



# SO.CL: AN INTEREST NETWORK FOR INFORMAL LEARNING

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# THROUGH SEARCH TOOLS A WORLD OF KNOWLEDGE AT OUR FINGERTIPS

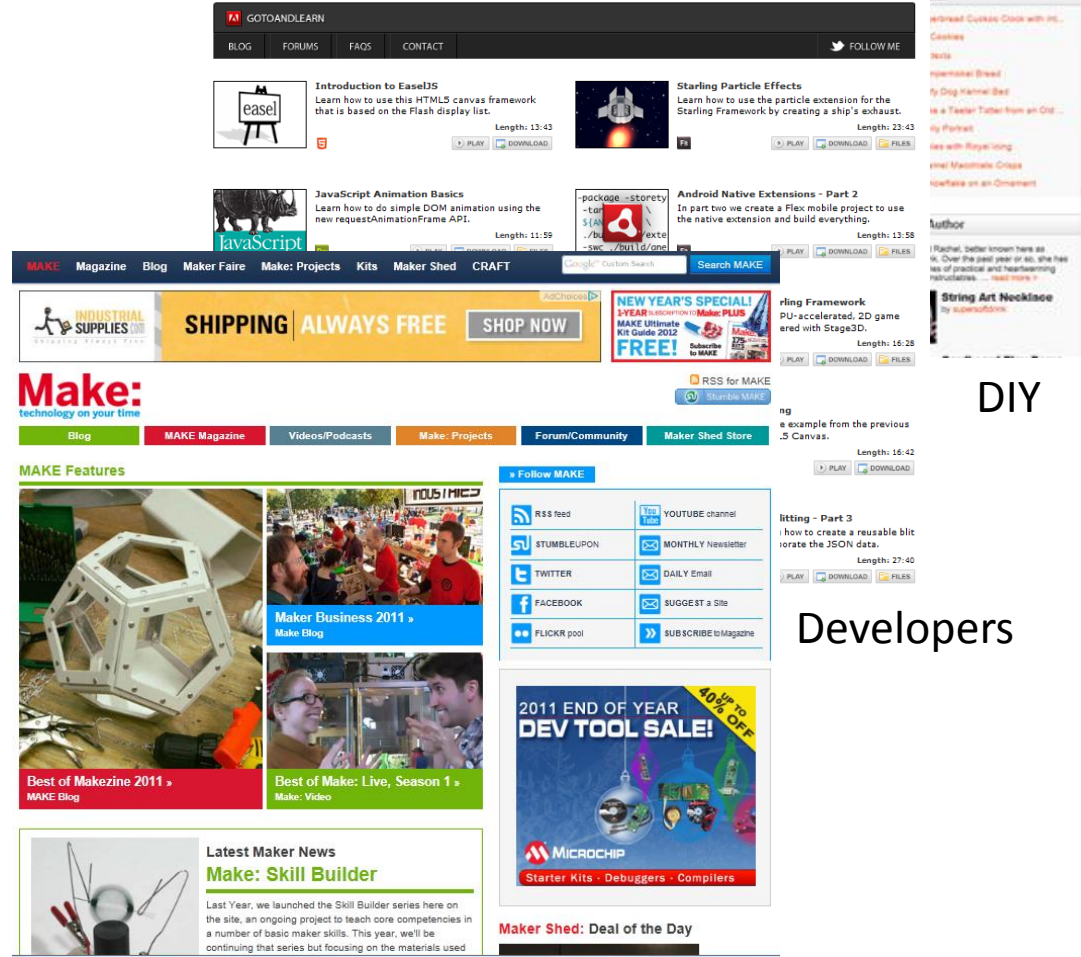


estimates at over than 3 billion searches *per day*

# INFORMAL LEARNING AND DEMOCRATIZATION OF KNOWLEDGE

- Education outside of formal institutions
- Access to learning opportunities outside immediate social circles
- Peer to peer learning
- Informal communities of practice

# SELF-LEARNERS TECH-SAVVY EARLY ADOPTERS



DIY

Developers

Makers



A green rectangular sign with rounded corners and a white border, mounted on two wooden posts. The word "Motivation" is written in large, white, sans-serif capital letters across the center of the sign. The background is a bright blue sky with scattered white clouds.

Motivation

<http://www.designerchaircoverstogo.com/blog/2010/07/fight-the-flab-for-the-wedding-dress/>

# LEVERAGING SOCIAL MEDIA BECAUSE LEARNING IS SOCIAL

Giving people a sense of connection to others in their extended networks and exposing them to their interests will motivate them to learn new topics not available in their immediate social circles.



# RELATED WORK

- Online Learning Communities
  - Remix/participatory culture (Jenkins et al. 2005), with creation, sharing, and building upon user generated content
    - Scratch, Kodu, Sourceforge (opensource), Instructables
  - Walled communities often with high barriers to sharing, members already motivated around specific topic
- Interest Networks
  - Public, asymmetrical networks focused on broadcasting information
    - Blogs, Twitter, Pinterest, Tumblr
  - Better for lightweight sharing and serendipitous discovery (Ito, 2011)
  - Not directly integrated with search



# SO.CL

search +  
sharing +  
networking  
= informal  
discovery  
and learning

## History:

Oct 2011:

Pre-release deployment  
study

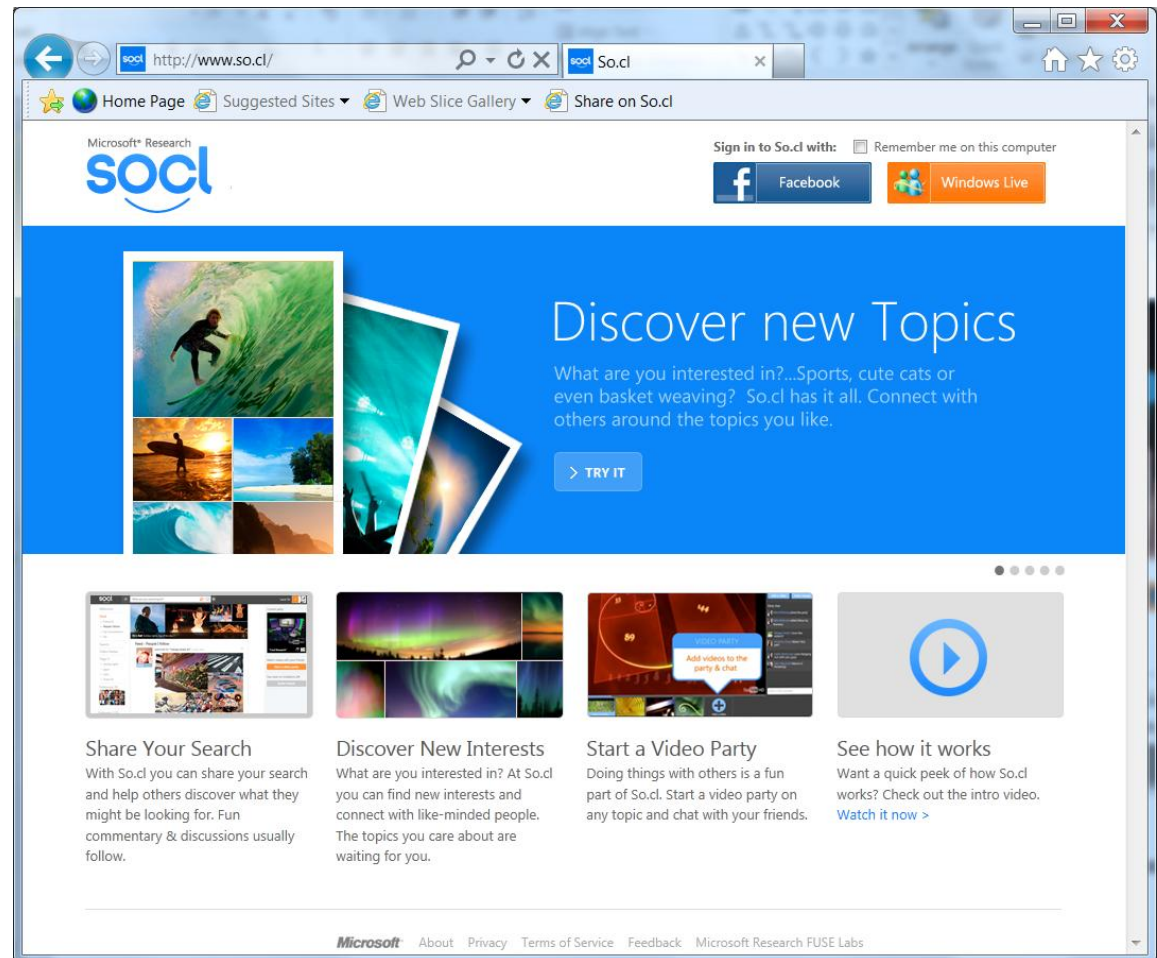
Dec 2011:

Private, invitation-only beta

May 2012:

removed invitation restrictions

*reimagining search as social from the ground up*



**Try it now! <http://www.so.cl>**

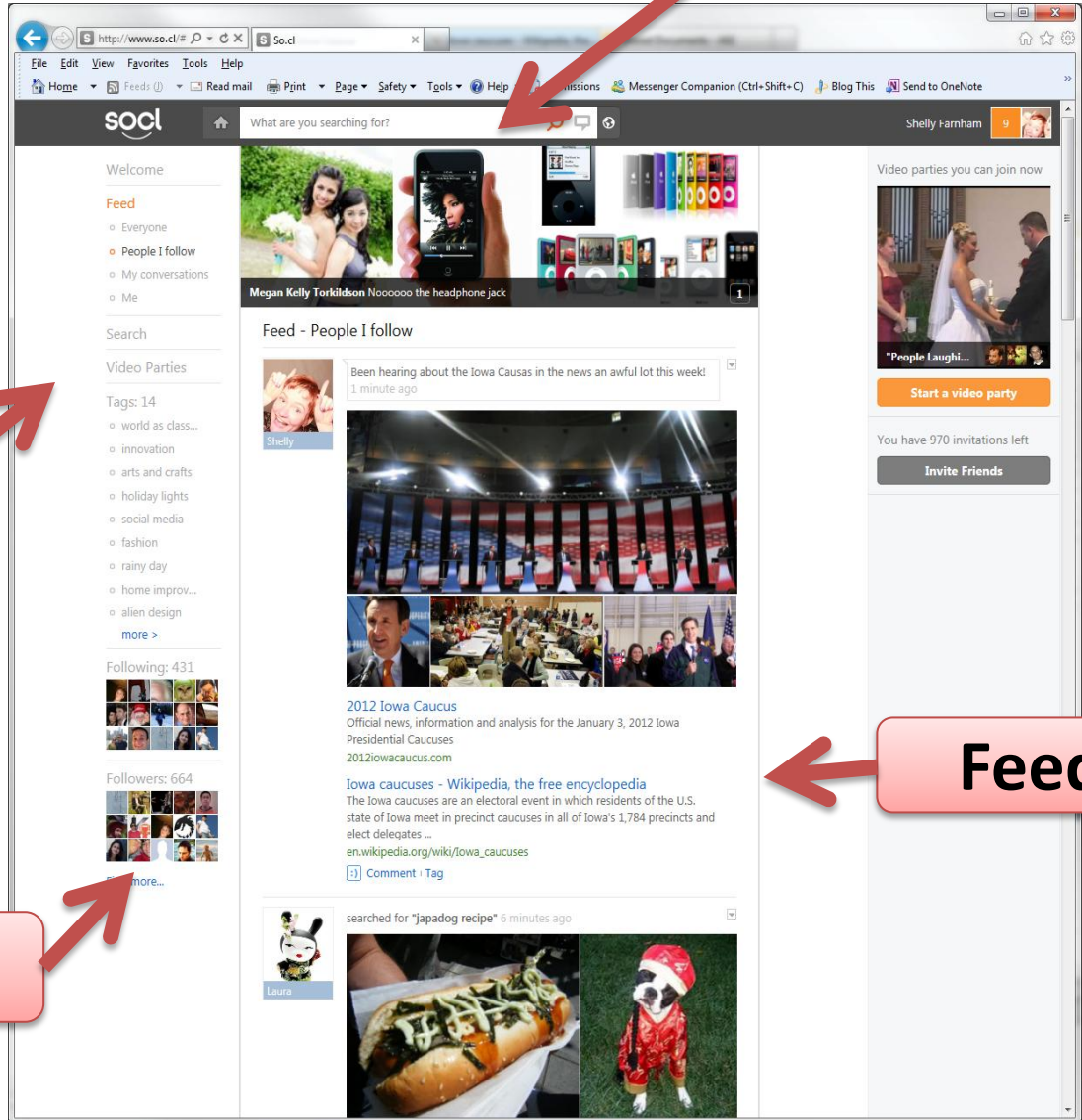
# HOW IT WORKS

Search & Post

Feed Filters

People

Feed



# POST BUILDING

Search (Bing)

The screenshot shows the so.c! social media interface. At the top, a search bar contains the text 'irish castles'. Below the search bar, there is a navigation menu on the left with options like 'Explore', 'Home', 'Feed', 'Post', 'Everything', 'Web', 'News', 'Images', 'Videos', 'Feed', 'Parties', and 'People'. The main content area shows a search result for 'irish castles' with a grid of images of castles. Below the images, there are two search results: 'Irish Castles - The Guide To Historic Castles In Ireland' and 'List Of Castles In Ireland - Wikipedia, The Free Encyclopedia'. At the bottom, there is a 'Feed Results' section showing a search for 'irish castles' 6 seconds ago with a profile picture of Shelly and a castle image.

Filter Results

Post Builder

Results

## Experience:

- Step 1: Perform search
- Step 2: Click on items in results to add to post
- Step 3: Add a message
- Step 4: Tag

# INTEREST NETWORK GOALS

- Find others around common interests
- Be inspired by new interests
- Learn from each other through these shared interests

The screenshot shows a social media interface on a platform named 'socl'. At the top, there is a search bar with the text 'What are you searching for?' and a search icon. Below the search bar, the page is divided into a left sidebar and a main content area.

**Left Sidebar:**

- Welcome**
- Feed**
  - Everyone
  - People I follow
  - My conversations
  - Me
- Search**
- Video Parties**
- Tags: 14**
  - world as class...
  - innovation
  - arts and crafts
  - holiday lights
  - social media
  - fashion
  - rainy day
  - home improv...
  - alien design
  - hatchbacks
  - hawaii vacation
  - social search
  - **electronic art**
  - new media arts
- Following: 431** (with a grid of profile pictures)
- Followers: 664** (with a grid of profile pictures)
- [Find more...](#)

**Main Content Area:**

- Tags - electronic art**
- A search filter: 'searched for "osaka station water clock" 23 hours ago' with a dropdown arrow.
- A grid of images showing digital art installations, including a large wall display with the number '19:49' and a water clock installation at Osaka Station.
- A video thumbnail for 'Osaka Station: South Gate Water Clock' with a 'YouTube' link.
- Interaction buttons: '6 Comment | Tag', 'electronic art' (tag), and '6 people like this'.
- Comments:
  - Andrés Monroy Hernández: 'this is amazing. how does it work?!' 22 hours ago
  - Tom Laird-McConnell: 'love it' 22 hours ago
- A comment button: 'add a comment'.
- A post by Shelly: 'This is the Cubatron. I credit these guys with inspiring a whole new genre of pixel LED art. 21 days ago' with a dropdown arrow.
- Images of the 'Cubatron' installation, which is a large, illuminated structure made of pixelated LED lights.



# COLLABORATIVE ELABORATION OF INTERESTS

## “RIFFS”



2 Comment | Tag

anime

2 people like this



Lorna

searched for "artistic japanese bentos" 13 hours ago



3 Comment | Tag

sushi art

3 people like this



Tom Laird-McConnell yummm, kitty sushi  
13 hours ago



Steven Ickman I like the simpsons one :)  
12 hours ago

add a comment

# COLLABORATIVE ELABORATION OF INTERESTS

## “RIFFS”



2 Comment | Tag totoro <  
2 people like this



searched for "sushi art" 1 hour ago



2 Comment | Tag food <  
2 people like this



David Raskino Yummy  
55 minutes ago

add a comment



searched for "bento art" 1 hour ago



1 Comment | Tag food <  
1 person likes this

# COLLABORATIVE ELABORATION OF INTERESTS

## “RIFFS”

searched for "miyazaki totoro" 1 hour ago



Lili



2 Comment | Tag [miyazaki](#)

2 people like this


**Michelle Alder** one of my favorite movies!  
58 minutes ago

add a comment

searched for "miyazaki bento" 1 hour ago



Michelle




2 Comment | Tag [totoro](#)

2 people like this



# SO.CL DEPLOYMENT STUDY

- 
- 33 University of Washington students
  - Seed community pre-release
  - Study:
    - Existing learning practices
    - Use of so.cl as informal learning tool



# MIXED METHODS PROCEDURES

- Week 1: On-boarding focus groups
  - Preliminary questionnaire – demographics and current practices
  - Discussion – learning pathways
  - So.cl demo and instructions
- Weeks 1-4: Use So.cl
  - Instructed to use so.cl as primary search engine
  - Completed brief weekly questionnaires
  - So.cl web site instrumented to log behaviors
- Weeks 3-4:
  - One-on-one semi-structured interviews
- Weeks 4-5: Wrap-up
  - Final questionnaire



Michal Lahav rocks!

# PARTICIPANTS

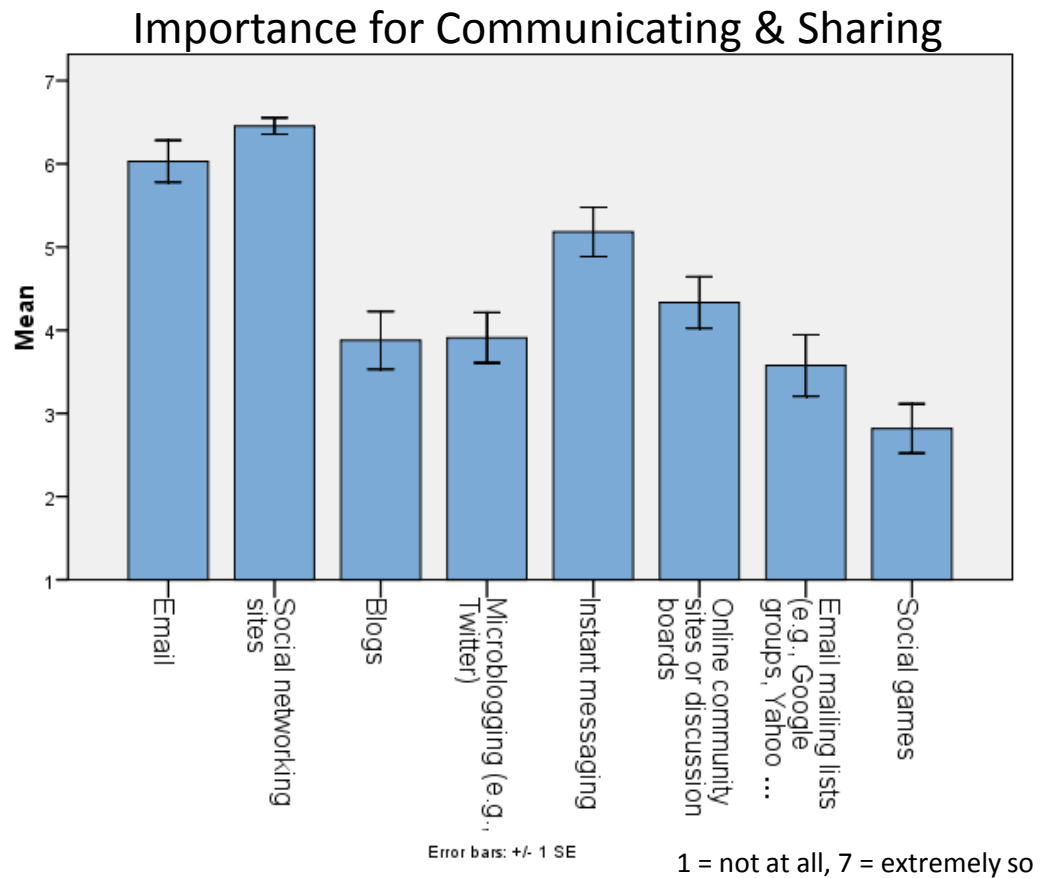
- Demographics:
  - 33 participants (61 % male, 39% female)
  - On average 21 years of age
  - 20% Caucasian, 61% Asian, 12% mixed, 3% African-American
  - 3% Freshman, 12% Sophomore, 27 % Junior, 46% senior, 3% graduate school, 9% graduate
  - 3% full-time job, 58% part-time job, 3% self-employed, 36% not employed
- Incentive: software gratuity at on-boarding and stipend for ongoing participation



# INTERNET USE

- Used Internet 7.8 hours a day: 4.6 for social activities, 3.2 informational → **always on**

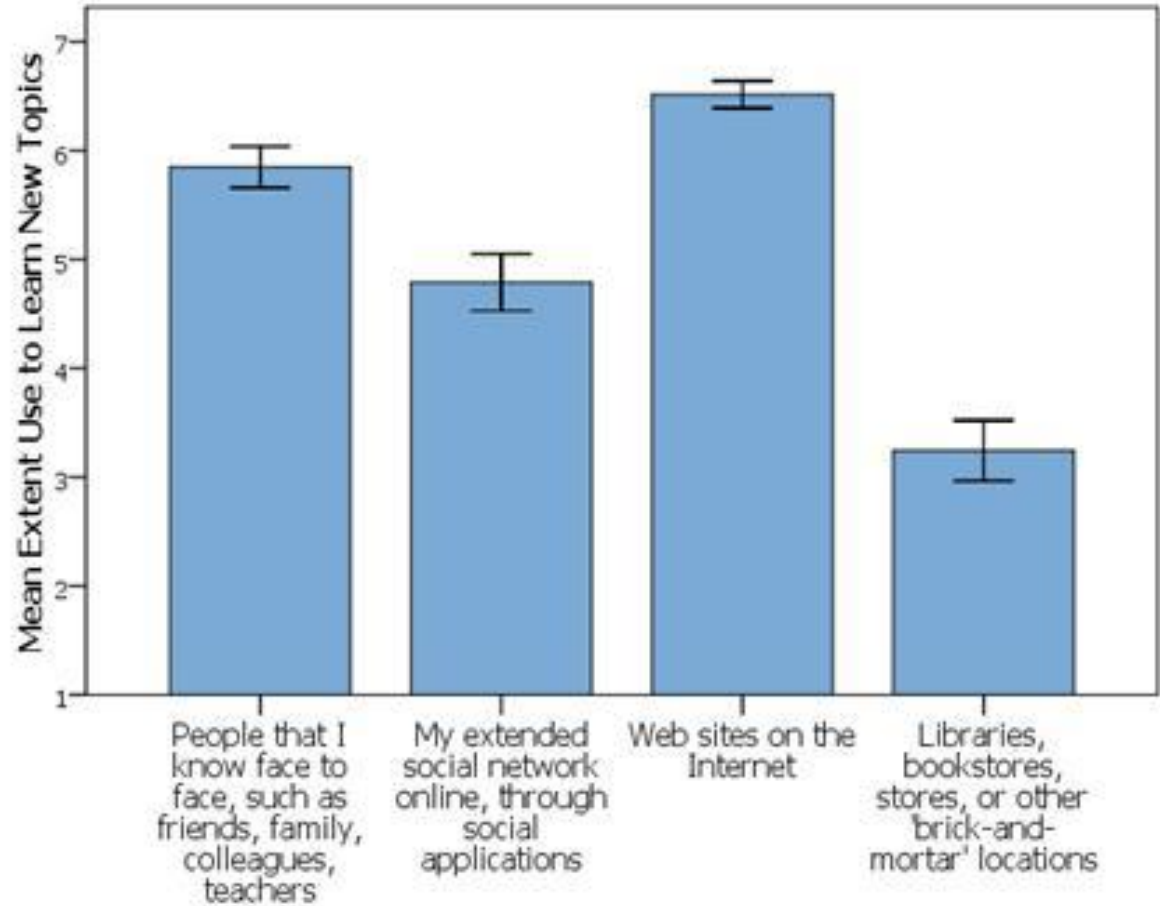
*“How important are the following types of social technologies in communicating and sharing with people in your life about topics you care about?”*



# LEARNING IS ALREADY ONLINE

If you need to learn about a topic that is new to you, either for work, class or for your own personal interests, to what extent do you rely on any of the following resources?

Students Use the Web and Online Social Networks to Learn

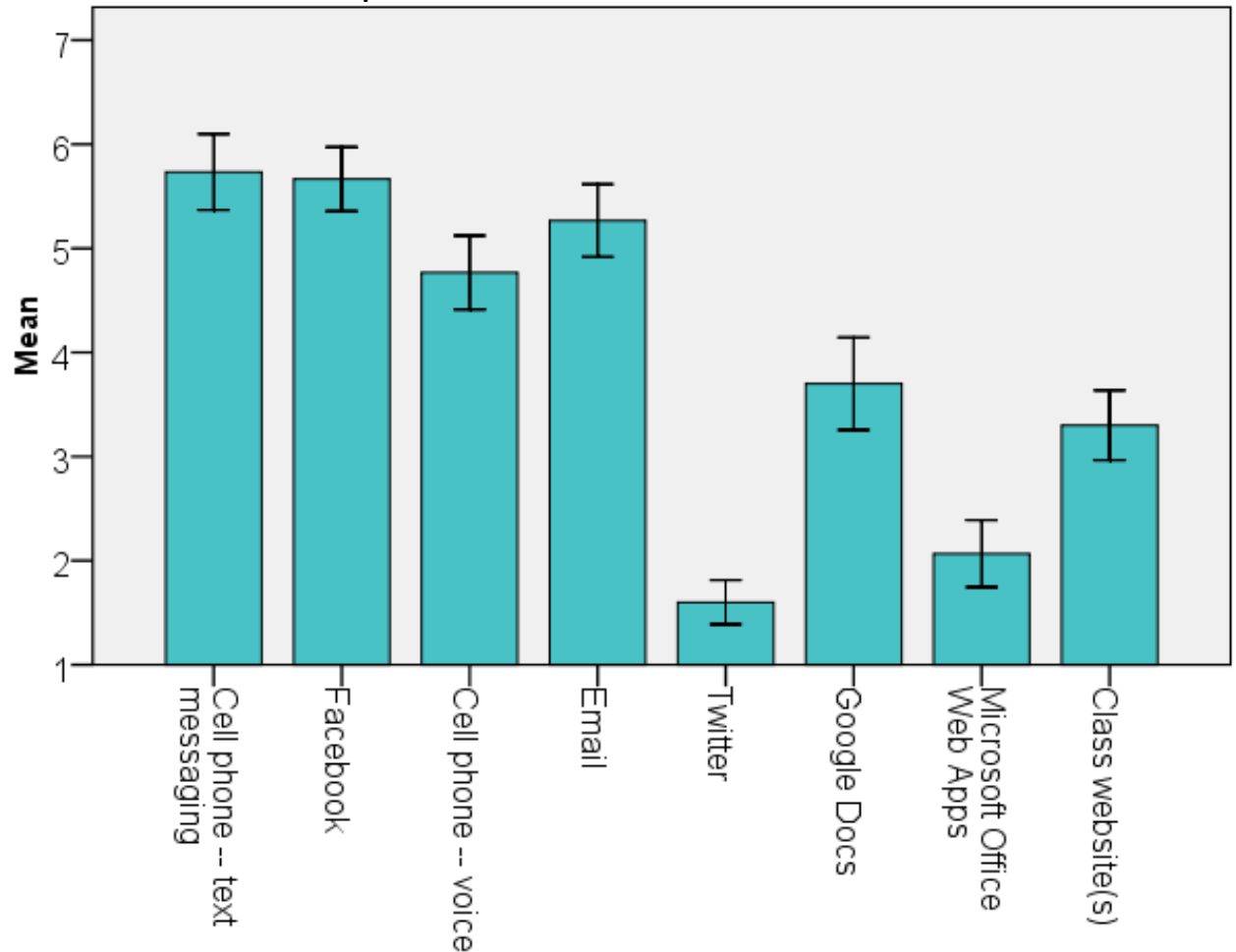


Where 1 = not at all, and 7 = extremely so



# COLLABORATION TOOLS

Importance for School Collaboration



Error bars: +/- 1 SE

Where 1 = not at all, 7 = extremely so

*“How important are the following technologies for communicating and collaborating with fellow students for school?”*

# SOCIAL LEARNING PATHWAYS

- Asked participants to describe pathways to learning something new in past two weeks
- Coded each point along learning pathway
  - Content only source (books, TV, news site) vs. social interaction (email, face-to-face, networks)
  - If a social interaction, coded as social media or face-to-face

## Example:

*“**My friend told me** in person about stabbing in home town. I wonder if this is a big issues- I **searched** for it -- wasn't in the search, but in the **news tab**. Clicked on different links to see if they were the same.”*

coded as:

1. My friend told me [personal interaction][face to face]
2. searched; news tab [content only source]

# SOCIAL LEARNING PATHWAYS

- 69% of pathways described involved social interaction
  - 43% from personal interaction to content only source

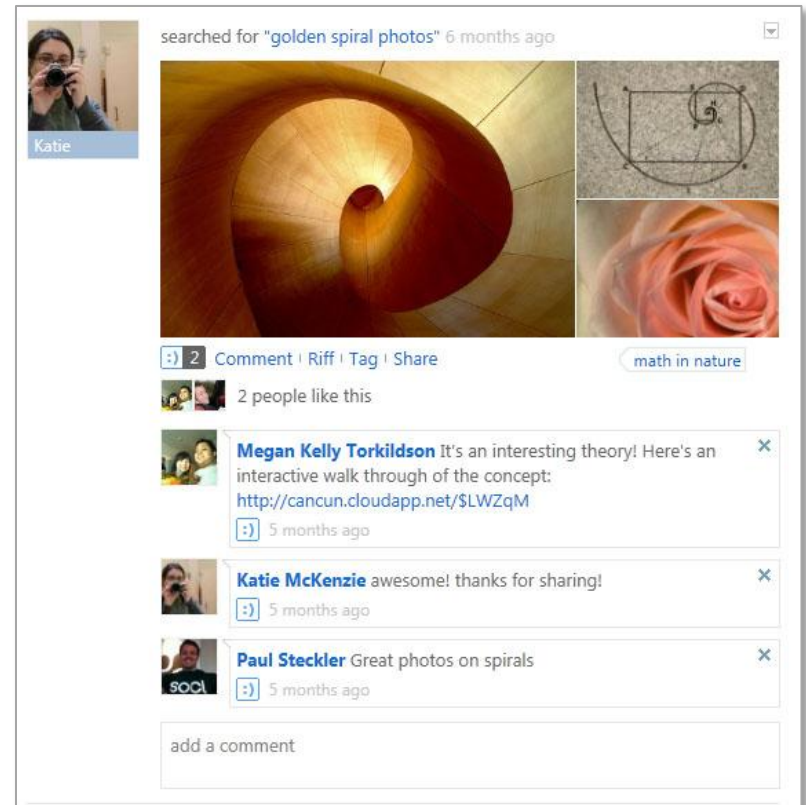
*“I learned about Steve Job’s death **from a friend on twitter** and then checked **bloomberg** for potential impact.”*

*“**My friend told me** in person about stabbing in home town. I wonder if this is a big issues- I searched for it -- wasn't in the search, but in the **news tab**. Clicked on different links to see if they were the same.”*
  - 26% from content only source to more personal interactions

*“I used **tumbler** to keep track of news related blogs. On blogs I saw an Occupy Wallstreat posts. Saw one about Rome. Then I was **talking to a girlfriend** who is in Rome. Told her that I saw photo of car fire on tumbler. She said ‘I saw a care on fire last night, we got trapped indoors because of protest’”*
- Observed foraging, sense-making but also initial discovery

# STUDY PARTICIPANTS USAGE

- 32 study participants in prerelease deployment (~250 pre-release test users)
- Oct 17 – Nov 17, 2011
- 3256 search queries
  - 1563 shared as posts
- 49 posts, 49 comments, 53 likes
- Each post received 1.5 comments, 1.4 likes



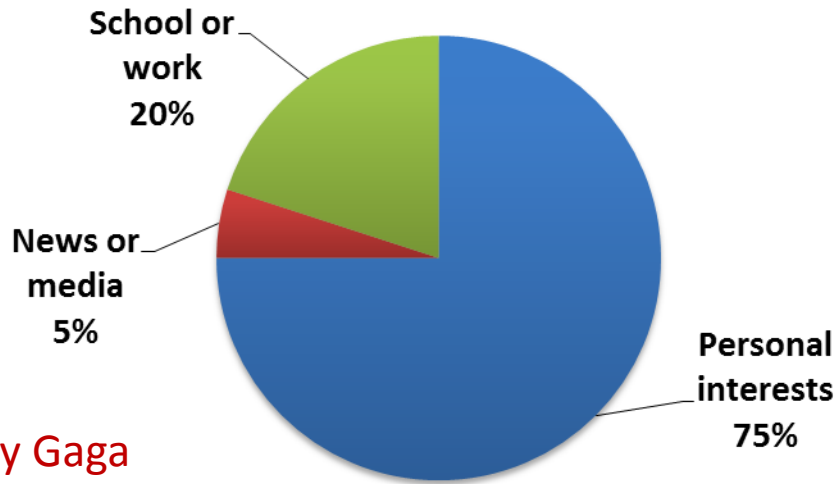


# SELF-EXPRESSION

Environment Arctic Russia

arrays in Java

## Types of Posts



Lady Gaga

debit card fees

amazing shadow art

new heights band

consumer reports best hybrid

out of 1191 posts



searched for "how to convert from decimal to binary" 4 days ago



$$\begin{array}{r} 1 \ 0 \ 1 \ 0 \ 0 \ 1 \ 1 \ 1 \\ 128 \ 64 \ 32 \ 16 \ 8 \ 4 \ 2 \ 1 \\ \hline 128 + 32 + 4 + 2 + 1 = 167 \end{array}$$



How to Convert from Decimal to Binary: 10 steps - wikiHow  
How to Convert from Decimal to Binary. The (base ten) has ten possible values (0,1,2,3,4,5,6,7,8, or 9) for each place-value. In contrast, the (base two) numeral ...

[www.wikihow.com/Convert-from-Decimal-to-Binary](http://www.wikihow.com/Convert-from-Decimal-to-Binary)

17 Comment | Tag

how to <



17 people like this

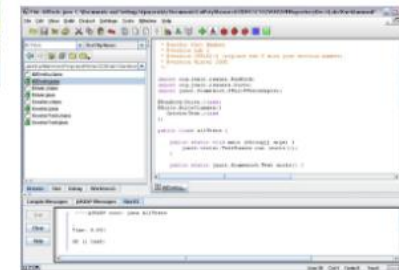


**Bobby Bright** ya had to learn that really well when doing CCNA...  
2 days ago

add a comment



Loving my intro programming class so far! :D 4 days ago



[jGRASP Home Page](http://www.jgrasp.org)

About jGRASP. jGRASP is a lightweight development environment, created specifically to provide automatic generation of software visualizations to ...  
[www.jgrasp.org](http://www.jgrasp.org)

11 Comment | Tag

cse



11 people like this

# CONNECTING IN SO.CL

- Discovering people with common interests
- Learning new information from each other



*“Last week, the common interest I shared w/ quite a few people was halloween costumes. Like me, many people searched images of past halloween costumes and posted them to soci and we would laugh about them or talk about what we were going to be for Halloween”*

# INTEREST NETWORK GOALS

Goal Achieved	Search Engine	So.cl	Social Network
Learn some new information?	6.5	5.6 <sup>s</sup>	5.8
Connect with someone new?	2.1	5.5 <sup>s</sup>	5.7
Form stronger connections with friends or contacts?	2.4	3.9 <sup>s, n</sup>	5.5
Discover something new about a friend or a contact?	2.3	4.9 <sup>s, n</sup>	5.9
Discover new people with common interests?	2.6	5.6 <sup>s</sup>	5.2
Find an expert on a topic you wanted to learn about?	5.6	3.8 <sup>s</sup>	3.8
Cooperate with others to search for information?	4.2	3.8	4.5
Find information to share with friends or contacts?	5.6	5.1	5.7

Extent to which using So.cl helped to accomplish their search and social networking goals, where 1 = not at all, 7 = extremely so

# LEARNING PATHWAYS

- During one-on-one interviews, had participants describe three learning pathways, one each for a) hobby/interests, b) school/work, and c) news/media
- 50% involved social interaction
  - 59% for hobby, 53% for school, 37% for news
  - 45% wove in and out of social media

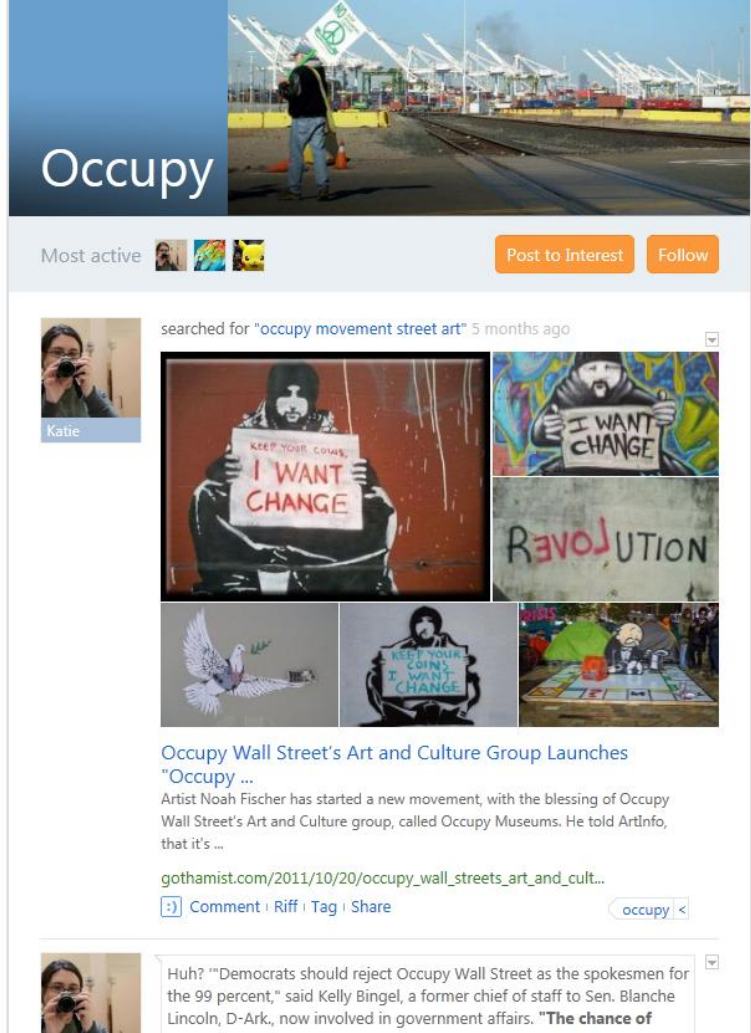
*The scandal at pen state- heard it on **TV espn**. It started to escalate, so I wanted to get more info. The head coach got fired . Go to **Facebook and post-** ‘why are you firing the coach?’ - **had 21 comments** after that. I go to **a link to** court transcript, then I started to read- got sick reading it, but able to find info. Went and did a **google search** of topic- pen state , **clicked various links**. Videos of interviews- **espn.com**.*



# SO.CL AND LEARNING PATHWAYS

- So.cl in 26% of learning pathways
  - 53.5% social learning pathway
  - 46.5% as content only

*Didn't know much about occupy wall street. I learned everything on **socl search** . **People posted** articles, pictures and videos, went on **youtube**. Learned through that.*

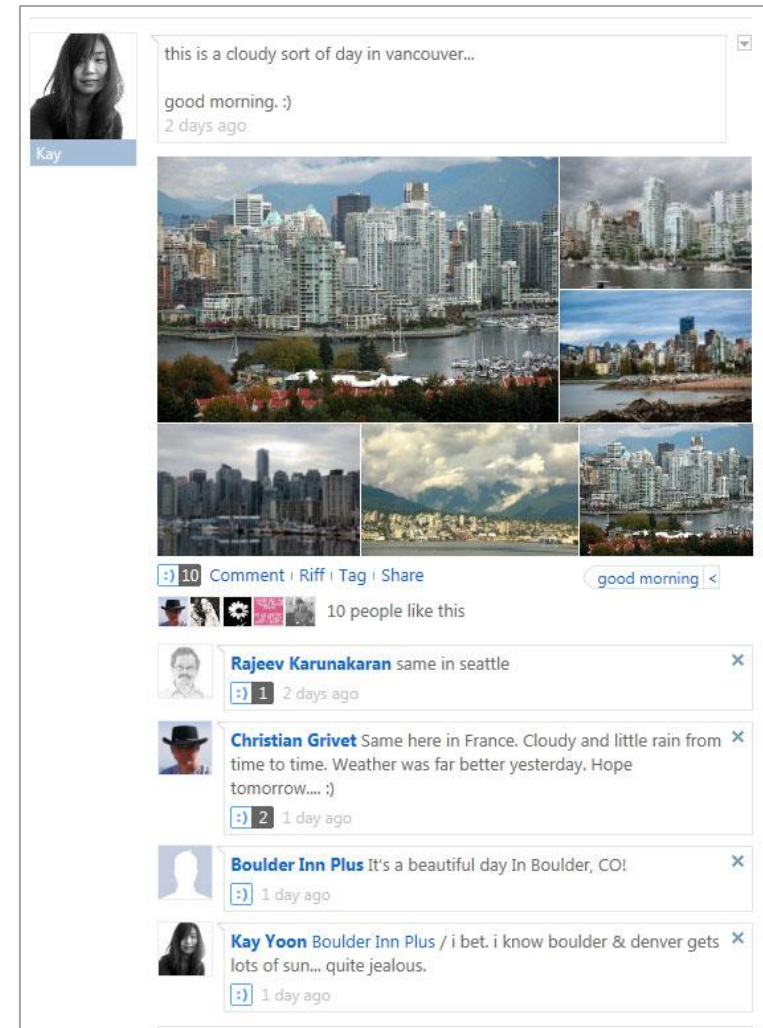


The screenshot shows a social media search interface for "occupy movement street art" from 5 months ago. The search results include a grid of images: a person holding a "KEEP YOUR COINS, I WANT CHANGE" sign, a person holding a "I WANT CHANGE" sign, a person holding a "REVOLUTION" sign, a person holding a "KEEP YOUR COINS, I WANT CHANGE" sign, and a person holding a "KEEP YOUR COINS, I WANT CHANGE" sign. Below the images is a news article snippet titled "Occupy Wall Street's Art and Culture Group Launches 'Occupy ...'" with a sub-headline "Artist Noah Fischer has started a new movement, with the blessing of Occupy Wall Street's Art and Culture group, called Occupy Museums. He told ArtInfo, that it's ...". The article snippet includes a link to gothamist.com/2011/10/20/occupy\_wall\_streets\_art\_and\_cult... and options to Comment, Riff, Tag, and Share. Below the article snippet is a comment from Katie that says "Huh? 'Democrats should reject Occupy Wall Street as the spokesmen for the 99 percent,'" said Kelly Bingel, a former chief of staff to Sen. Blanche Lincoln, D-Ark, now involved in government affairs. "The chance of

# SO.CL AND LEARNING PATHWAYS

32%, wove in and out of personal and impersonal media

*This week I'm planning a trip to Vancouver. Saw flier on **tumbler**, hearing about it on **twitter** that there is a concert for a Youtube artist. Use **So.cl** to look up hotels. Gave me links to cheap hotels, hotwire, hotel, how far it was, how much gas. **Talked to friends. texted** two of them, **called up** one other person, arranging, **posted on Facebook** -- all on group. **Facebook Group** called 'room 407', always hanging out in that room but on line. **Talked about prices.***



# WRAP UP OPEN ENDED

## FEEDBACK

- Effective serendipitous discovery of people and information

*I found a ton of people with similar interests..every day.*

*Yogurtland, coffee, fantasy football*

*I think it really helped me in seeing other people's search results..like oh-you're interested in skydiving, then we can into a little conversation about it*

- Deeper connection and collaboration? Privacy and groups highly requested features.

*I had no way to connect with them besides commenting, trying to go deeper with them is basically impossible.*

*I want groups: research, professors, family-- not everyone that you are following on one page.*

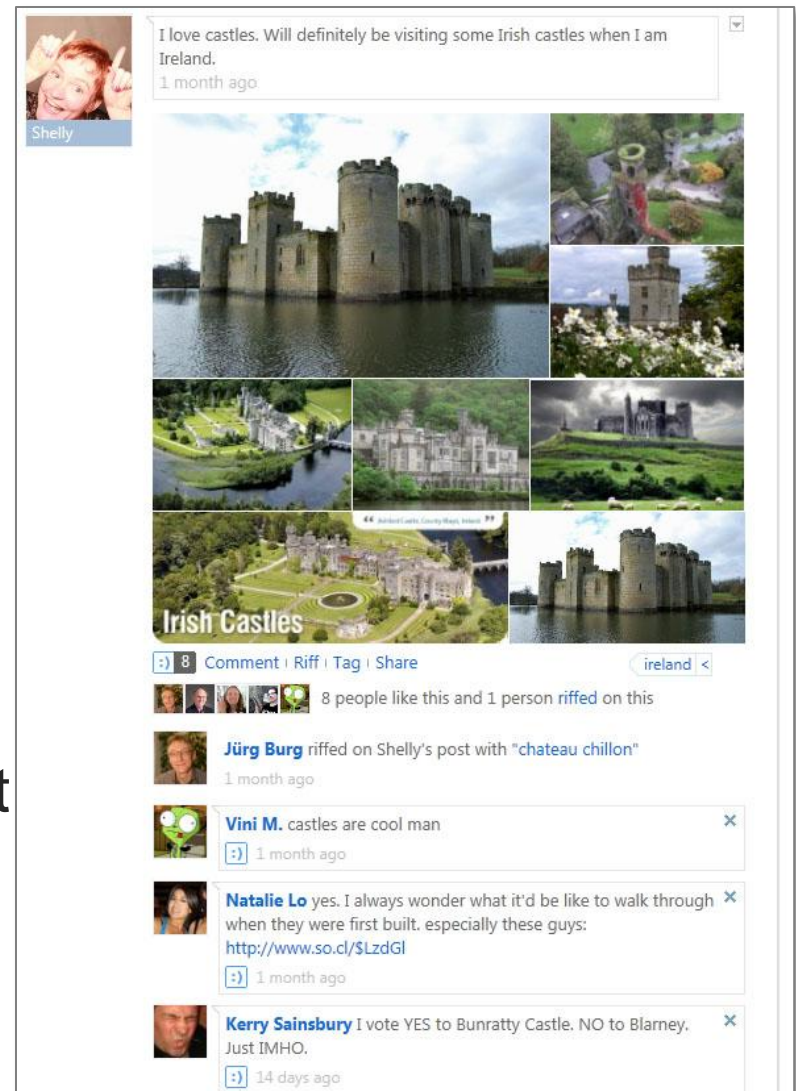
# CONCLUSIONS AND DISCUSSION

- Students are already heavily employing search and social media tools for informal learning
  - Learning online is very social and incorporates social media
  - Learning pathways weave in and out of personal interactions, pure content sources, online and offline
- So.cl:
  - Integration of sharing around search fostered serendipitous, lightweight, informal learning around interests
  - Based on study, shifted our conceptualization of So.cl; less emphasis on social search and more on interest-based networking
  - So.cl actively used in participants' learning pathways (discovery, foraging and sensemaking)



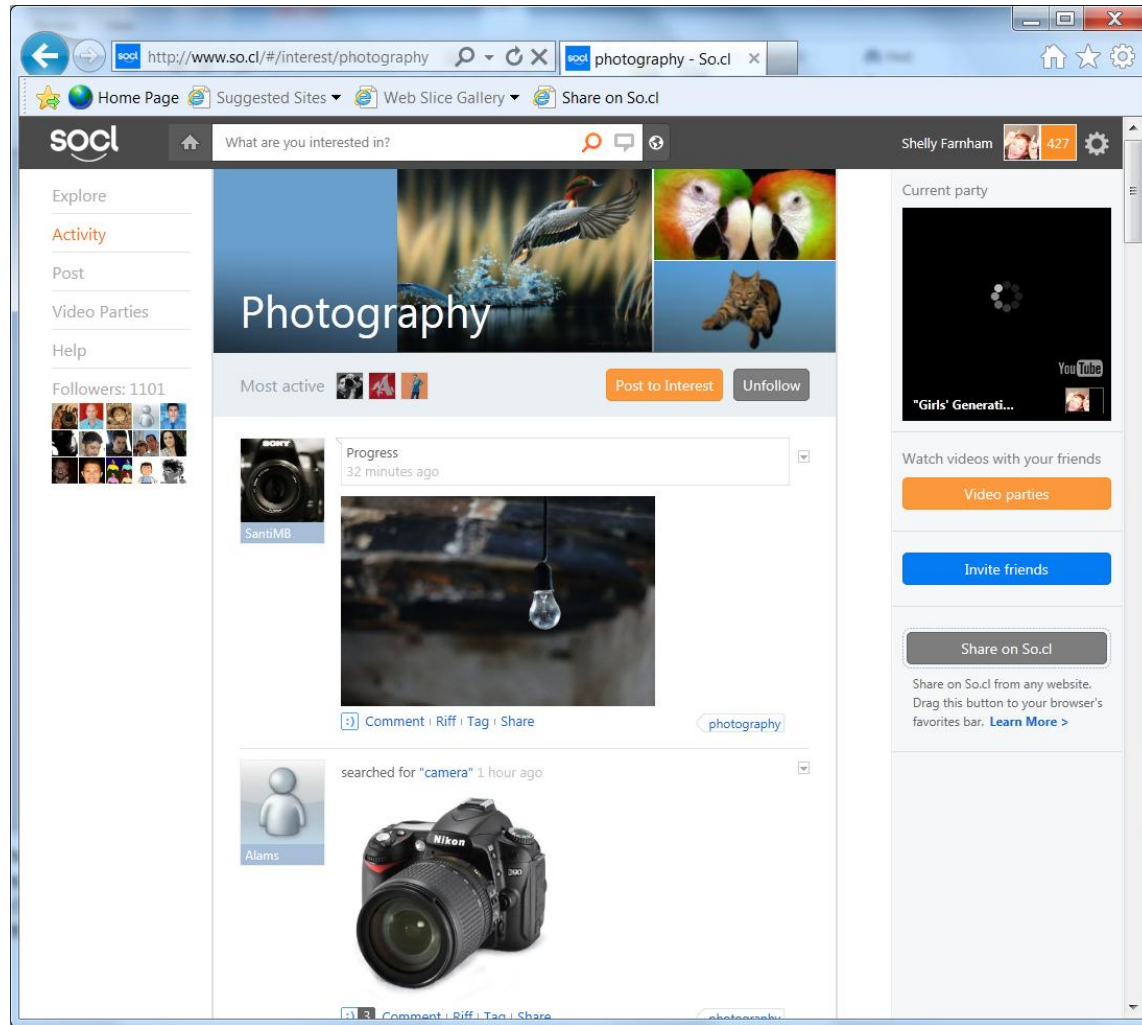
# CONCLUSIONS AND DISCUSSION

- Public network creates tension between discovery and collaboration:
  - Enables serendipitous discovery through broadcast sharing around interests
  - Inhibits more heavy-weight controlled collaboration requiring private messaging and groups



# NEXT STEPS

- Growing the community
- Features to support interest discovery and collaboration
- Mobile



## WHERE TO FIND US ON THE WEB

<http://www.so.cl>

<http://fuse.microsoft.com>

## CONTACT INFO

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# QUESTIONS