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# **Mad Skills:**

## **Crowdsourcing with Open Badges**

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Elizabeth Lovero

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# Motivation

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*Education, then, beyond all other devices of human origin, is the great equalizer of the conditions of men, the balance-wheel of the social machinery.*

- **Horace Mann**

*Formal education will make you a living; self-education will make you a fortune.*

- **Jim Rohn**

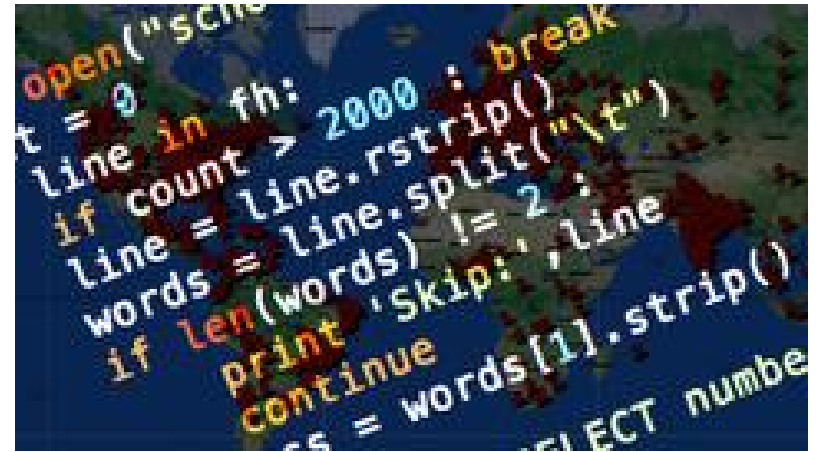
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# Demand for Free & Open Education

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## Massive Open Online Courses (MOOCs)

- Online courses aimed at unlimited participation and open access via the web
- Coursera, Udacity, EdX, CodeAcademy, and so on.



```
open("sch...
t = 0
line in fh:
if count > 2000 : break
line = line.rstrip()
words = line.split("\t")
if len(words) != 2 :
print 'skip:', line
continue
ss = words[1].strip()
SELECT numbe
```

# MOOCs to Jobs

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According to a 2014 Duke study, about three-quarters of organizations viewed MOOCs very positively or positively (73 percent) with respect to their potential influence in hiring decisions for job applicants who had taken job-related MOOC.

Georgetown's Center on Education and the Workforce predicts that the total number of STEM jobs will grow 26 percent between 2010 and 2020.

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# MOOCs to Jobs

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*“ We have thought about using MOOCs for recruitment because primarily we look for people with computer science degrees to succeed in roles here, but now with competition the way it is, it’s difficult to recruit experienced individuals. We are looking for creative ways to do things. This is a tight market. Any tactic that we could set to get our name to talented developers would be useful. ”*

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# MOOCs to Jobs

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Translate MOOC participation into jobs?

1. Incentivize completion
  2. Make it easier for employers to find skilled workers
  3. **Verify coursework and skills**
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# Open Badges: Level Up!

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The Mozilla Open Badges Infrastructure provides an open access platform for organizations to recognize learning and achievement by awarding digital badges as a certification of their seal of approval.



# Mozilla Open Badges

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BuzzMath



P2PU



Hive NYC



NOAA Planet Stewards



NASA



Intel & ISEF



4h/USDA



Mozilla.org



YMCA



BadgeStack



Open University / Cloudworks



Codery



Digital.me



workforce.io



# Crowdsourcing: Definition

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The practice of obtaining needed services, ideas, or content by soliciting contributions from a large group of people, and especially from an online community, rather than from traditional employees or suppliers.

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## Crowdfunding

Financial contributions from online investors, sponsors or donors to fund for-profit or non-profit initiatives or enterprises.



## Collective Knowledge

Development of knowledge assets or information resources from a distributed pool of contributors.



## Tools

Applications, platforms and tools that support collaboration, communication and sharing among distributed groups of people.



## Collective Creativity

Tapping of creative talent pools to design and develop original art, media or content.



## Cloud Labor

Leveraging of a distributed virtual labor pool, available on-demand to fulfill a range of tasks from simple to complex.



## Community Building

Development of communities through active engagement of individuals who share common passions, beliefs or interests.



## Civic Engagement

Collective actions that address issues of public concern.



## Open Innovation

Use of sources outside of the entity or group to generate, develop and implement ideas.

# Crowdsourcing

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## Amazon Mechanical Turk

- Crowdsourcing Internet marketplace
- Est. 2005
- Most well-known
- 500,000 workers from over 190 countries (Jan 2011)



# Crowdsourcing

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## Problems:

1. Concerns about labor
2. Cheating
3. Quality assurance



# Research Questions

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1. Can the Mozilla Open Badge System provide a viable tool for discerning worker skills in a crowdsourcing context?
  2. Do Turkers with Badges demonstrate a greater accuracy or higher quality response?
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# Approach

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Experimental badge test

1600 Tasks spread across two groups:

1. Badge Group: learned simple HTML image tagging with examples, trial and error and passed a 'quiz'
  2. Control Group: received instructions but no skills training or quiz
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Image:



File source: airplanesimage\_0728.jpg

Height: 276

Width: 350

Enter the HTML code below:

**HTML Tag**

Sample Task: HTML Tagging an airplane

# Limitations

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- Teaching to the test, no outside badges.
  - Preliminary analysis done for a single class only [Human Computation and Crowdsourcing]
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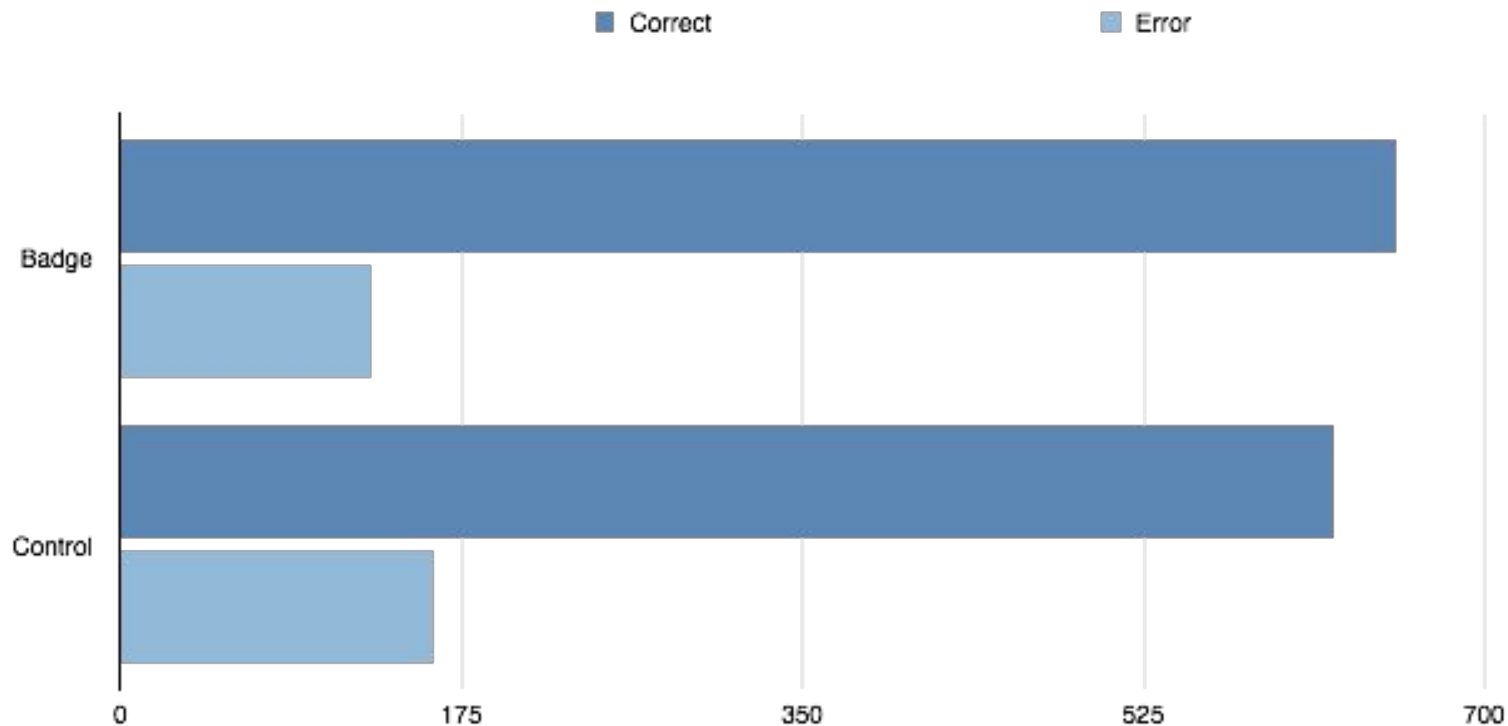


# Results

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Fisher's exact test: the two-tailed P value equals 0.0100, the association is considered statistically significant.

|         | Badge | Control |
|---------|-------|---------|
| Correct | 639   | 623     |
| Error   | 144   | 160     |
| Total   | 783   | 783     |



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Chart showing relative error rates of Badged and Control Groups

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# Next Steps

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Testing badge-holders from Coursera course  
*Programming for Everybody*

Survey of Turker Nation population

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# Final Goal

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Building out API from MTurk and Mozilla to display Badges as qualifications!

