Digital Badges and the Analysis of Learning and Educational Activity

Daniel Hickey

LEARNING SCIENCES
INDIANA UNIVERSITY SCHOOL OF EDUCATION

CRLT
Center for Research on Learning & Technology
Indiana University | School of Education

Building the Field of
Digital Media and Learning

MacArthur
The John D. and Catherine T. MacArthur Foundation

Office of the Vice President for Information Technology

- Web-enabled tokens of accomplishments
  - Eight fields of information and an image
  - Mozilla foundation established the Open Badges Infrastructure (OBI)
- Can be accumulated internally or externally
  - Mozilla's digital "backpack"
- Can be shared over email and social networks (not LinkedIn!)
- Contain specific claims about learning
- Contain evidence of learning
  - Links to more evidence
  - Digital artifacts
  - Rubics, peer comments, feedback, etc.

openbadges.org

Example DML Badge System
Supporter to Reporter at digitalme

- digitalme is a collective of UK educational innovators
- Badge the UK is a big push to coordinate informal learning
- Makewaves/S2R medals was a DML 2012 Awardee

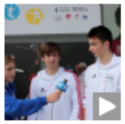
Member Of S2R Medals

JOIN NOW!

S2R Channels
Resources & Reports

Channels

Reports from the Sainsbury's 2013 School Games



Athlete focus
'The Creators' video for the final day...

The Big Guns Report of Judo
This report focuses on the pressure, commitment and determination it takes to be a young athlete

Sainsbury's School Games 2013 Volunteers
This report captures all of the great work the volunteers do to help make the School Games a success

Top Sports Reports

School Games Organiser's Summit 2013
Catmose Media Team visited Kettering for the SGO Summit and met a VERY special Olympian

Fencing
By Rowan Tierney

Successful 'Tiger' cubs
Students get trials at Leicester Tigers

Award S2R Medals

Top Tips

Already on Makewaves?
Sign up to S2R here...

Free Resources

FAQs

S2R Medal Achievements

75 awarded

1720 awarded

Teacher HQ

Help to make it happen

Channels

Help 15

Case Studies 11

Teacher Talk

Resources and Activities - Get Involved!

Safe

Safe is a programme of practical activities to develop primary children's skills, self-confidence and safety awareness when using social networking

What Will You Make?

This Term on Makewaves

Find out what's happening this term that you and your students can get involved with...

The Essential Makewaves Knowledge

Hints & tips to make running your site easy!

Makewaves Badges

How to Make Badges

All you need to know about making Badges to award on Makewaves

Makewaves Badges

All you need to know about awarding and making badges on Makewaves

Make things your way with the Makebadges site

Design your own free badges, banners & avatars - perfect for Makewaves!

The Makewaves App!

The New Makewaves App

Created via the App

Using the Makewaves App in Schools

Beth Smith and Alan Crist discuss using the Makewaves App in schools

makewaves Join Community Help HQ

S2R Medals

Earn your S2R Bronze Journalist Medal

Create 3 sport reports and earn your S2R medal

Like 2 Likes 0 comments 754 views 21st January 2013

S2R Journalist is all about digital literacy and speaking and listening skills as you learn how to plan, create and publish sports reports across a range of media types. You submit your media stories to the 'S2R Medals Channel' on Makewaves to receive your Medals.

To earn the **S2R Bronze Journalist Medal** you must create three sports reports of acceptable quality which are accepted into the S2R Medals channel. They need to be about sport, use appropriate language and contain text and images/videos.

Made By

S2RManager

S2RMedals

Makewaves Badges

Share

Earn your first S2R Medal now!

More Like This...

New Album... Jack The SaXmas

Scratch competition

Whole Education 2013

makewaves Join Community Help HQ Search Login

GlennWheeler Senior

Part of digitalme

My Makewaves Badges

Show All

Other badges

Visit your Backpack!

Share

My Stories

1 2 3 4 5 Next

The Creators Media Team

A fun presentation of the team members

The Creators complete their brief

Day three of the Sainbury's 2013 School Games

Athlete focus

'The Creators' video for the final day...

Volleyball A Courtside View

Today, 'The Creators' discovered what it was like to film and be involved in Volleyball...

Interview With Hannah Cockroft MBE

Yesterday on Thursday 12th September, we spoke to Hannah Cockroft MBE

The Creators get creative on day two

Day two of the youth media team

My Friends

Find more friends here

55 Friend(s) 1 2 3 4 5

My Stats

80 Stories 6 Blogs

13 Badges

4 Profile Comments

55 Friends 194 Profile Views

mozilla OpenBadges

Youth Sport Trust 2013 Media Team

Awarded for reporting at Sainsbury's 2013 School Games with the youth media team.

What someone needs to do to earn this badge

Evidence

www.makewav.es//story/569437... 2013-09-18

Issuer

Name schoolgames

Site https://www.makewav.es/schoolgames

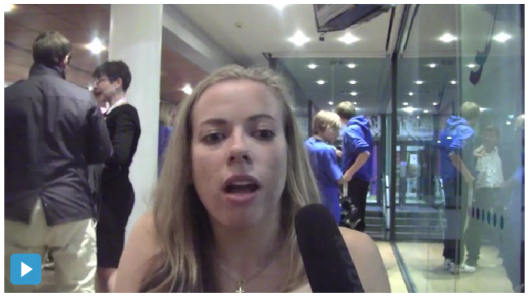
makewaves Join Community Help HQ

Catmose College

Interview With Hannah Cockroft MBE

Yesterday on Thursday 12th September, we spoke to Hannah Cockroft MBE

Like 8 Likes 0 comments 516 views 13th September 2013



Our Interview...

At the VIP opening evening, we managed to get an inspirational interview with Hannah Cockroft MBE and she officially opened The Sainbury's School Games 2013.

https://www.makewav.es//story/569437/title/InterviewWithHannahCockroftMBE

Digital Youth Network
Chicago Summer of Learning


digital youth network

BADGES FOR LEARNING: A DESIGN FRAMEWORK

Design badges that enhance learning and empower your participants.

Why badges?

Badges have the potential to radically shift how learning experiences are achieved, shared, and recognized. The Chicago-based Digital Youth Network (DYN) has developed a framework that connects badges to a set of learning experiences, with an end goal of better supporting interest-driven learning in a social community to create richer and more concrete paths to discovery.

Badges can:

...allow individuals to receive recognition for skills and achievements gained
...signal mastery of specific skills or roles
...provide bridges between informal learning opportunities and formal environments
...increase the visibility of potential pathways for learning and exploring new skills and interests
...provide the motivation to explore with a new degree of interest and confidence
...become more meaningful over time, as learners combine badges to build a portfolio that represent who they are and what they can do

Badge Types

All badges are not created equal - the DYN framework builds on 3 types of badges.

COMMUNITY
Community badges recognize behaviors and attributes that are valued by the community and reinforce social norms and practices.

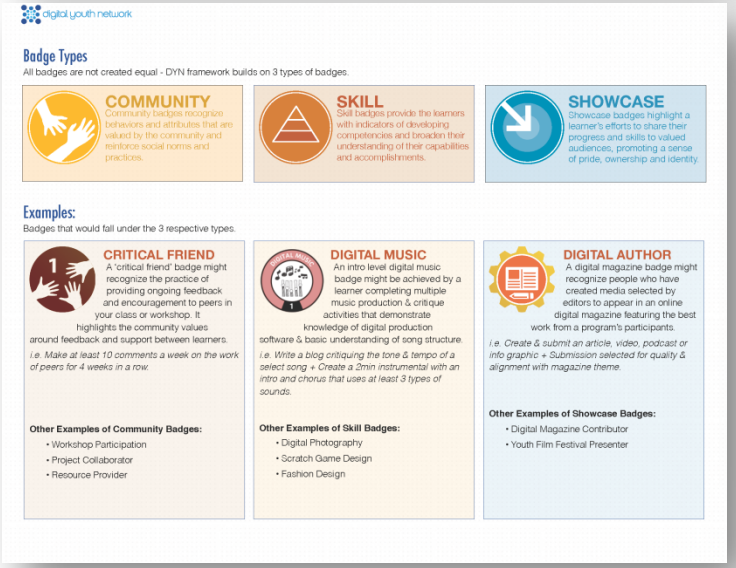
- Recognize specific attributes or behaviors that are valued by the community
- Reinforce social norms and practices
- Reflect or respond to growing norms in developing community over time
- Support mentor to learner as well as learner to learner recognition of specific attributes or behaviors

SKILL
Skill badges provide the learners with indicators of developing competencies and broaden their understanding of their capabilities and accomplishments.

- Relate directly to key skills aligned with identified outcomes
- Should have clear connections to "doing"
- Require "evidence" in the form of artifacts
- Have predetermined expectations of levels of quality
- Are awarded by teacher or mentor
- May combine active creation and reflective components

SHOWCASE
Showcase badges highlight a learner's efforts to share their progress and skills to valued audiences, promoting a sense of pride, ownership and identity.

- Based in situations or experiences where concrete skills are demonstrated to an audience that is valued to the learner
- May include components of performance, exhibition or publication
- May have elements of competition
- May also reinforce social norms and practices


digital youth network

Badge Types

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Community badges recognize behaviors and attributes that are valued by the community and reinforce social norms and practices.

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Skill badges provide the learners with indicators of developing competencies and broaden their understanding of their capabilities and accomplishments.

SHOWCASE
Showcase badges highlight a learner's efforts to share their progress and skills to valued audiences, promoting a sense of pride, ownership and identity.

Examples:

Badges that would fall under the 3 respective types.

CRITICAL FRIEND
A "critical friend" badge might recognize the practice of providing ongoing feedback and encouragement to peers in your class or workshop. It highlights the community values around feedback and support between learners.

i.e. Make at least 10 comments a week on the work of peers for 4 weeks in a row.

Other Examples of Community Badges:
- Workshop Participation
- Project Collaborator
- Resource Provider

DIGITAL MUSIC
An intro level digital music badge might be achieved by a learner completing multiple music production & critique activities that demonstrate knowledge of digital production software & basic understanding of song structure.

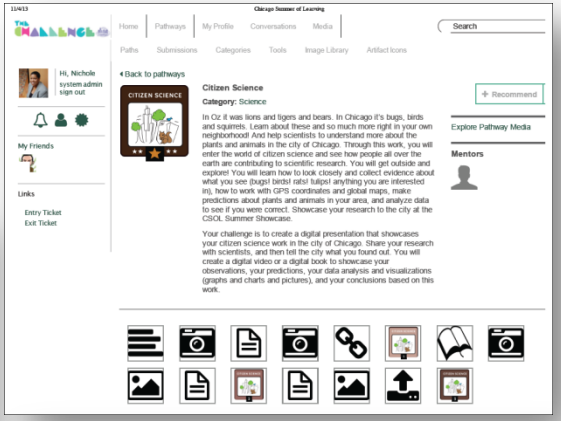
i.e. Write a blog critiquing the tone & tempo of a select song + Create a 2min instrumental with an intro and chorus that uses at least 3 types of sounds.

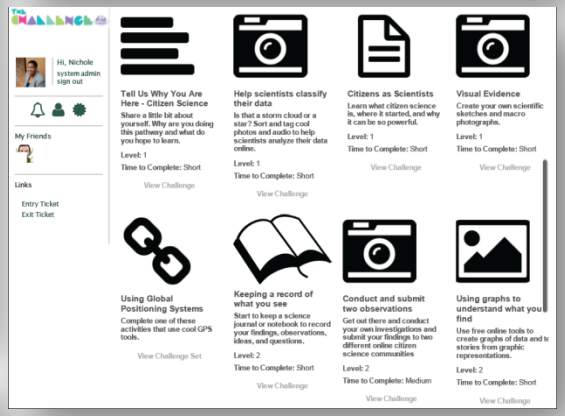
Other Examples of Skill Badges:
- Digital Photography
- Scratch Game Design
- Fashion Design

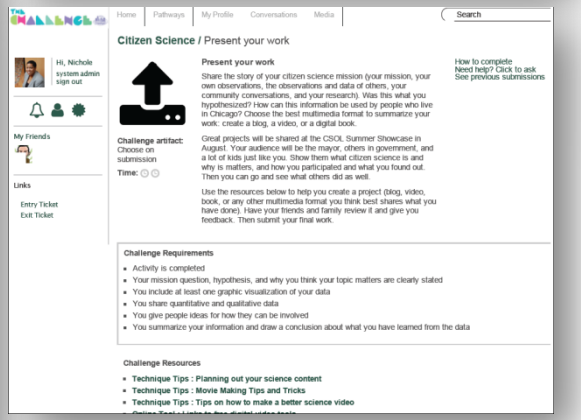
DIGITAL AUTHOR
A digital magazine badge might recognize people who have created media selected by editors to appear in an online digital magazine featuring the best work from a program's participants.

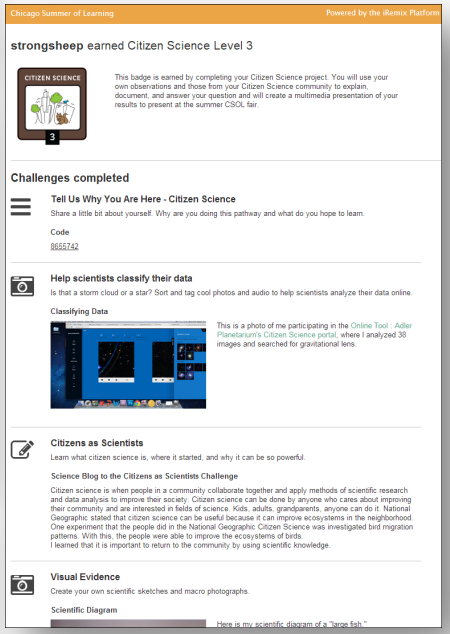
i.e. Create & submit an article, video, podcast or info graphic + Submission selected for quality & alignment with magazine theme.

Other Examples of Showcase Badges:
- Digital Magazine Contributor
- Youth Film Festival Presenter









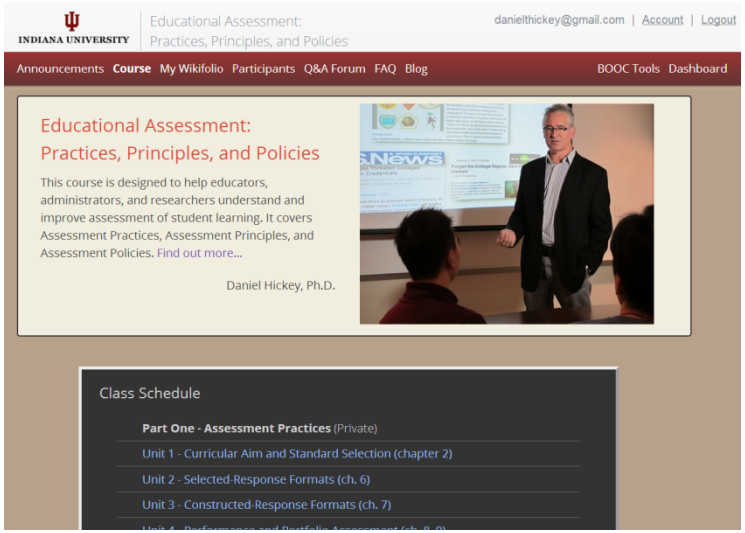
3D GameLab - Earn Badges!

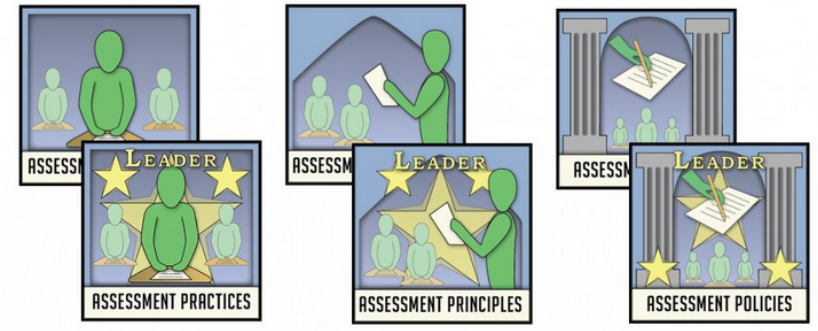
Digital Badges: Unlocking Two Million Better Futures - CGI America…

Jason Explains Digital Badges

What Is A Badge?

Example Non-DML Badges Ecosystem Educational Assessment BOOC





- Twelve weeks in Google *Course Builder*
  - Personalization via aim & role
  - Work in professional networking groups
  - Textbook and weekly wikifolios
- Three *Expertise* badges
  - Assessment *Practices*
  - Assessment *Principles*
  - Assessment *Policies*
- One *Assessment Expert* badge for earning the three expertise badges
- Most promotions in each group earns *Leader* badges
- Began with 460 registrants
  - Now around 80 active
  - Include 8 enrolled for credit
  - https://booc-iu.appspot.com/wiki?unit=8&student=46186&action=view

Reflection (By November 3)

A. Consequential Engagement: This was by far the most interesting and relevant unit to me so far. As a result of what I learned this week, I definitely plan to learn more about, and practice more, the art of learning progressions because I see them as an incredibly powerful tool to structure and direct instruction. I also plan to do more research about specific formative assessment strategies that are effective in the classroom.

B. Critical Engagement: I found my role and curricular aim very well suited to this week's concepts and big ideas. Not only was I able to see how my curricular aim could be reached via a learning progression, but I was also able to reflect on how to use formative assessment to make real time instructional adjustments, which is something I have seen in my consulting work that not a lot of teachers know how to do. Therefore, I can see how becoming somewhat of an expert on this topic could really help me in my work to add value and improve learning outcomes for many students.

C. As usual, [redacted]s work was insightful because as a classroom teacher, she is able to bring a very practical perspective to all of the concepts surrounding formative assessment. Her learning progression was very clear and really helped me to see that formative assessment does not have to be a complicated or difficult task for a teacher. I also learned a great deal from Patricia Tylka's work, particularly her observations about the importance of the right kind of feedback and her definition of formative assessment that uses a medical analogy. I also appreciated the Illinois resources on formative assessment that Patricia shared.

Endorse and Promote

This page has been endorsed as complete by [redacted] Adjunct college instructor, retired h.s. English teacher, [redacted] Librarian, and [redacted] Elementary Educ

Click here to **endorse** that the author has completed

the required elements, or **the required AND optional elements**

of the assignment.

You can promote this page as exemplary!

This is great because...

★ Exemplary

★ This page has been promoted as exemplary by [redacted] Elementary Educ [redacted] Librarian [redacted] and [redacted] Adjunct college instructor, retired h.s. English teacher [redacted]

Show reasons...

INDIANA UNIVERSITY

Educational Assessment: Practices, Principles, and Policies

danielthickey@gm

Announcements Course My Wikifolio Participants Q&A Forum FAQ Blog

Student Profile for danielthickey@gmail.com

Date enrolled	2013-08-02
Email	danielthickey@gmail.com
Name	Dan Hickey
Name for badges and certificates	Dan Hickey
Endorsements	List of all your endorsements and promotions
Comments	List of all your comments
Assessment scores	
Assessment Practices Exam (open October 9 through 19)	85
Assessment Principles Exam (open October 30 through November 6)	0
Assessment Policies Exam (open November 20 through December 4)	0

As of 2013-10-24 at 15:38 UTC:
Unit 1 - *Complete!*
Promotions: 0 - Endorsements: 1 - Comments: 4
Unit 2 - *Complete!*
Promotions: 0 - Endorsements: 1 - Comments: 0
Unit 3 - *Complete!*
Promotions: 0 - Endorsements: 1 - Comments: 0
Unit 4 - *Complete!*
Promotions: 0 - Endorsements: 1 - Comments: 2
Assessment Practices Exam (open October 9 through 19) - *Complete!*
85 out of 100, 80 required to pass

ASSESSMENT PRACTICES

Claim on Mozilla Badge Backpack
Share via e-mail
Share on Facebook
Tweet on Twitter
Share on Google+
Badge Settings

See your Evidence page for this badge.

mozilla Backpack

You are about to send 1 badge to your Mozilla Backpack at beta.openbadges.org.

Hoorah!

I am not danielthicke

mozilla Backpack Badges Collections danielthickey@gmail.com

My Collections

Organize badges the way you want

Professional Badges

public

P507

Assessment Practice...
Issuer: BOOC Stage Testing

Learning Expert: Rat...
Issuer: Daniel T. Hickey, Associate ...

Collaborative Engag...
Issuer: ForAllBadges (www.forallba...

New Display Name

This is the name that other participants see on the web site.

Change Name

New Name for Badges and Certificates

Change Badge Name

To leave the course permanently, click on Unenroll

Unenroll

Daniel Hickey shared a link.
October 23

Check out our awesome new badges from the Educational Assessment BOOC. Our programmer Thomas Smith built a brilliant interface and Garrett Poortinga created some attention-grabbing graphics. But the coolest thing is the way Thomas was abl... See More

ASSESSMENT PRACTICES

Badge Evidence - Educational Assessment: Practices, Principles, and Policies
booc-stage.appspot.com

Badge Evidence Settings for Assessment Practices

Show my Wikifolio entries for this badge on the evidence page?

Save

Assessment Practices Expertise

Dan Hickey earned this badge by participating in the Educational Assessment BOOC. The earner of this badge has gained and demonstrated expertise with the primary item formats in classroom assessments.

Criteria for issuance

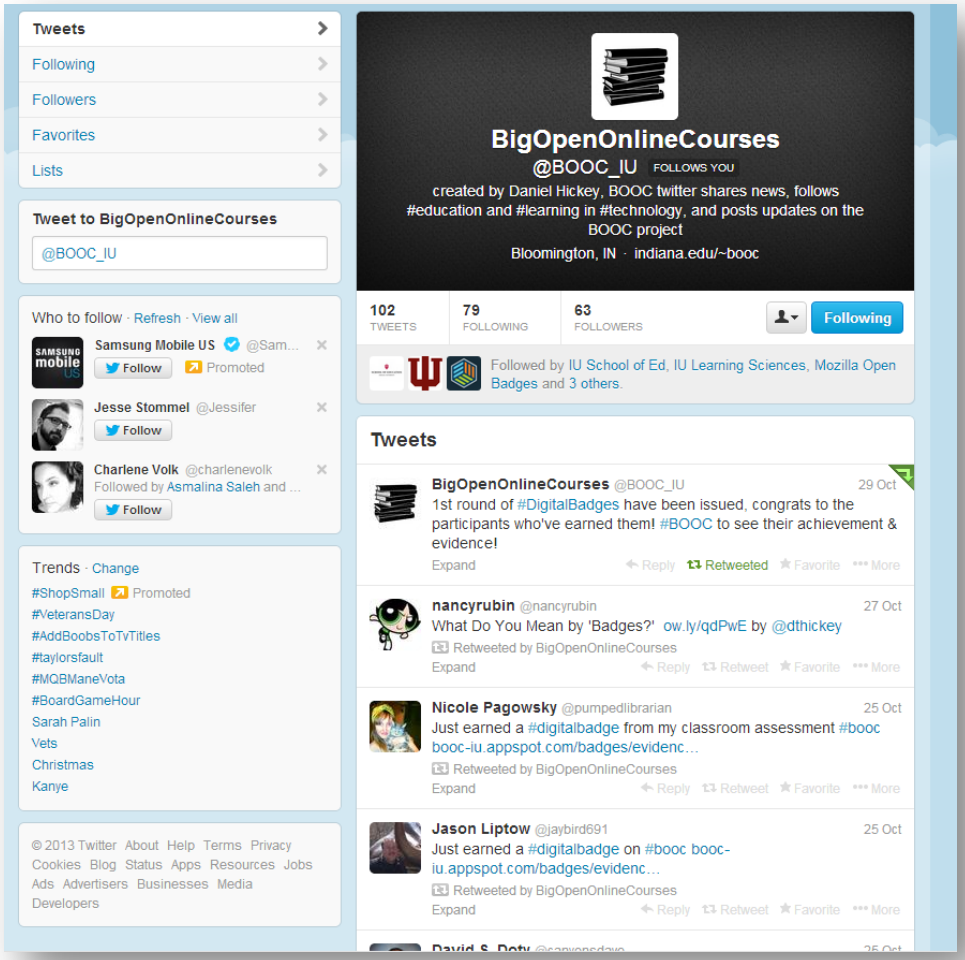
This badge is issued for:

- Completing four personalized Wikifolio assignments (linked below)
- Scoring over 80% on a 20-item examination
- Engaging with peers in discussion (not included in links below, for peer privacy)
- Endorsing and promoting peers' Wikifolios

Evidence

As of 2013-10-24 at 15:38 UTC:
Unit 1 - Curricular Aim and Standard Selection
Complete!
Promotions: 0 - Endorsements: 1 - Comments: 4
Unit 2 - Selected-Response Formats
Complete!
Promotions: 0 - Endorsements: 1 - Comments: 0
Unit 3 - Constructed-Response Formats
Complete!
Promotions: 0 - Endorsements: 1 - Comments: 0
Unit 4 - Performance and Portfolio Assessment
Complete!
Promotions: 0 - Endorsements: 1 - Comments: 2
Assessment Practices Exam (open October 9 through 19) - *Complete!*
Passed with at least 80 out of 100%.

ASSESSMENT PRACTICES

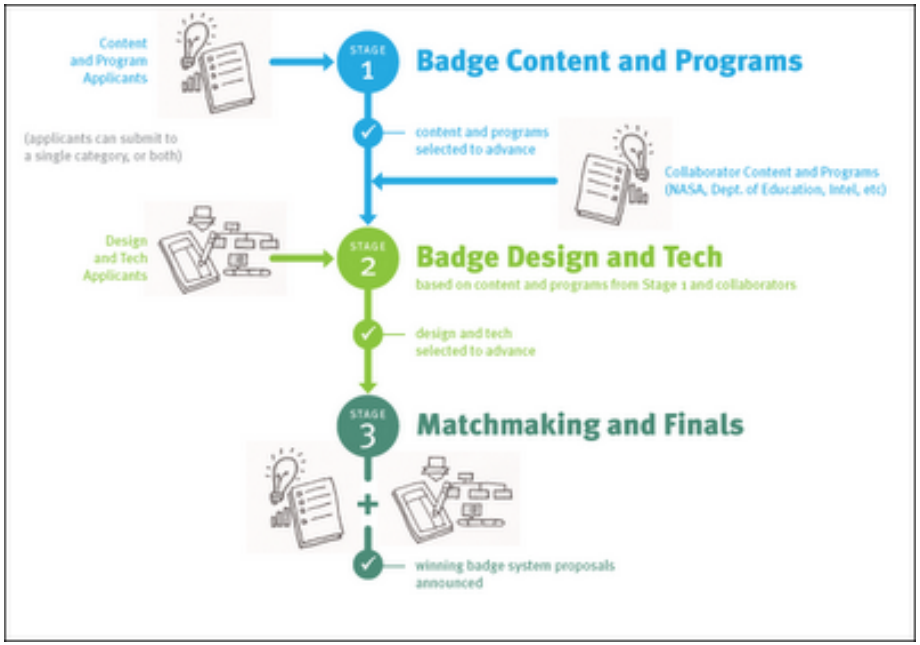


Comment Posted to Remediatingassessment.blogspot.com (emphasis added)

SharonSOctober 29, 2013 at 1:23 PM

I am currently taking Dr. Hickey's Educational Assessment BOOC, and was surprised at how excited I was when my badge was issued. **I immediately shared it with my family members, and in particular those who are educators**. Two days later, my aunt who is a tech integration specialist at a school district in VT posted her own badge she had earned by participating in a Connected Educators activity; **she claimed she had to do it in order to keep up with me.** I have also used them a handful of times with my own students in the Edmodo software system, and students have indicated that they want to get more badges.

The *Design Principles Documentation Project*



- 2012 DML Badges Competition
- 600 badge content proposals
- 3 platforms supported
- 30 content developers support

LEARNING SCIENCES
INDIANA UNIVERSITY SCHOOL OF EDUCATION

CRLT
Center for Research on Learning & Technology
Indiana University | School of Education

Collaborators & Partners


Rebecca Itow


Katerina Schenke


Cathy Tran


Nate Otto


Christine Chow

MacArthur Foundation

HASTAC
Humanities, Arts, Science, and Technology Advanced Collaboratory

mozilla FOUNDATION


youtopia


Badge Stack


P2PU


HASTAC
Humanities, Arts, Science, and Technology Advanced Collaboratory


pragmatic
without us, it's just a game™


PROJECT
WHITECARD


gogo LABS
shake-it-up learning


3D GAME LAB


Social Impact Exchange
Taking successful innovation to scale


intel
INTERNATIONAL
SCIENCE
AND
ENGINEERING
FAIR


SOCIETY FOR
SCIENCE & THE PUBLIC
Inform. Educate. Inspire.


MANUFACTURING
Institute


makewaves


Girl Scouts®


StoryCorps
The conversation of a lifetime


ROADTRIP
NATION
Define your own road in life.


Microsoft
Partners in Learning


PASA
PROVIDENCE AFTER SCHOOL ALLIANCE


buzz Math


WE


EARTHWORKS


HIVE
Digital Media
Learning Fund
in The New York Community Trust


NOAA


BADGES FOR
VETS

yalsa
Young Adult Library
Services Association
www.ala.org/yalsa


ASI
asi.ucdavis.edu


SWEET WATER
FOUNDATION
There grows the neighborhood


ASHP·CML


EffectiveSC

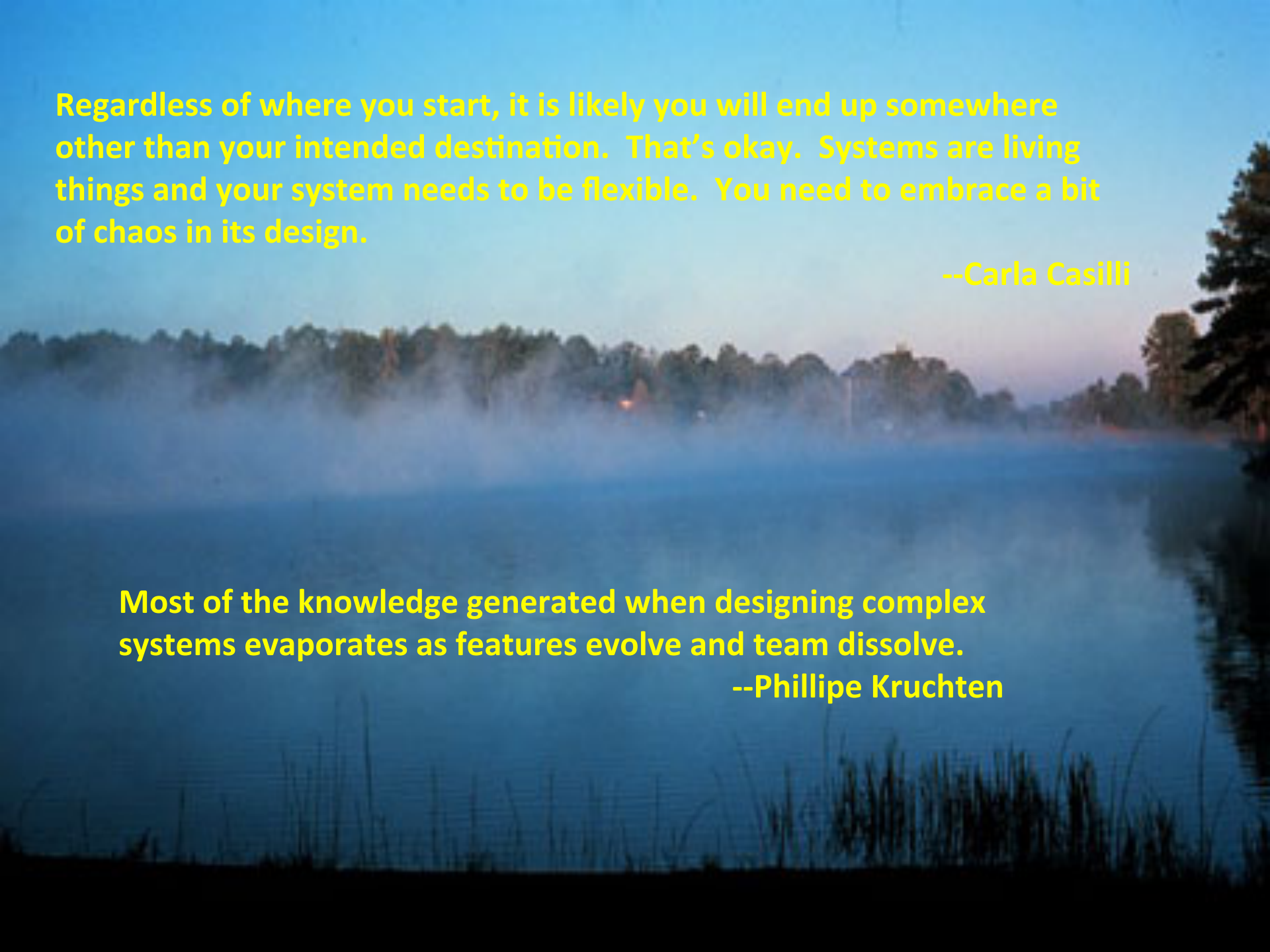

CS2N
computer science student network


DFA
DESIGN for AMERICA


COOPER-HEWITT
NATIONAL
DESIGN
WEEK


CENTER FOR
EDUCATIONAL TECHNOLOGIES


Smithsonian
National Museum of Natural History


Regardless of where you start, it is likely you will end up somewhere other than your intended destination. That's okay. Systems are living things and your system needs to be flexible. You need to embrace a bit of chaos in its design.
--Carla Casilli
Most of the knowledge generated when designing complex systems evaporates as features evolve and team dissolve.
--Phillipe Kruchten

Overview of Methods

- **Reviewed 30 proposals for intended practice**
- **2013 interviews identified enacted practices.**
  - **Sorted practices into design principles.**
- **Now linking principles to relevant research**
  - **Drafting detailed report.**
- **2014 interviews to identify formal practices**
  - **Practices that endure after funding expires**
- **Creating working examples and website to share and discuss**
- **Will write and publish reports and review papers.**

Categories of Badge *Functions*

- Recognizing Learning
  - *Skills, achievements, experiences, & practices*
  - *Individual, peer, social*

- Assessing Learning
  - *Summative, formative, transformative, & transcendent*

- Motivating Learning
  - *Intrinsic, extrinsic, & participatory*

- Studying Learning
  - Research *of, for,* & *with* digital badges

Evolution of Badge Design *Practices*

Intended Practices

- Ideas outlined in original proposal

Enacted Practices

- Intentions unfolding in world

Formal Practices

- Practices endure after funding ends

Emergence of Badge Design *Principles*

Draft Initial Principles

- Similar practices across different projects
- Aiming for 4-6 principles for each function

Formalize General Principles

- Exemplified by specific projects
- Highlights intersection of principle with context

Bookmark Research

- Find *relevant* research for each principle
- Encourages spread systematic inquiry

Principles for *Recognizing* Learning (Ordered by Prevalence)

1. Use badges to map learning trajectories. Most used badges to organize learning by determining levels of badges or offering meta-badges.

2. Align badges to standards. Many used national or international standards to increase external value.

3. Have experts issue badges. Experts increase credibility; influences the usefulness beyond the issuing community.

4. Seek external backing. Increases usefulness as name recognition is important to schools and employers.

5. Recognize diverse learning. Broad recognition helps legitimize what would otherwise only be implicitly noticed.

6. Use badges to externally communicate accomplishment Take advantage of unprecedented opportunity to present evidence and links to evidence of learning.

7. Make badges permanent. Provide permanent evidence that will be accessible forever.

8. Recognize educator learning. Badges have unique potential in this regard, often along side issuing them to learners.

9. Award formal academic credit for badges. While rare, a very consequential function of digital badges.

Principles for *Assessing* Learning (Ordered by Prevalence)

1. Use leveled badge systems. Most used sequences or structures to convey a progression or stages of learning.

2. Enhance validity with expert judgment. Many used human experts from the field or teachers, or use computer scoring.

3. Align assessment activities to standards: Create measurable learning objectives. Many state, national, or internal standards.

4. Use performance assessment. Many used open-ended and performance-based assessment methods.

5. Use e-portfolios. Some projects used e-portfolios that ranged in sophistication.

6. Use formative functions of assessment. Some made explicit efforts to provide formative feedback to directly advance learning following assessment.

7. Use mastery learning. Some projects' goals for learners involve mastering specific skills.

8. Use rubrics. Some projects create their own rubrics while others use rubrics created by schools, districts, states, or organizations.

9. Promote "hard" and "soft" skill sets. Some projects distinguished between more specific individual skills and more social practices.

10. Involve students at a granular level. A few projects have decided to involve their community in the design and assessment processes.

Sub-Principles for ASSESSING Learning

- Use Leveled Badge Systems
  - Competency levels (10)
  - Meta-badges (8)
  - Hierarchy of badges (3)
- Enhance Validity with Expert Judgment
  - Use AI Tutors (1)
  - Use computer scoring systems (2)
  - Use experts (9)
  - Use computers and experts (11)
  - Give experts badges (3)
- Use Performance Assessments (4)
- Involve Students in Learning Pathway Design (3)
- Use Mastery Learning
  - Judged by computers
  - Judged by Humans and computers
- Align to Standards
  - Internal (7)
  - National/State (6)
  - Common Core (8)
- Use e-Portfolios
  - Open to public ((2)
  - Local to community (5)
  - Foster discussion artifacts (5)
- Provide Formative Feedback
  - Peer feedback (4)
  - Expert feedback (1)
  - Peer & expert feedback (5)
- Recognize Educator Learning (7)
- Use Rubrics
  - Specific to artifact or assessment ((11)
  - Generic rubrics (2)
- Combine Hard/Soft and Collaborative/Individual (11)

Principles for *Motivating* Learning (Ordered Coherently)

Provide privileges. Learners receive privileges upon earning badges.

Recognize identities. Badges are awarded to recognize learners' identities within the program.

Engage with communities. Badges are awarded to learners who engage with their community.

Display badges to the public. Badges are displayed to the public either automatically or by choice.

Give value outside of badges. Badges are recognized by outside agencies as academic credit, or for the skills that the badges themselves represent.

Set goals. Help learners set goals and visualize their accomplishment.

Support collaboration. Some badges are awarded for group accomplishments or to individuals for having a role in group collaboration.

Foster Competition. Scarcity and point systems create competition.

Evolve new requirements for badges. Requirements for earning the same badge change.

Recognize different outcomes. Badges recognize different skill sets.

Principles for *Studying* Learning (Proposed Tentatively)

Using Conventional Evidence

Research OF badges: Summatively study impact of badges.

Research FOR badges: Formatively improve learning with badges.

Research FOR ecosystems: Systemically improve learning systems with badges.

Using Evidence from Badges

Research WITH & OF badges: Use evidence summatively to study impact of badges.

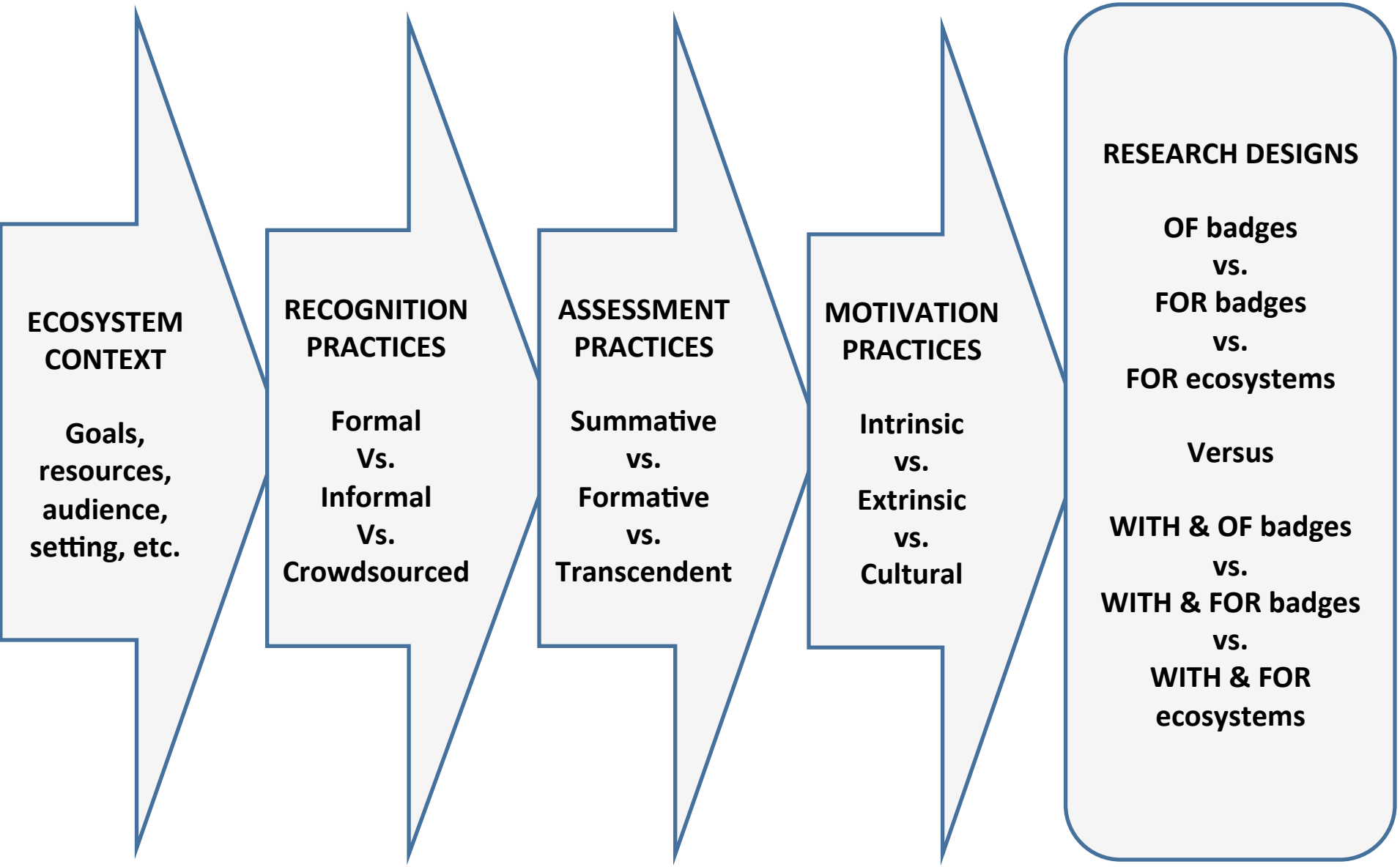
Research WITH & FOR badges: Use evidence formatively to improve learning.

Research WITH badges & FOR ecosystems: Use evidence systemically to improve ecosystem

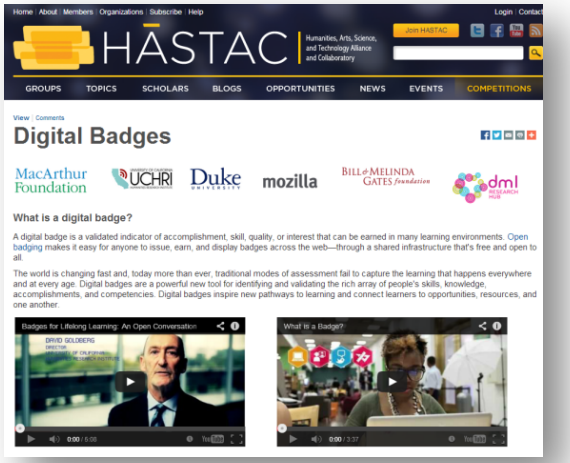
Badge Research Design Examples

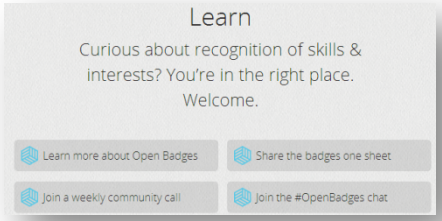
- Research OF badges
  - Katie Davis's PASA study
  - Jan Plass' study of gameplay with and without badges
  - Sam Abramovich's study of robotics
- Research FOR badges
  - James Diamond's WBA study
- Research FOR Ecosystems
  - Barry Joseph's Global Kids Summer Badge Pilot
- Research WITH & OF badges
  - Mapping NOAA to CCSS @ GoGoLabs by Lisa Dawley
- Research WITH & FOR badges
  - Mapping learning trajectories in Global Kids Summer Badge Pilot
- Research WITH & FOR ecosystems
  - Mapping pathways for different programs through DYN's trajectories in CSOL

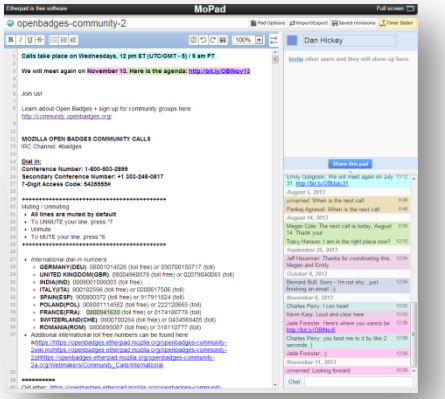
Badge Design & Research Challenges

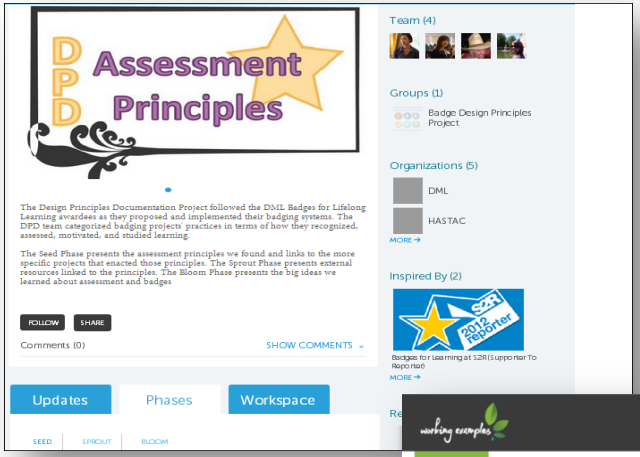


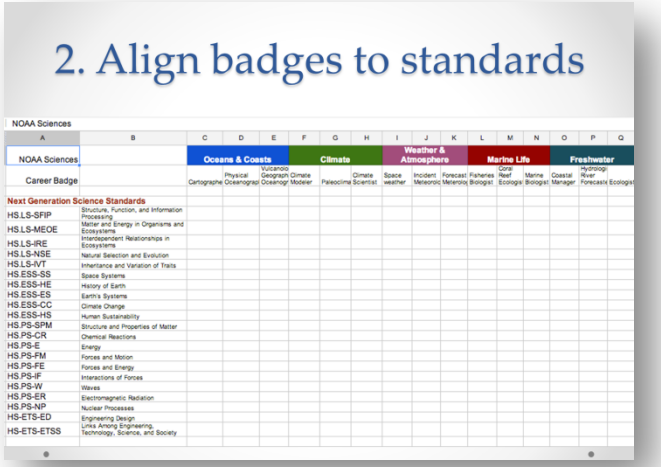
Building a Badges Knowledge Network











The Transcendent Potential of Badges

By Dan Hickey

In previous posts at HASTAC and Remediating Assessment I argued that we need to look beyond the intended *purposes* of digital badges and consider the actual *functions* of badges. This builds on what Jim Greeno has convinced me what happens when situative views of knowing and learning are applied to assessment. A later post elaborated on the summative, formative, and transformative functions of digital badges. That later post also promised a subsequent post on what we might call *transcendent* functions. I had written some about it in the original version but it was too long and I really could not wrap my head around it at the time. The upshot was something like this:

> ***Digital badges promise to allow some and force others to transcend existing paradigms of recognizing, assessing, motivating, and studying learning.***

Beyond this prediction I could not really add very much beyond referencing Cathy Davidson's suggestion that the 2012 competition might be the "tipping point" for the DML community.

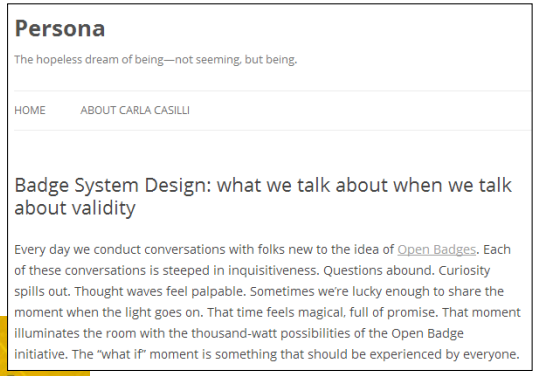
But in the last couple of week, Cathy Davidson, Bill Penuel, Michael Olneck and others have initiated a really great discussion of this issue on one of our project blog posts at HASTAC on studying learning with digital badges. These exchanges convinced me to return the notion of transcendent functions in light of the work over the subsequent year. Cathy's closing question on her initial comment really helped move my thinking forward:

> ***Is it possible that the chief importance of badges will be to push wholesale reform of existing credentialing systems? Or is the present system too much rooted in an antiquated view of disciplines, competencies, expertise, authority, credentialing, ability/disability, hierarchy and data to be as useful as badging potentially is for new ways of defining the talents needed in the world we live in now?***

- If badges transform credentialing…
  - Will recognition of learning be crowdsourced?
- If badges transform assessment…
  - Will credibility transcend validity?
- If badges transcend intrinsic vs. extrinsic motivation…
  - Will cultural models of motivation (finally) take hold?
- If badges transform research methods…
  - Will DBR transcend RCTs?

Credibility & Validity

- Mozilla's Carla Casilli suggested that that *credibility* might trump *validity*
  - But credibility is an "unsanctioned" aspect of validity
- Carla suggested B. J. Fogg's credibility taxonomy
  - **Presumed** credibility arises from "general assumptions in the mind of the perceiver"
  - **Surface** credibility arises from "simple inspection or initial firsthand experience"
  - **Reputed** credibility arises through "third party endorsements, reports, or referrals"
  - **Earned** credibility arises from "firsthand experience that extends over time"
- Alternative to existing notions of validity?
  - *Content*, *criteria*, and *construct*-related evidence in Popham et al.
  - *Content, substantive, structural, generalizability, external*, and *consequential* in Messick et al.

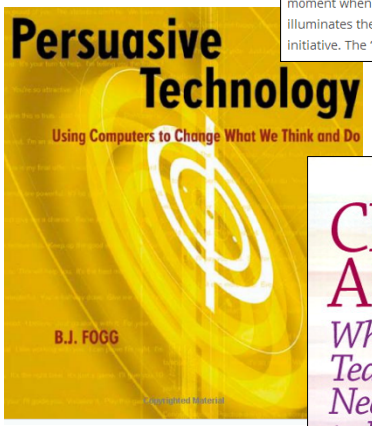

Persona

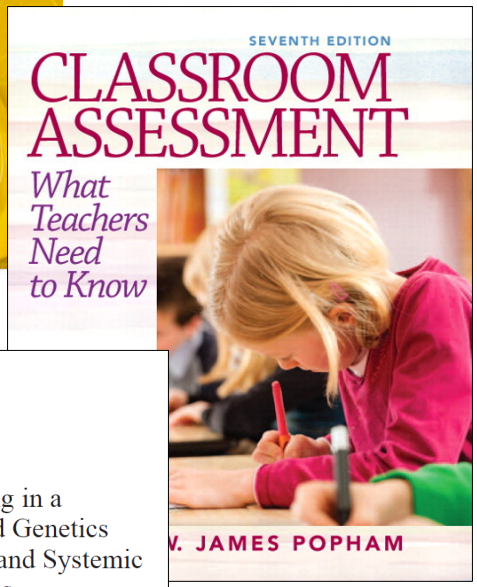
The hopeless dream of being—not seeming, but being.

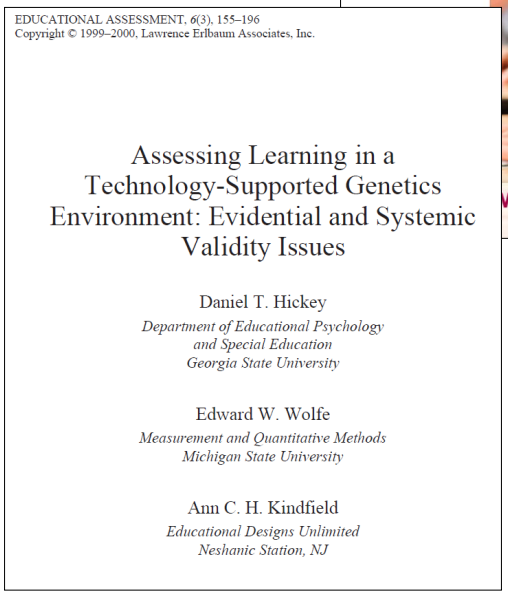
HOME ABOUT CARLA CASILLI

Badge System Design: what we talk about when we talk about validity

Every day we conduct conversations with folks new to the idea of Open Badges. Each of these conversations is steeped in inquisitiveness. Questions abound. Curiosity spills out. Thought waves feel palpable. Sometimes we're lucky enough to share the moment when the light goes on. That time feels magical, full of promise. That moment illuminates the room with the thousand-watt possibilities of the Open Badge initiative. The "what if" moment is something that should be experienced by everyone.






EDUCATIONAL ASSESSMENT, 6(3), 155–196
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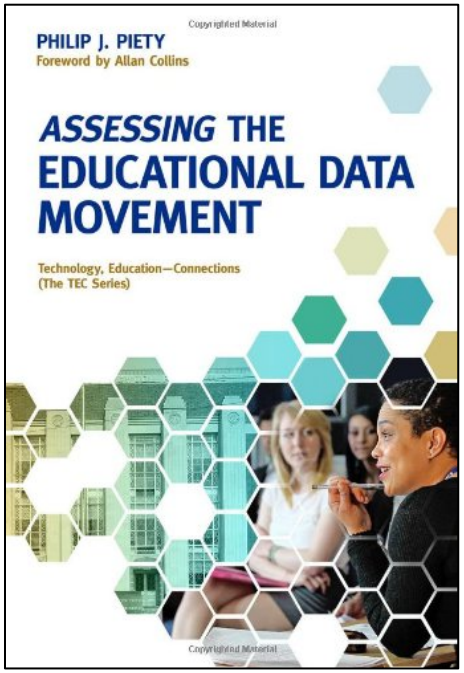
Assessing Learning in a Technology-Supported Genetics Environment: Evidential and Systemic Validity Issues

Daniel T. Hickey
Department of Educational Psychology and Special Education
Georgia State University

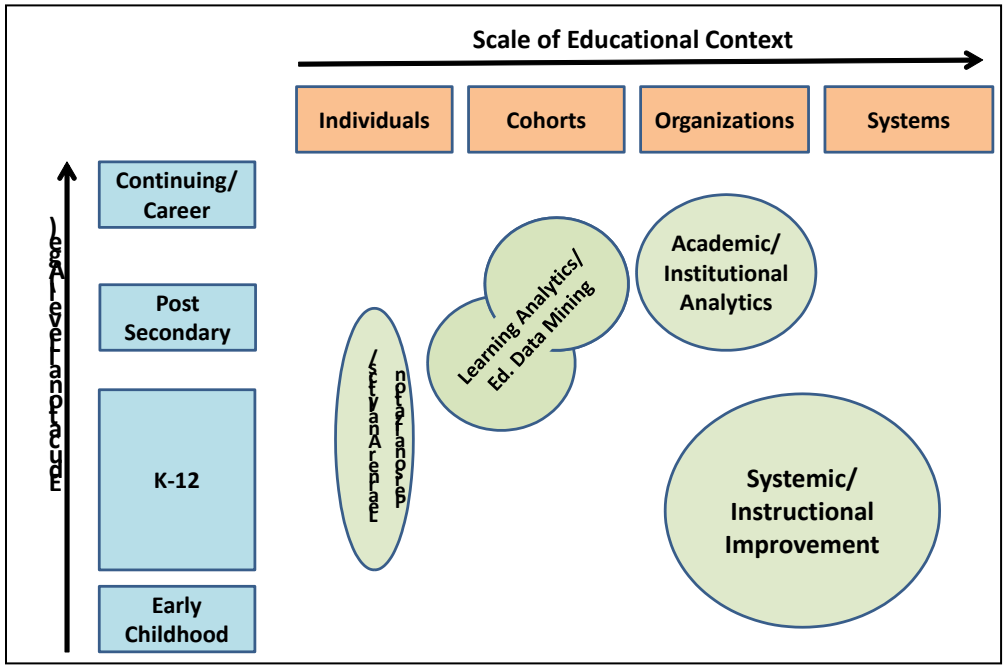
Edward W. Wolfe
Measurement and Quantitative Methods
Michigan State University

Ann C. H. Kindfield
Educational Designs Unlimited
Neshanic Station, NJ

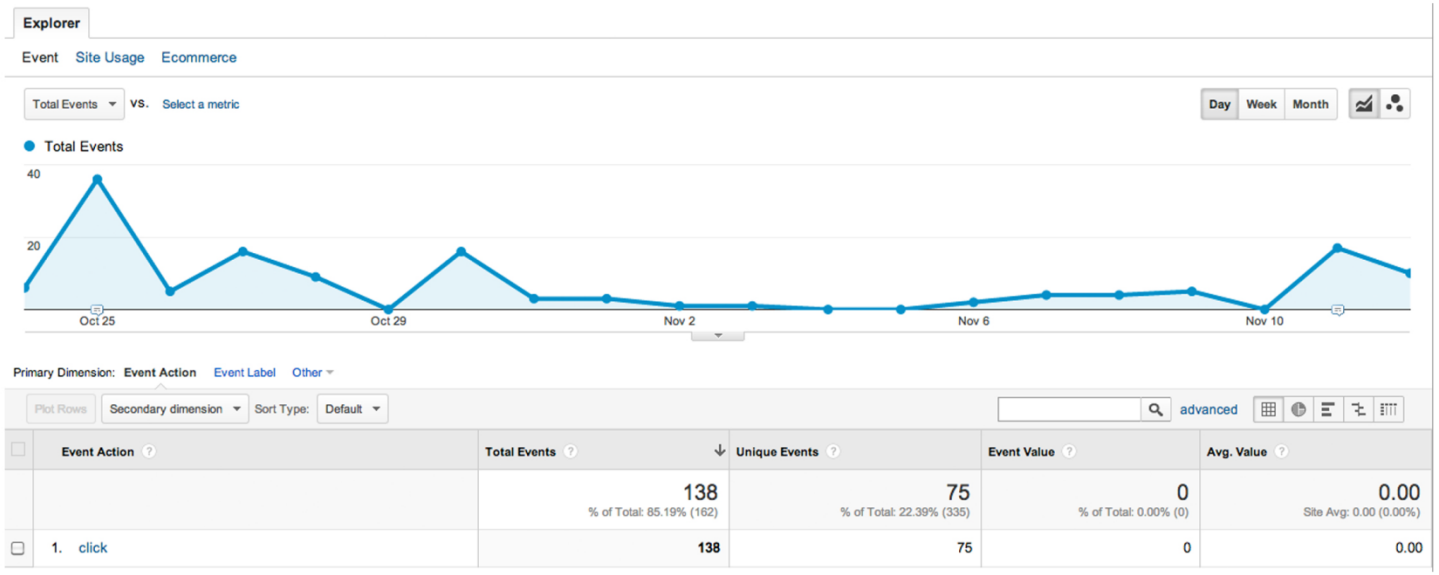


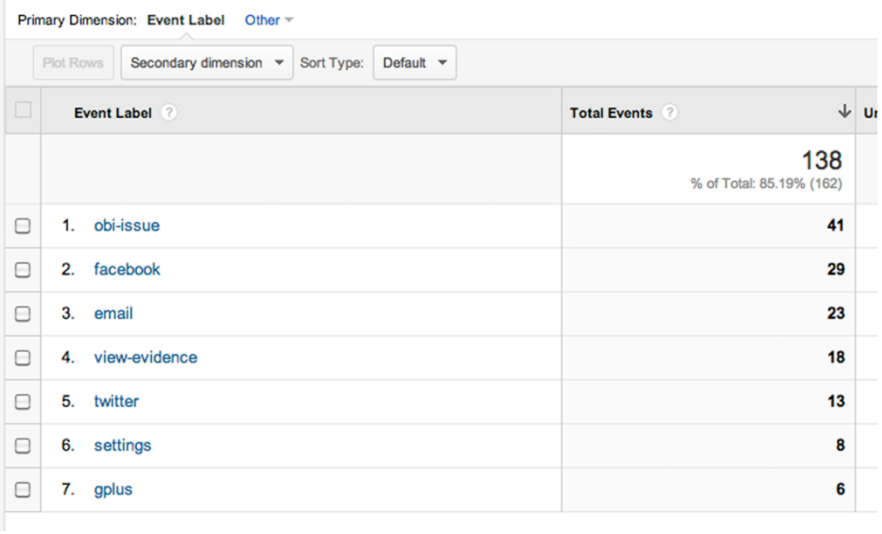
Educational Data Science Practices (Piety, Hickey, & Bishop, proposed 2014)

- Learn*ing* Analytics
  - Concerns events
- Learn*er* Analytics
  - Concerns learners
- Educational Data Mining
  - Concerns groups of learners, courses
  - Associated with AI tutors
- Institutional Research
  - Concerns institutions
  - Mostly in higher education
- Systemic Improvement
  - Concerns educational systems
  - Associated with K-12 & NCLB



Participant Interactions with Digital Badge Functions





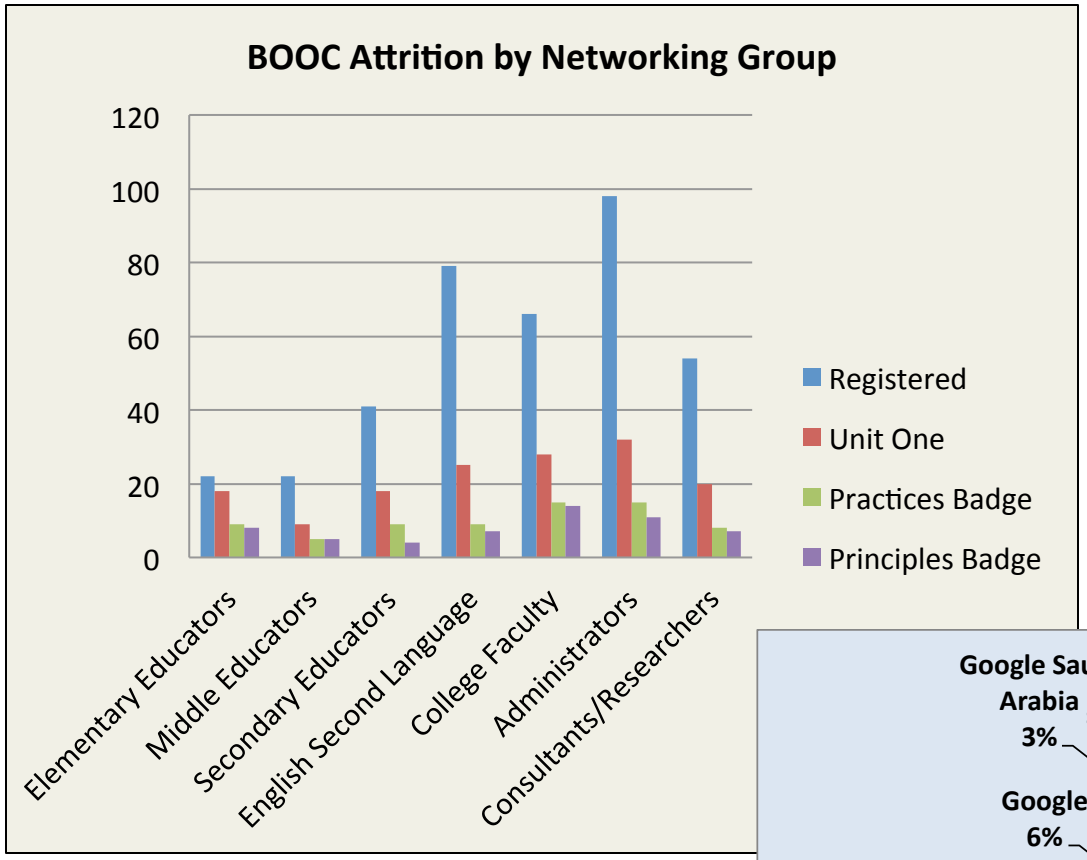
Social Acquisition Landing Pages

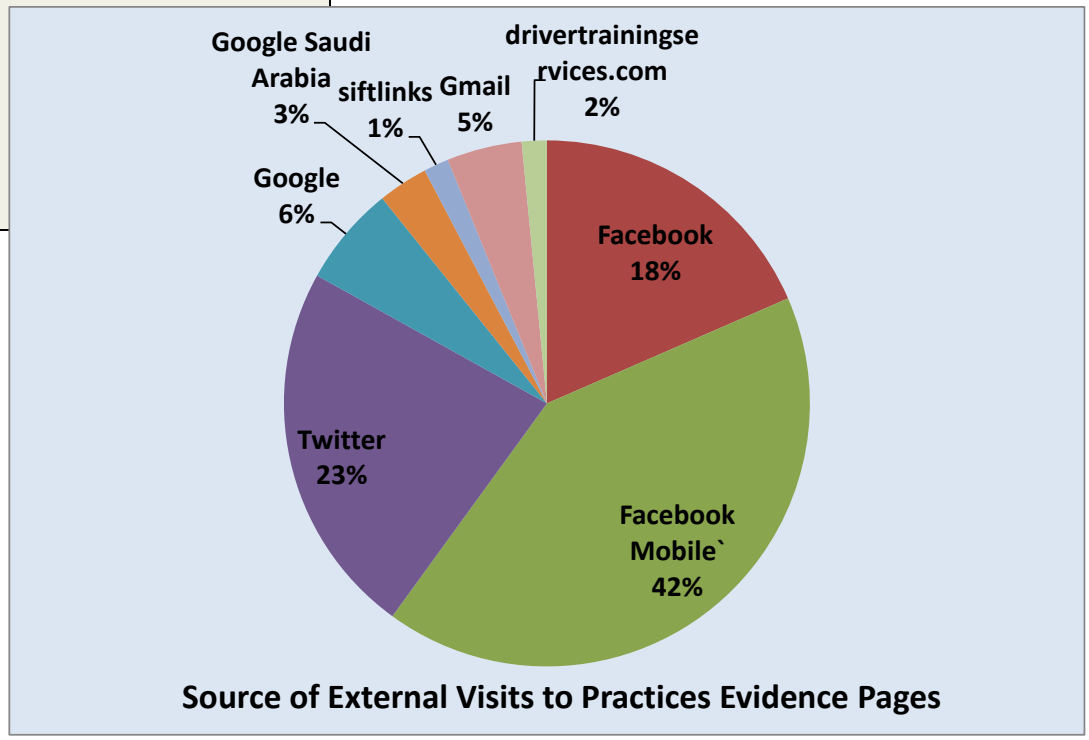
Primary Dimension: **Shared URL**

Advanced Filter ON | edit

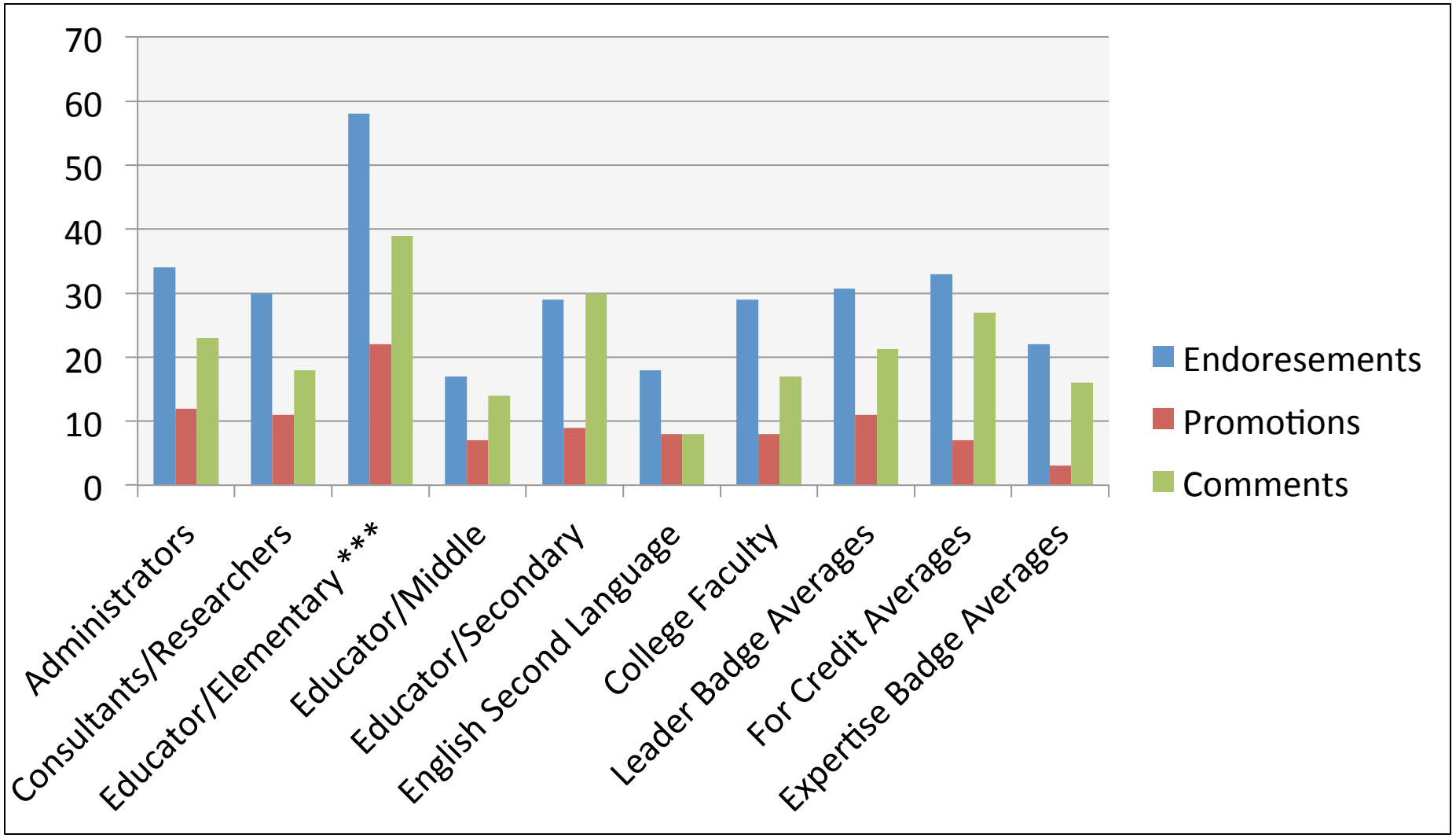
Shared URL	Visits ↓	Pageviews	Avg. Visit Duration	Data Hub Activities	Pages / Visit
1. booc-iu.appspot.com/badges/evidence?id=5302423010672640	15	21	00:01:11	0	1.40
2. booc-iu.appspot.com/badges/evidence?id=5771872868237312	14	33	00:02:24	0	2.36
3. booc-iu.appspot.com/badges/evidence?id=6619395275096064	13	31	00:00:53	0	2.38
4. booc-iu.appspot.com/badges/evidence?id=5443160499027968	11	25	00:02:29	0	2.27
5. booc-iu.appspot.com/badges/evidence?id=5955958119333888	9	16	00:00:14	0	1.78
6. booc-iu.appspot.com/badges/evidence?id=6084567022698496	7	12	00:00:10	0	1.71
7. booc-iu.appspot.com/badges/evidence?id=6308729553158144	7	16	00:02:33	0	2.29
8. booc-iu.appspot.com/badges/evidence?id=4830058212491264	6	9	00:00:27	0	1.50
9. booc-iu.appspot.com/badges/evidence?id=5936463262777344	4	12	00:01:39	0	3.00
10. booc-iu.appspot.com/badges/evidence?id=4667455448285184	3	3	00:00:00	0	1.00
11. booc-iu.appspot.com/badges/evidence?id=5803092045987840	3	3	00:00:00	0	1.00
12. booc-iu.appspot.com/badges/evidence?id=5843245292584960	3	4	00:00:04	0	1.33
13. booc-iu.appspot.com/badges/evidence?id=4934670730919936	2	3	00:00:25	0	1.50
14. booc-iu.appspot.com/badges/evidence?id=5593654274031616	2	4	00:02:25	0	2.00
15. booc-iu.appspot.com/badges/evidence?id=5914464842940416	2	2	00:00:00	0	1.00
16. booc-iu.appspot.com/badges/evidence?id=5951478468444160	1	1	00:00:00	0	1.00
17. booc-iu.appspot.com/badges/evidence?id=6452504925569024	1	7	00:32:10	0	7.00
18. booc-iu.appspot.com/badges/evidence?id=6586652591915008	1	1	00:00:00	0	1.00

Show rows: 50 Go to: 1 1 - 18 of 18

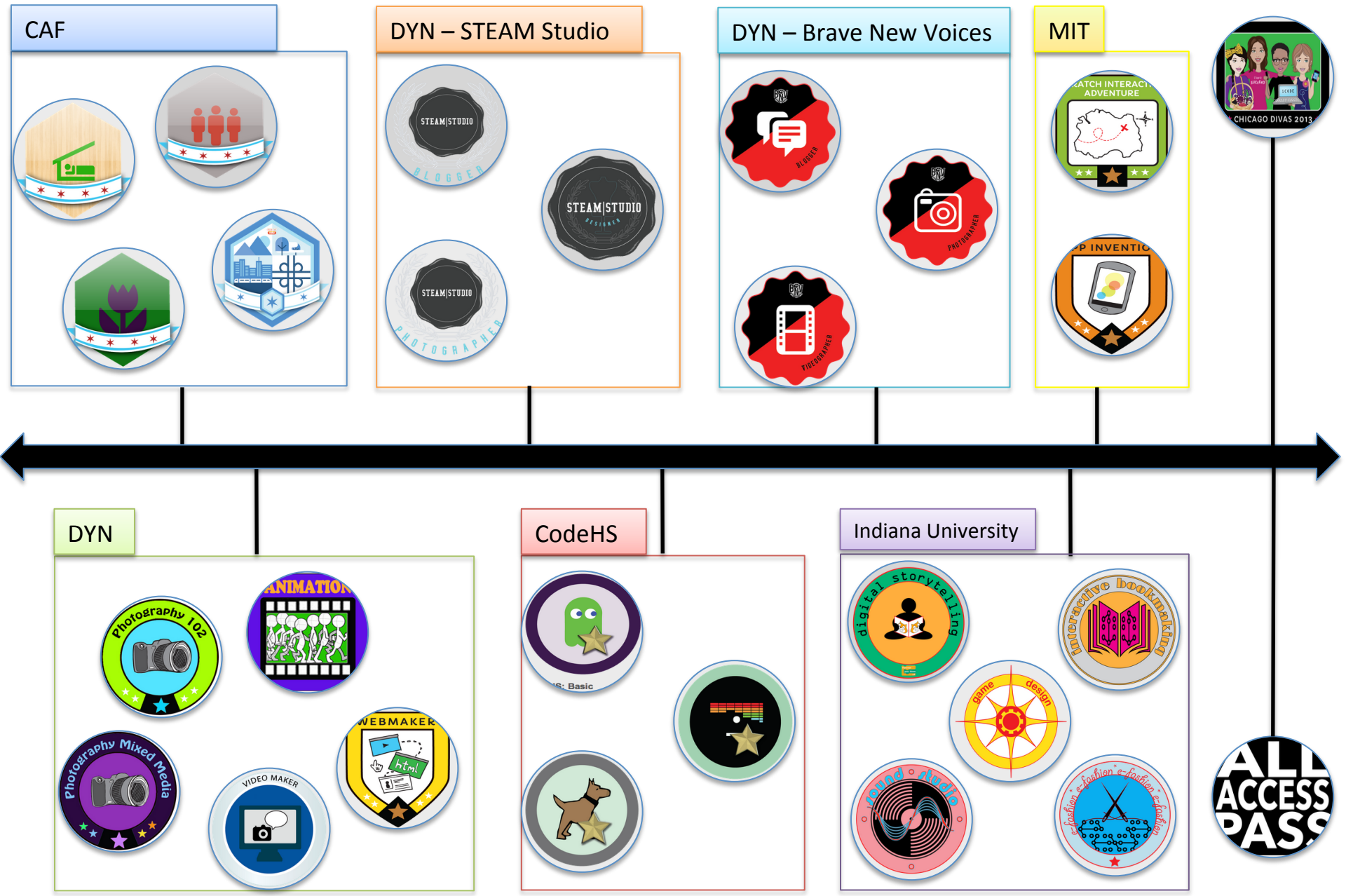

BOOC Attrition by Networking Group
120
100
80
60
40
20
0
Elementary Educators
Middle Educators
Secondary Educators
English Second Language
College Faculty
Administrators
Consultants/Researchers
Registered
Unit One
Practices Badge
Principles Badge


Google Saudi Arabia 3%
siftlinks 1%
Gmail 5%
drivertrainingservices.com 2%
Google 6%
Facebook 18%
Twitter 23%
Facebook Mobile` 42%
Source of External Visits to Practices Evidence Pages

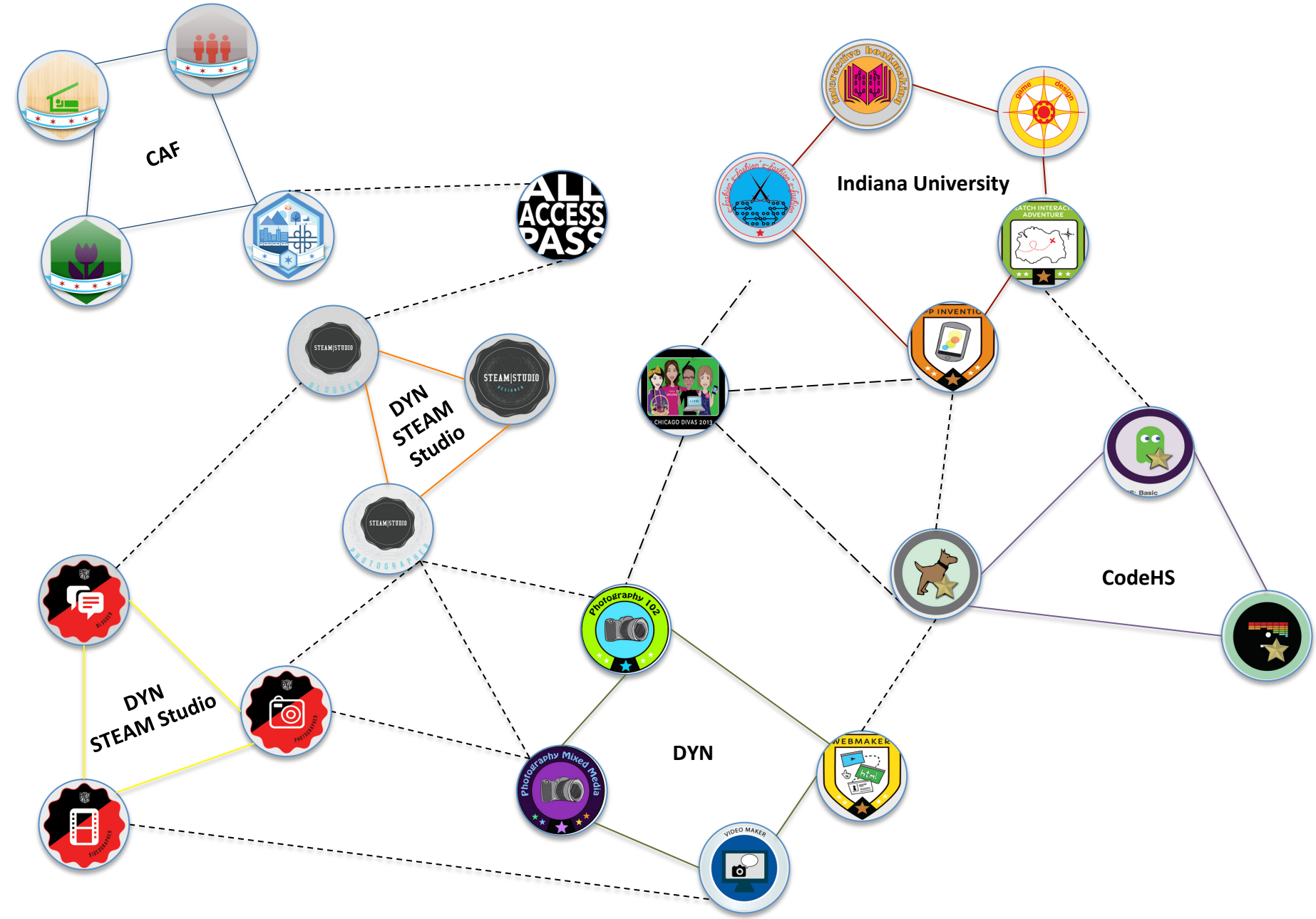
Relative Participation of Awardees, Enrollees, and Others



CSOL: An Ecosystem of Informal Learning



CSOL: An Ecosystem of Informal Learning



Scaling Up Participation
(Hickey, Kelly, & Shen, proposed 2014)

COURSE FEATURE	SMALL & INTUITIVE Closed Course with *Sakai* and *Sites*	BIG & SYSTEMATIC Big Open Course with *Course Builder*	MASSIVE & AUTOMATIC Massive Open Course with *Course Builder*
Define personalized context	Constructed in first assignment	Selected & constructed in registration & 1st assignment	Selected and constructed, with a live dashboard
Create and assign networking groups	Assigned manually via wiki homepage	Used a spreadsheet	Groups created algorithmically.
Rank relative relevance	Manually in wikifolio	Drag descriptions and write rationale	Drag descriptions and write rationale
Provide Feedback	Manually by instructor	With spreadsheet , teaching assistant, and notifications	Algorithmically, with tags
Peer Endorsement	Unique comment string	Button	Button with tracking
Peer Promotion	Unique comment string	Button & warrant field	Button & warrant field with tracking
Testing	Timed , open ended and multiple choice	Multiple choice pool	Multiple choice computer adaptive
Awarding Badges	Manually via plugin	Automated	Automatic

Recognizing Learning

Context: Integrate badge system into existing curriculum (integrated build).

- **Gain external recognition** from employers.
- **Gain formal endorsement** of badge system from sports and media partners.
- **Badge hierarchy**.
- **Badges are a permanent record** of achievement.
- Skills learned are **relevant to careers**.
- Some badges will be **peer-awarded**.

Assessing Learning

- **Leveled assessments** for leveled badges.
- **E-portfolios** collect resources for assessment.
- **Badges are validated by experts, a computer scoring system, and peers.**
- **Indirect standards alignment.** Participating teachers integrate S2R into their own curriculum.
- **Rubrics** are used to assess artifacts and portfolios.

Motivating Learning

- **Role recognition/community engagement.**

Students will be motivated to fill the roles of sports journalists.

- **Provide privileges.** S2R opens reporting opportunities to the most dedicated students.

- **Hierarchical use of badges.** Medals echoing those in the sports world are prestigious markers of achievement.

Studying Learning

Like most DML grantees, S2R did not intend to implement a formal program to study their badge system.

The need for data arose when talking to potential partners.

- Implementing 2-year research **OF** badges to see how students and employers interact with badges.
- S2R's platform allows research **WITH & FOR** badges, will lead to improvement of the badge system.

Menu

- Home
- Search
- Wiki
- File Galleries
- Admin

Nav

- Wiki Home

Initiative Analyses

Contents

Gates Mastery Projects

Initiative Name	Educational Setting [i]	Accreditation [ii]	Badge issuer	Earner Audience [iii]	Indicator/Standard Alignment [iv]	Consumer Audience
LevelUp	Classroom	Contextually Accredited		K-12	Common Core State Standards	
Pathways to Global Competence: A Badge System for Students	Uncategorized	Non-accredited		K-12	Common Core State Standards	
Youth Digital Filmmaker Badge System	Formal After-school Program	Contextually Accredited	On-site educators	9th and 10th grade students	Common Core State Standards-College Readiness Standards	Career and Secondary ELA teachers
Who Built America?: Badges for Teaching Disciplinary Literacy in History	Teacher Development	Formal			Career	Common Core State Standards

Hive Projects

		Accreditation	Badge	Earner	Indicator/Standard	Consumer

Principle: Use Performance Assessments in Relevant Contexts

Several projects are using performance assessment in their bading systems Unlike the other principles that have emerged, performance assessment has no subcategories because performance assessment in and of itself is a specific kind of practice. The following resources offer guidelines for implemeting performance assessment without comprimising learning or the assessment outcomes by "teaching to the test."

Pellegrino, J. W., Chudowsky, N., & Glaser, R. (Eds.). (2001). Knowing What Students Know: The Science and Design of Educational Assessment. National Academies Press. http://www.nap.edu/catalog.php?record_id=10019
Knowing What Students Know

- Many of the projects are using peformance assessments. This book is one of the most comprehensive reports on assessment and Chapter Three provides much of the justification for performance assessment approaches. The authors assert that "drawing out and working with existing understandings is important for learners of all ages" (p. 84), bringing to light the importance of employing prior knowledge in context to highlight what students know and understand. They go on to state that "social contexts for learning make the thinking of the learner apparent to teachers and other students so it can be examined, questioned, and built upon as part of constructive learning" (p. 89). This point is important in performance assessment because performance assessments attempt to elicit responses that show understanding in relevant but removed contexts from those in which the orgiinal content was learned.

Mehrens, W. A., Popham, W. J., & Ryan, J. M. (1998). How to prepare students for perforrnance assessments. Educational Measurement: Issues and Practice, 17(1), 18–22.

- Mehrens et al. provide six guidelines for using performance assessment, and suggest that instructors should be carefule in how they prepare students for such assessments lest they comprimise the assessment. Any project using performance assessment in their badging system should read the guidelines outlined in this short paper to ensure they are assessing what they mean to assess.

Popham, W. J. (2007). Classroom Assessment: What Teachers Need to Know (5th ed.). Allyn & Bacon.

- Popham's chapter on performance assessment is quite comprehensive and is a good resource for anyone using performance assessment. It lays out the merits and downsides of performance assessment, and gives very specific guidelnes on how to carry it out. I've used this chapter several times as I've written about performance assessment and

BOOC