustaining the future</td>
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<tr>
<td>Solar Energy at USF</td>
<td>10 min</td>
<td>Jul 21, 2011</td>
<td>Harnessing the sun...</td>
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<td>AEESP 2011 Remarks by Dr. John ...</td>
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<td>Jul 20, 2011</td>
<td>2011 AEESP Resume</td>
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<td>Jul 18, 2011</td>
<td>AEESP 2011 Conf...</td>
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Thousands of talks online

Technology, Education, Design = TED
Content Curator Model

Inside the Garbage of the World

300 hours of video uploaded every minute
Sample Playlist

Sustainable Homes
Examples of sustainable homes in various settings.

1. Elora Hardy: Magical houses, made of bamboo by TED
2. "Earthship Biotecture": Renegade New Mexico Architect's Radical Approach to Sustainable Living by Democracy Now!
3. Empowerhouse = Passive House = Energy efficient, environmentally sustainable, affordable housing by The New School
4. Constructing Sustainable Houses Develops Collaborative Skills (Is School Enough? Series) by Edutopia
5. Off-grid urban home in Sydney reuses own sewage by Kirsten Dirksen
6. Homegrown Revolution (Award winning short-film 2009)- The Urban Homestead, Dervaes by Urban Homestead

300 hours of video uploaded every minute
Curriculum for Solar Decathlon 2015

- Built around 10 tasks of competition.
- Net-zero energy solar home
- Applies
  - Systems thinking
  - Principles of Sustainability
  - Eco-leadership
Solar Decathlon around the World
Architecture Contest

- Does a clear concept guide the design process?
- Sustainable practices and materials
- Cradle-to-cradle principles
- Sustainably sourced building materials
Market Appeal Contest

- Builds on appeals of sustainability
- Do sustainability features and strategies contribute to the house's marketability?
- Livability?
- Buildability?
Does the design demonstrate market-leading technologies and engineering integration?
Teaching Sustainability in Action

- Are the public exhibit materials creative, original, and informative?
- Is the house tour informative, interesting, and engaging?
- Do the website and social media inform and teach?
- Are the educational and outreach messages effective in conveying information about sustainable design and execution?
Affordability Contest

Does the house cost less than $250,000 to build? 100 points!
Does the house maintain a comfort zone between 71°F (22.2°C) and 76°F (24.4°C)?

Is relative humidity less than 60%?
Appliances Contest

- Does the home mimic the appliance use of an average U.S. home?
Home Life Contest

- How well does the home accommodate the pleasures of living?
- Of sharing meals with friends and family?
- Watching movies in a home theater?
- Checking social media?
- Taking a warm shower?
Commuting Contest

- How well does the solar energy array support the use of an electric vehicle charged from their house electric system?
Does the home produce at least as much energy as its house needs, thus achieving a net energy consumption of zero during the competition?
Solar Decathlon Projects

- Student Research Forum
  - Juried poster presentations
  - Rigorous collaborative researched projects
  - Ten contests & their realization

- Web-based projects
  - YouTube documentaries
  - Blogs

- iBooks
Flipping promises to . . .

- Empower students to take ownership of their own education;
- Enable students to recognize and evaluate authoritative sources for sustainability education;
- Promote 21st century skills;
- Help students operationalize principles of sustainability.
Yes. We can flip classrooms to provide rich and active learning environments . . . to respond to ecological exigencies.
Questions?
Thanks for coming!
References


References cont’d