

Using a Social Media Platform to Explore How Social Media Can Enhance Primary and Secondary Learning



<http://opinion.berkeley.edu/learning>

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Each day...

- 10 billion minutes spent on Facebook
- 400 million tweets
- 100,000 hours of videos uploaded to Youtube



Outline

How can Social Media Enhance Primary and Secondary Learning?

- Motivation
- The Collective Discovery Engine
- The Experiment and Progress
- Summary and Future Work

Related Work

1. A.J. Berinsky. The two faces of public opinion. *American Journal of Political Science*, pp. 1209-1230, 1999.
2. M. Chang, R. Kuo, G. Loeb, B. Olaniran. Special Issue: Technology-Enhanced Information Retrieval for Online Learning. 2012.
3. P. Dahlgren. The Internet, public spheres, and political communication: Dispersion and deliberation. *Political Communication*, 22(2):147-162, 2005.
4. L. Freeman. Visualizing Social Networks. *Journal of Social Structure*, 1(1): 4, 2000.
5. J.S. Fishkin and R.C. Luskin. Experimenting with a democratic ideal: Deliberative Deliberative polling and public opinion. *Acta Politica*, 40(3): 284-298, 2005.
6. K. Squire, L. Giovanetto, B. Devane and S. Durga. From users to designers: Building a self-organizing game-based learning environment. *TechTrends*. 34-42. 2005 *Foundations and Trends in Information Retrieval*, 2(1-2):1-135, 2008.
7. D. Wiley, E. Edwards. *Online Self-Organizing Social Systems*. Quarterly Review of Distance Education. 2002
8. MMS Education, 2012 Survey of K-12 Educators on Social Networking, Online Communities, and Web 2.0 Tools. 2012.

Social World of Learning

Social Scientific Understanding of Learning

- **Activity Theory , Social Learning, and Constructivism (Vygotsky, Engeström)**
- **Constructionism (Papert, Harel)**
- **Situated Learning (Lave & Wenger)**
- **Practice (Bourdieu, Giddens, Ortner, Lave)**
- **Habitus (Bourdieu)**

**Everyday Life:
Ethnography**

**Virtual World:
Collective
Discovery Engine**

**The
Participant**



Massive Open Online Courses



Open Teaching Initiatives



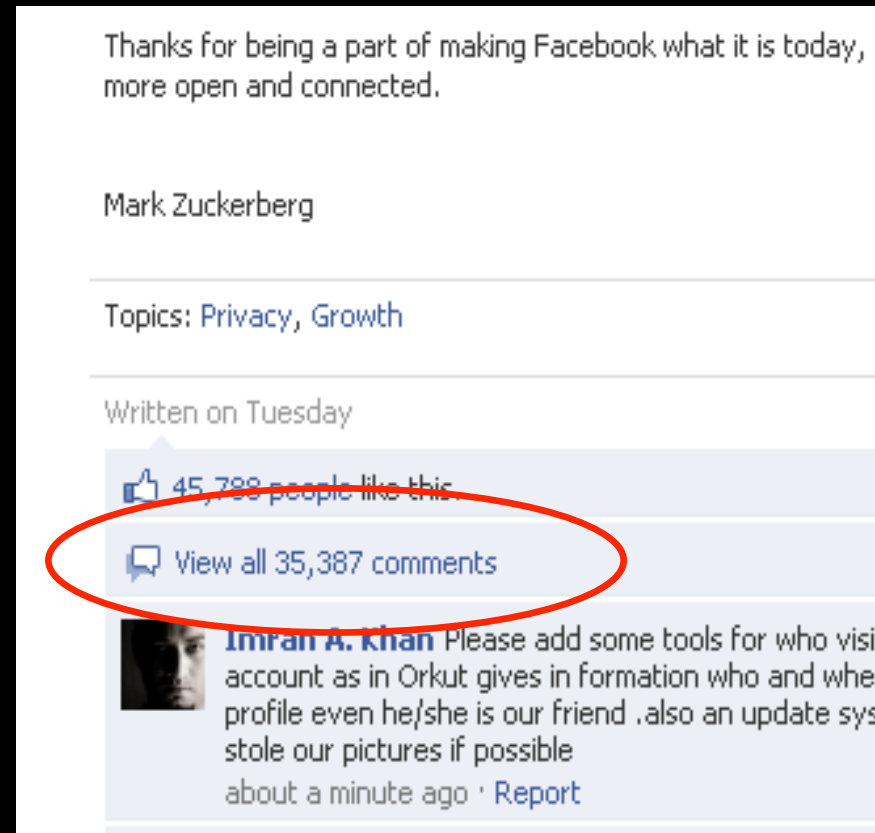
Social Media:

Benefit:

- **Quantity**

Problem:

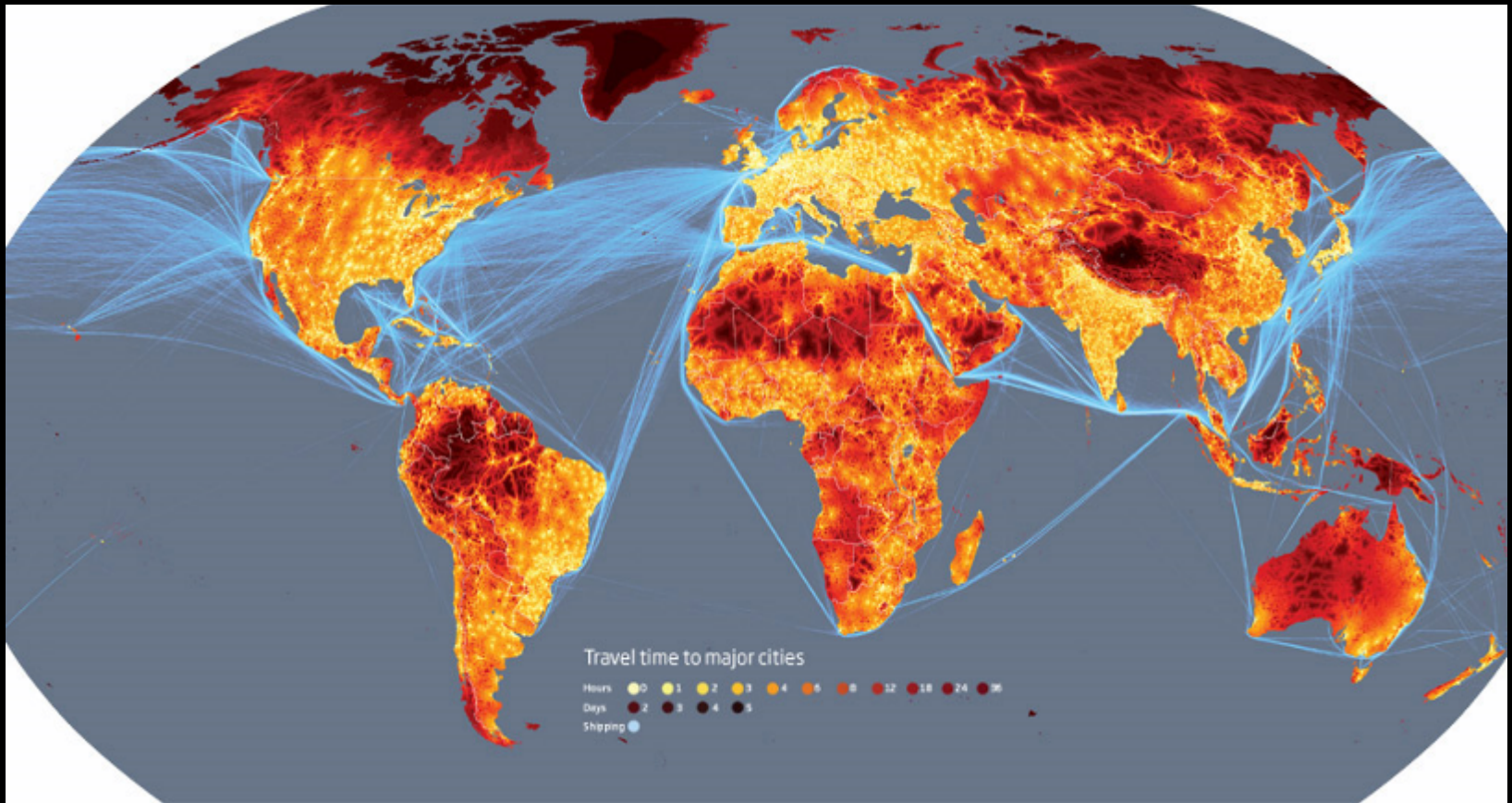
- **Quantity**



Existing Social Media tools are:

- Binary (friend/not friend, thumbs up/down)
- Linear (lists of comments/tweets)

Visualization



Continuous Ratings

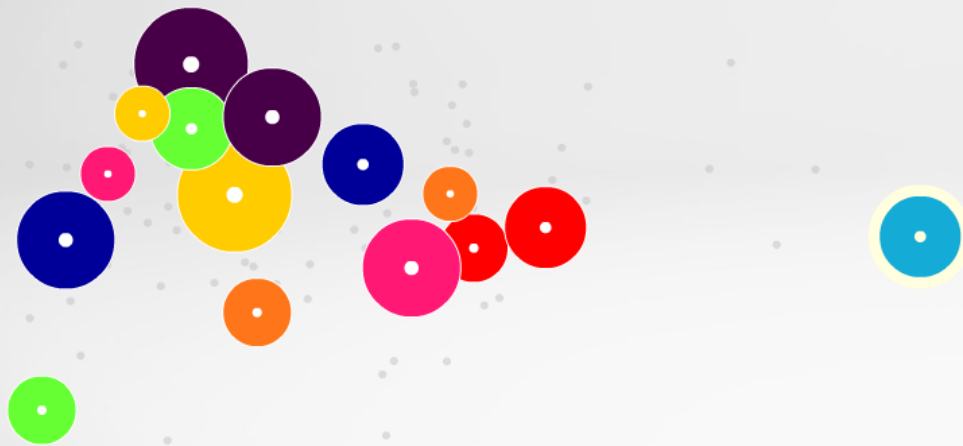


Visual Analog Scale

The Collective Discovery Engine

How can social media be used to benefit primary and secondary learning?

[FOUND A BUG?](#) | [ABOUT](#) | [SIGN OUT](#)



SCORE: 282

[My Comment](#) [My Stats](#)

MY STATISTICS

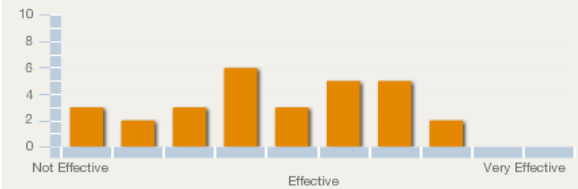
SCORE: 282 Points

IDEA RATED BY: 29 Participants



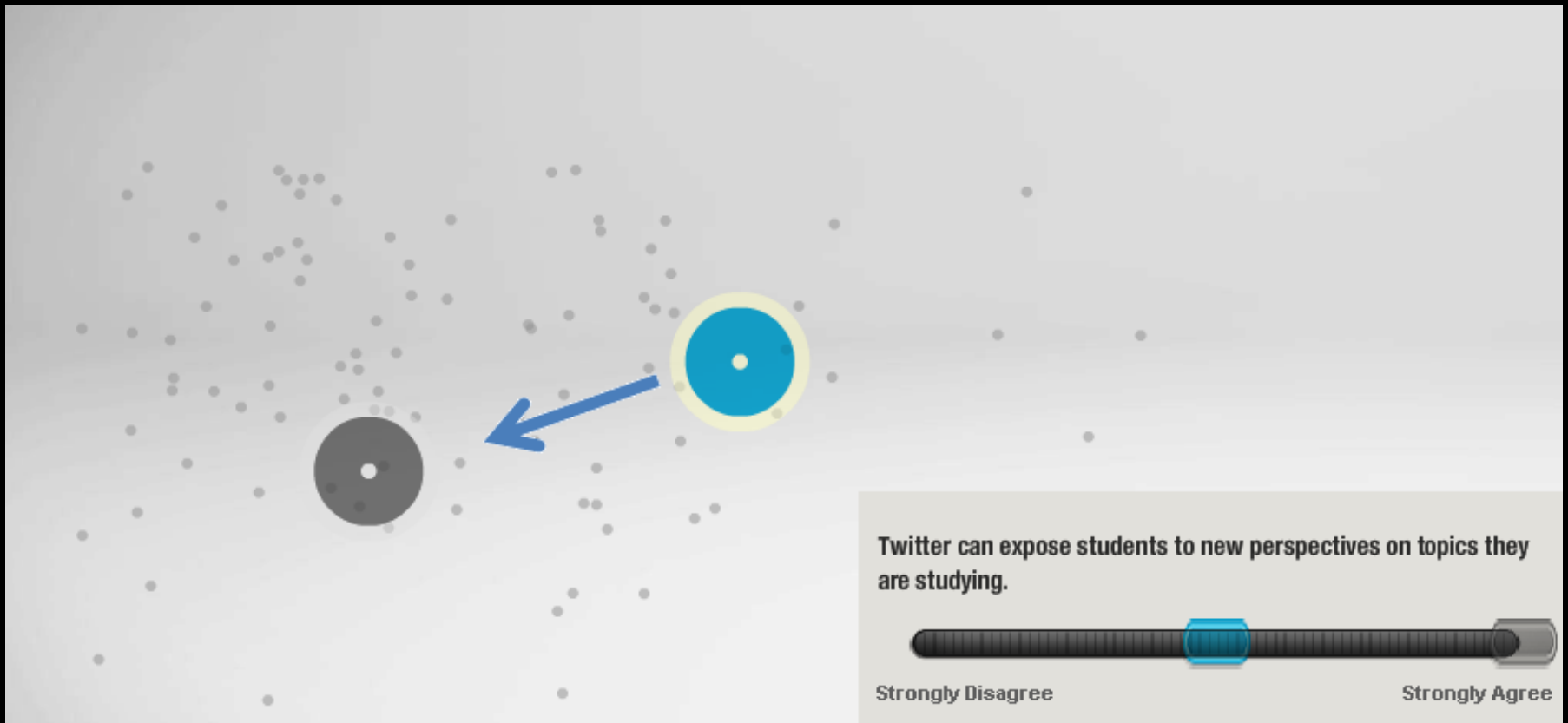
[Tweet](#) [Share](#)

Ratings Received



Step 1

Enter opinions on the profile statements and create a *bloom*.



Step 2

Contribute to the discussion.

How can social media be used to benefit primary and secondary learning?

FOUND A BUG? | ABOUT | SIGN OUT

Now enter your own idea (to fill your bloom)!

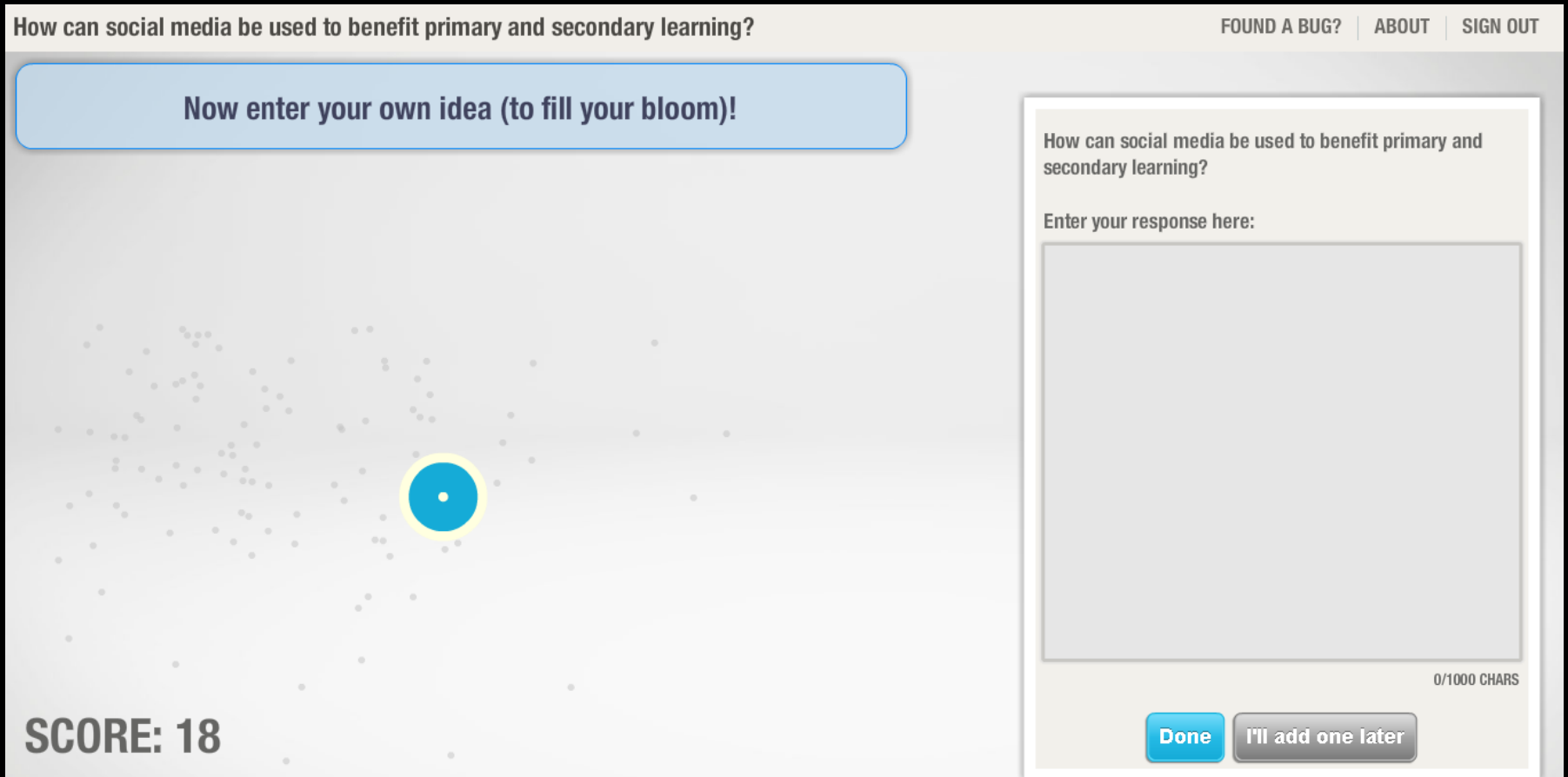
How can social media be used to benefit primary and secondary learning?

Enter your response here:

0/1000 CHARS

Done I'll add one later

SCORE: 18



Step 3

Read and evaluate the ideas of others.

DOVIZU (X)

1. Instant response: collaboration required face-to-face communication. Immediate responses are crucial to an effective group discussion and learning, which also puts group studying in an ineffective way in a sense, as students don't always have the opportunity to travel and join other brilliant minds. Social media is based on the Internet, on which a collaboration can effectively run regardless of distance and location.

2. Unprecedented outreach: the problem with traditional learning is that one is almost always trapped in the limited living environment and within the resources one's

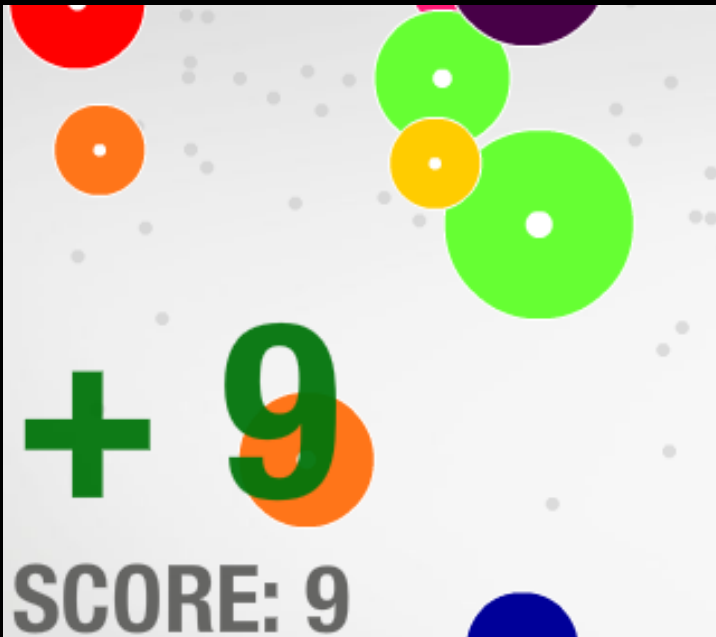
How innovative is this idea?

Not innovative Very innovative

How effective will this idea be?

Not Effective Very Effective

Gameplay



How can social media be used to benefit primary and secondary learning?

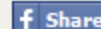
Leaderboard

1. SANJAYKRISHNAN 1,006	6. ERICADRAY HARTMAN 858
2. LUKASVERMEER 989	7. KUP1 854
3. HASSAANAAMIR 970	8. DXR4911 821
4. HRHEINGOLD 917	9. JAMES 814
5. OZGE 873	10. TONYA 810

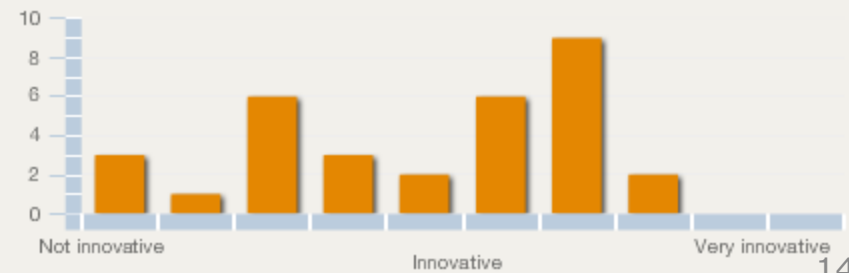
MY STATISTICS

SCORE: 814 Points

IDEA RATED BY: 32 Participants



Ratings Received



Outline

How can Social Media Enhance Primary and Secondary Learning?

- Motivation
- System Description
- The Experiment and Progress
- Summary and Future Work

Discussion Topic

How can Social Media be Used to Enhance Primary and Secondary Learning?

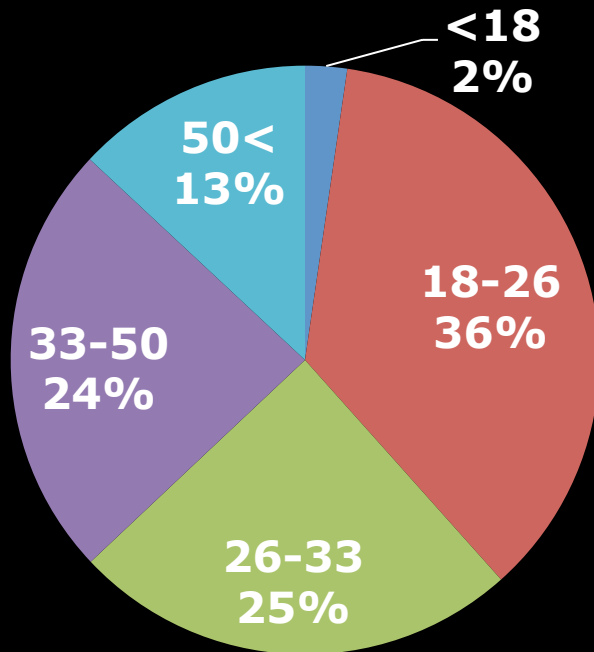
1. How effective will this idea be?
2. How innovative is this idea?



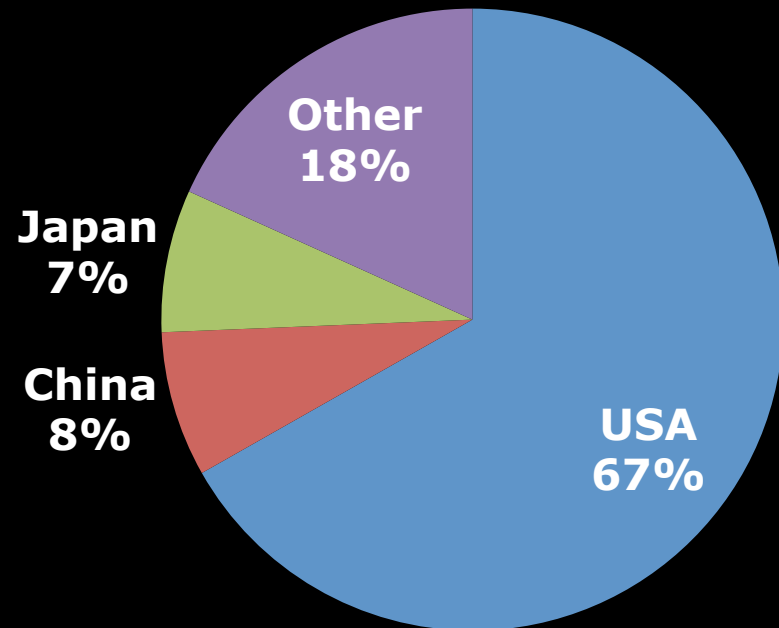
Participation

- 155 participants, 118 ideas, 751 evaluation pairs

Age



Location



Profile Statements

- 8 statements
- Examples
 - Twitter can expose students to new perspectives on topics they are studying.

Strongly Disagree ←————→ **Strongly Agree**

- A degree from an on-line school like Khan Academy is equivalent to a high-school diploma.

Strongly Disagree ←————→ **Strongly Agree**

- Nothing can replace a pencil and paper for learning.

Strongly Disagree ←————→ **Strongly Agree**

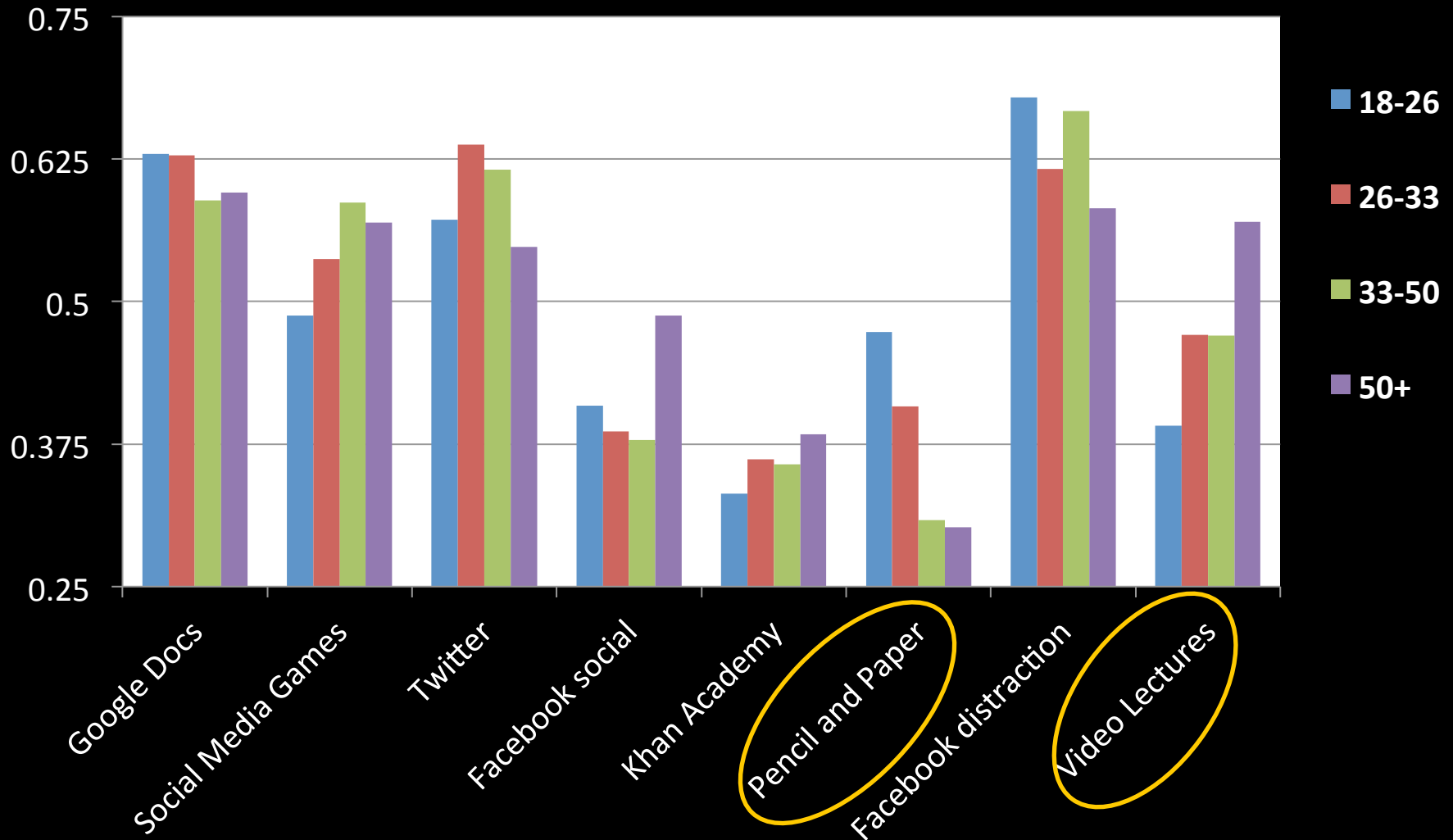
- Video lectures are better than traditional lectures as they free up class time for group discussions.

Strongly Disagree ←————→ **Strongly Agree**

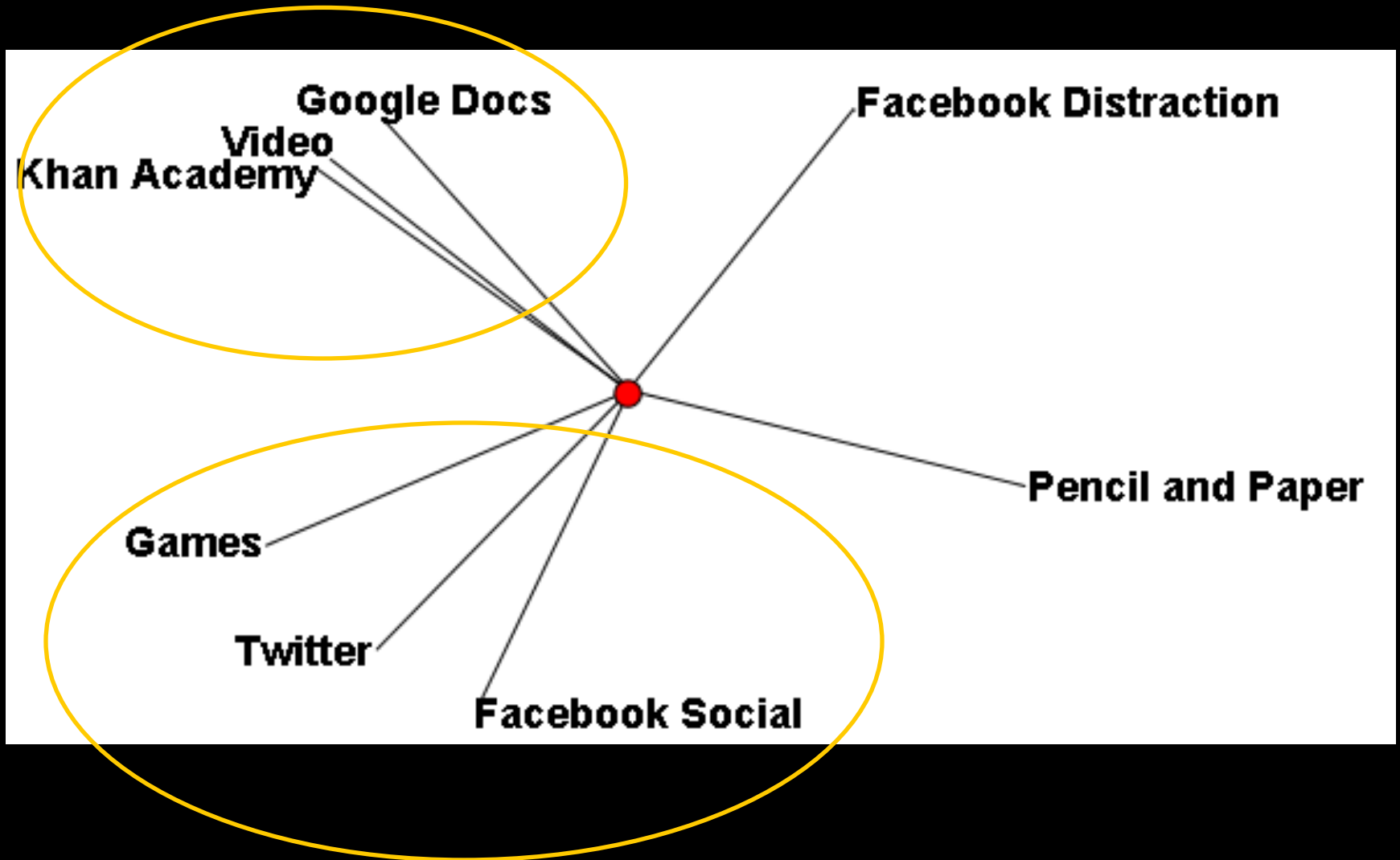
Profile Statements



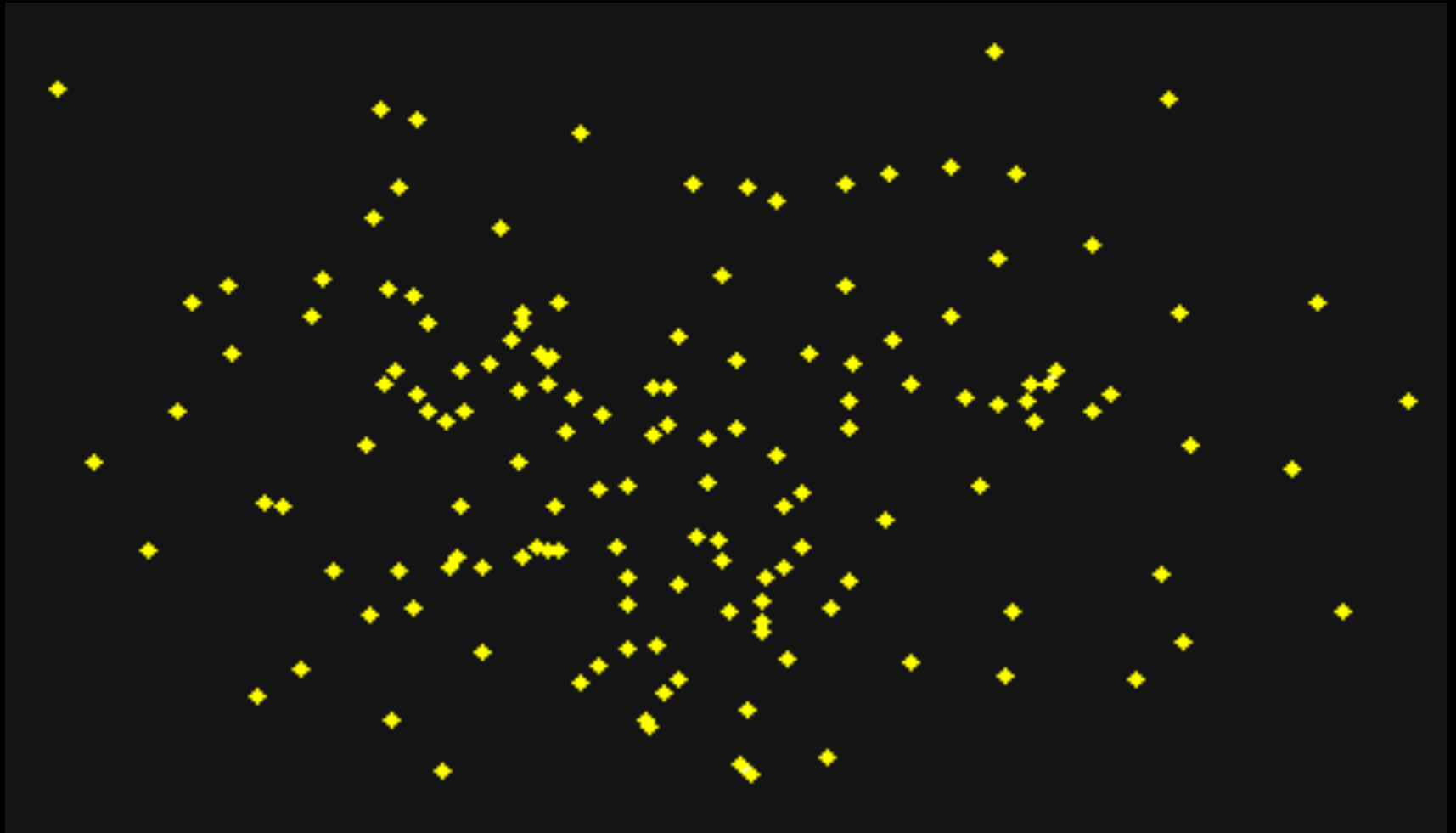
Demographics and Profile Statements



Profile Correlations



Diversity of Opinions



PCA visualization of all participants

Top Rated Ideas

1. *Foreign Language Education*

“...learning of a new language will be fun if students can practice it with native speakers who live in other parts of the world through social media...”



Top Rated Ideas



2. *Grading Group Projects*

“...Collaborative tools like Google Docs can reveal the history of a document to reveal who has contributed to a document, and in what ways...”

Top Rated Ideas

3. *Teacher Collaboration*

“Sharing tools and techniques to improve learning...generating a database from which to gain inspiration and collaboration for lesson plans, field trips, engagement, etc. ”



Top Rated Ideas

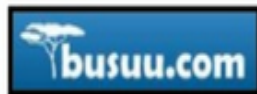
4. Diversity

“In the United States, neighbourhoods are not always very diverse...exposure to different people and perspectives will benefit students.”



Online Language Learning Communities

- [Livemocha](#) – World's Largest Language Learning Community
- [italki](#) – Language Learning Community & Marketplace
- [busuu.com](#) – Your Language Learning Community
- [My Language Exchange](#) – Find a native speaking partner!
- [Dave's ESL Café](#) – The Internet's Meeting place for ESL & EFL
- [LingQ](#) – Study online 24/7 and meet people from around the world!
- [hello-hello](#) – Interactive online language course with a community



Steve Sorden, "Emerging Trends in Foreign Language Teaching with ICT," 2012 (CESL, Univ. of Arizona)

www.OpenColleges.edu.au Presents:

LEARNING ANALYTICS 101

▬▬▬ Leveraging Education Data ▬▬▬

When you hear “analytics,” you might think of webmasters tracking visits to their site (*whether it's e-commerce, a personal blog or otherwise*). But learning analytics combines this sort of data analysis with student interaction in online education tools, aiming to create a more integrated and customized learning experience. It uses intelligent data, student performance and analysis models to find out how students learn and improve on their experience. Find out more about this educational revolution.

What can it do?



Predict future student performance
(based on past patterns of learning
across diverse student bodies)



Intervene when students are struggling
to provide unique feedback tailored
to their answers



Personalize the learning process for
each and every student, playing to their
strengths and encouraging improvement



Adapt teaching and learning styles via
socialization, pedagogy and technology

What can it be used for?



Detecting performance difficulties



Frustrated language
(i.e. in message boards)



Lower than average time spent on site
Long time between logins
Inattention vs. lack of understanding



Could even distinguish guessing vs.
knowing multiple choice answers

Professional Development



Teachers ready for ICT integration?

Skills

- Started with ICT skills by vendors
- ICT integration into lessons by MOE
 - In 3 phases – started with core training & school-based
 - Shifted to customised programmes

Beliefs

- Value of ICT
 - Success stories
 - Sharing (at conferences, etc.)



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Ministry of Education, Singapore, 2007

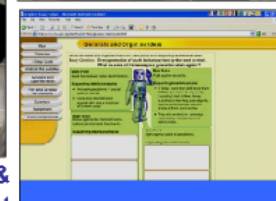
Implementation

ICT-Enabled Learning Environment



Professional Development

Curriculum, Instruction & Assessment



Digital Content

Dimensions



Research & Development



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Our Models 



New Options Desk

Featured



Vaerie Jarrett, White House Senior Advisor, Talks Summer Jobs

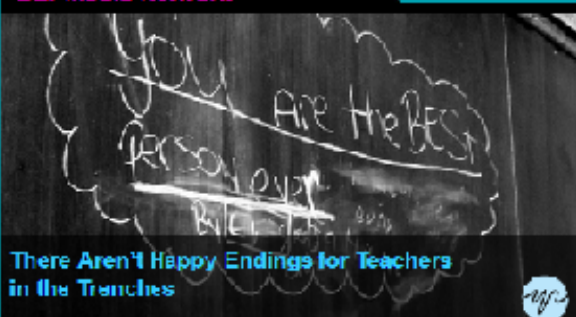


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Our Media Network



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2
3

There Aren't Happy Endings for Teachers in the Trenches



Outline

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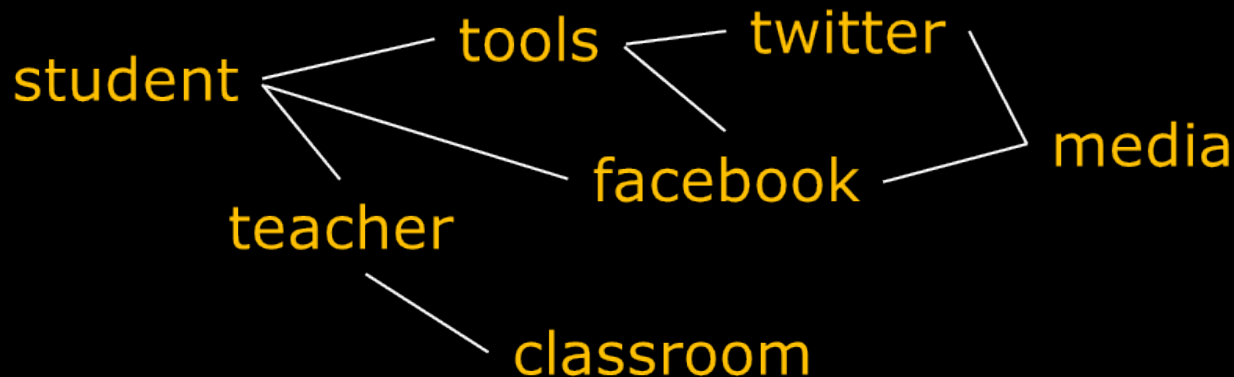
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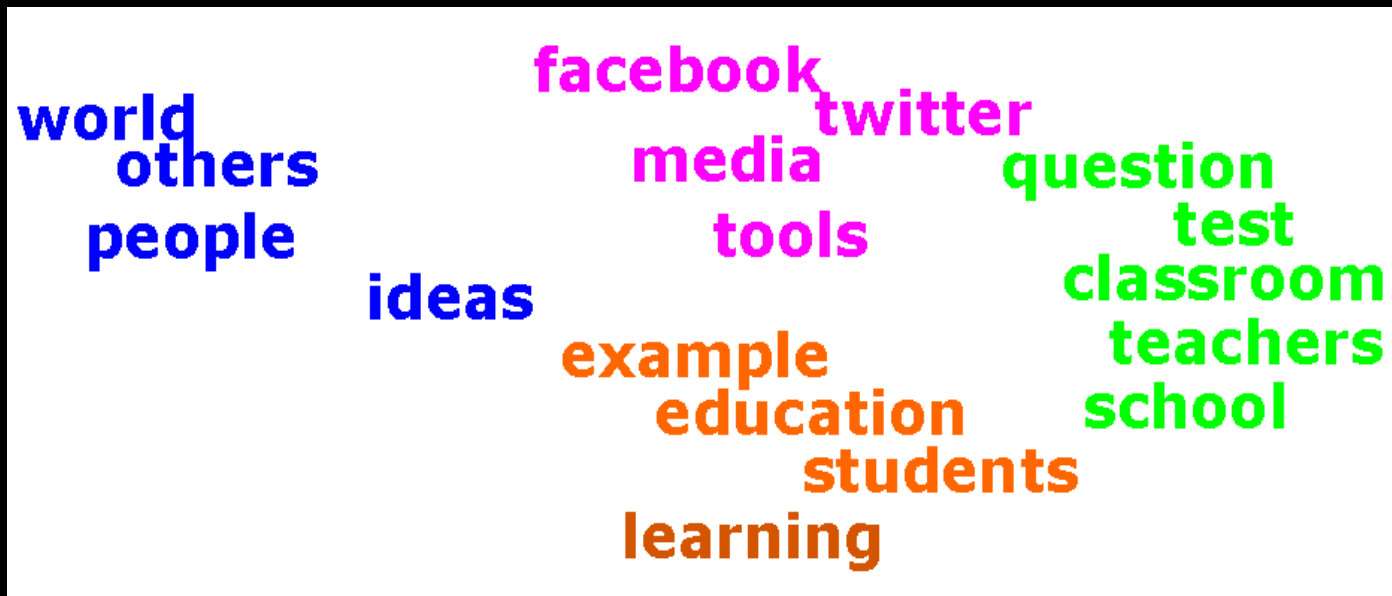
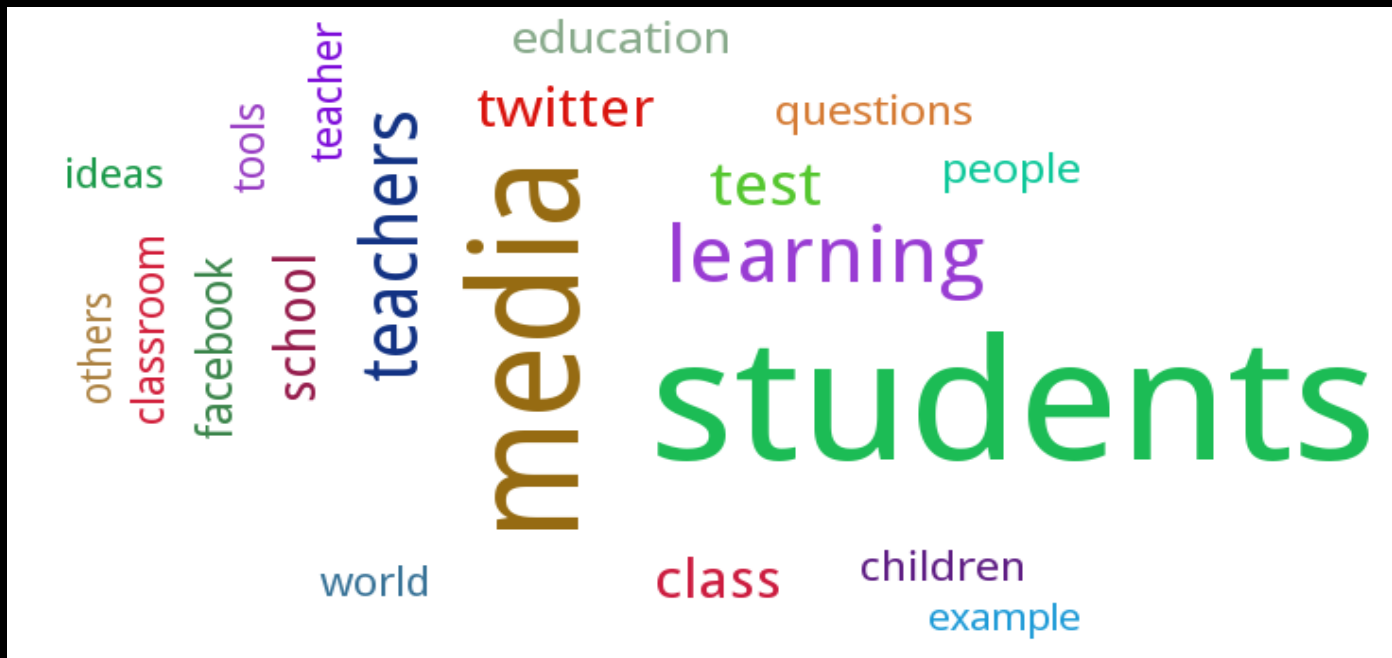
Summary

- The Collective Discovery Engine is an interactive visual tool to generate ideas around a topic of interest.
- Participants had diverse opinions on Social Media and Learning topics.
- Results suggest that our spatial reputation model and 2D continuous slider approach and is effective at discovering insight.
- Project is on-going and we invite you to participate:
 - <http://opinion.berkeley.edu/learning/>

Future Work

- Can we use the space to convey semantic meaning?
- Distributed Spectral Dimensionality Reduction.



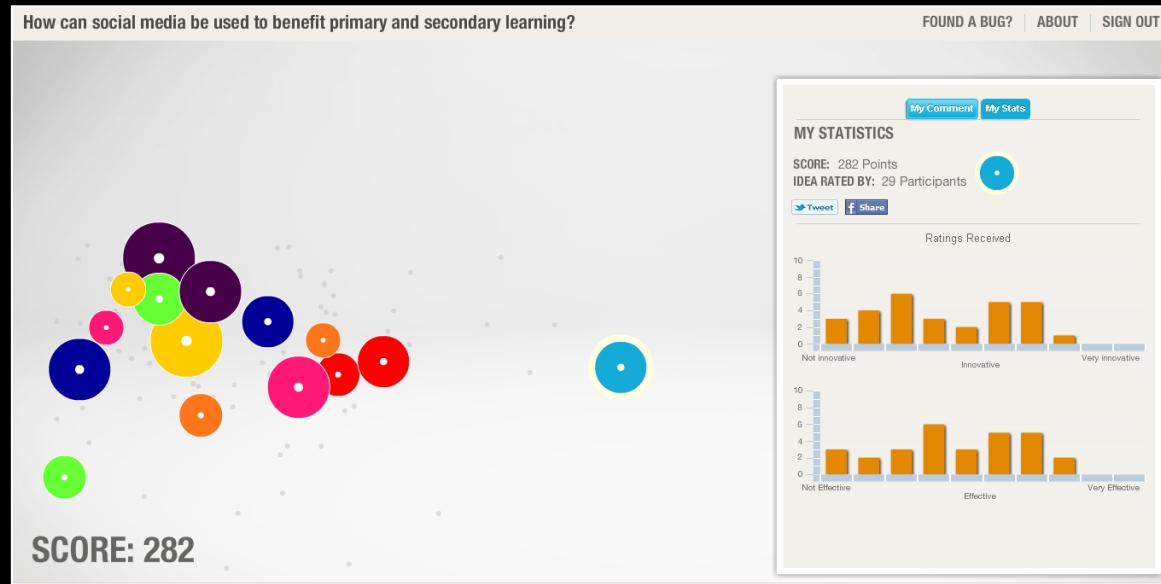


Future Work

- Building a multi-lingual interface for grassroots engagement in developing economies.



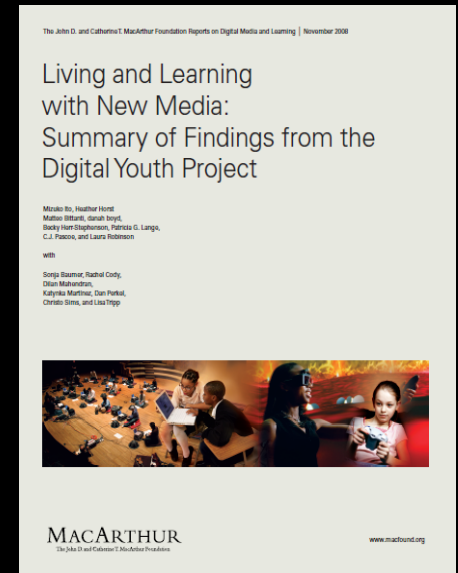
Questions?



- For more information: <http://opinion.berkeley.edu>
- Contact: sanjay@eecs.berkeley.edu

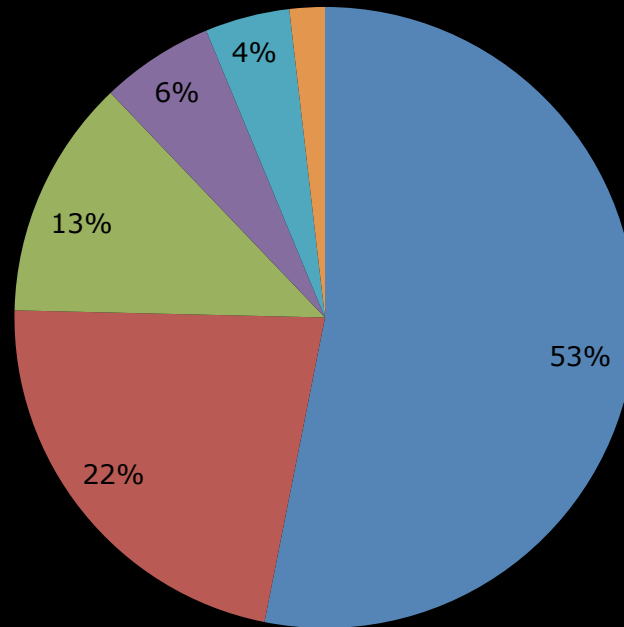
Social Media Provides Learning *Communities* and *Processes*

- Jean Lave and Etienne Wenger (1991) argue a *community of practice*.
- Sugata Mitra *self-organizing organism*
- *Peer-based self-directed learning online* (Ito et al. 2008 Digital Youth Project)



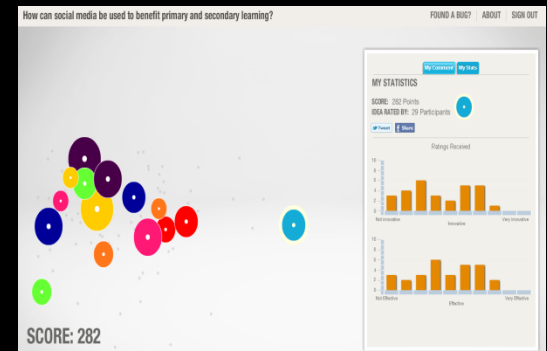
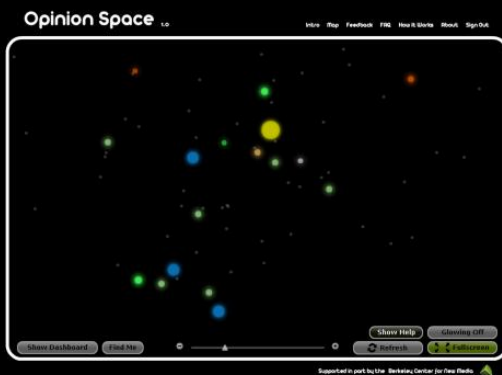
Recruitment

■ Direct ■ Search Engine ■ Twitter ■ Facebook ■ labs.fujitsu.com

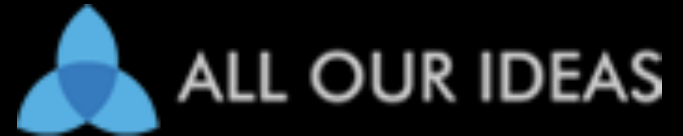


Evaluating Our Approach

- Visualization [Faridani et al. 2010]
- Reputation model [Bitton 2011]
- Sampling method shows statistically significant reductions in preferential attachment.



Related Commercial Systems



Algorithms and Models

- Reputation model that incorporates profile responses
- Uncertainty Minimizing Sampling

