EXPLORING UBIQUITOUS LEARNING

A case study of related concepts, objects and practice

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UNDERSTANDING UBIQUITOUS LEARNING

Ubiquitous learning is an emerging term and associated area of study that refers to a *"new educational paradigm made possible in part by the affordances of digital media"* (Cape and Kalantzis 2008). It is crucial to note, however, that this learning is reliant on not only ubiquitous computing but also fundamentally determined by progressive pedagogical practices. This paper explores ubiquitous learning from three different perspectives: in terms of theory as it relates to the concept of Web2.0, in terms of learning objects, using Facebook as an example, and as it can be related in practice with a stop-motion digital literacy workshop.

WEB2.0

The term 'Web2.0' was introduced at an O'Reilly conference in 2004, right around the time we saw many of the web technologies we now associate with it begin to emerge. The information society had recently suffered through a major setback with the bursting of the dot-com bubble and researchers and academics alike were looking for something to name the successful and surviving companies and web technologies. The O'Reilly definition of Web2.0 was remarkably business-oriented but this is an important aspect to understanding the evolution of the idea. They first defined it as "*a set of economic, social and technology trends that collectively form the basis for the next generation of the Internet – a more mature, distinctive medium characterized by user participation, openness, and network effects*" (Muser 2006), but over the years the phrase has come to describe a time period, a social movement, a technology and even used as an adjective. The O'Reilly team reported eight core trends that they saw as evident in Web2.0 (Hinchcliffe 2006):

☐ **Harnessing Collective Intelligence:** Sometimes described as the core pattern of Web 2.0, this describes *architectures of participation* that embraces the effective use of network effects and feedback loops to create systems that get better the more that people use them.

☐ **Data is the Next "Intel Inside":** A phrase that captures the fact that information has become as important, or more important, than software, which has become relentlessly commoditized.

☐ **Innovation in Assembly:** The Web has become a massive source of small pieces of data and services, loosely joined, increasing the recombinant possibilities and unintended uses of systems and information.

☐ **Rich User Experiences:** The Web page has evolved to become far more than HTML markup and now embodies full software experiences that enable interaction and immersion in innovative new ways.

- **Software Above the Level of a Single Device:** Software like the horizontally federated blogosphere (hundreds of blog platforms and aggregators) or the vertically integrated iTunes (server farm + online store + iTunes client + iPods) are changing our software landscape.

- **Perpetual Beta:** Software releases are disappearing and continuous change is becoming the norm. ("What version is Google?")

- **Leveraging the Long Tail:** The mass servicing of micromarkets cost effectively via the Web is one of the primary "killer business models" made possible by the Internet in its present form.

- **Lightweight Software/Business Models and Cost Effective Scalability:** Everything from Amazon's S3, to RSS, to Ruby on Rails are changing the economics of online software development fundamentally, providing new players powerful new weapons against established players and even entire industries.

Readers will notice here that the O'reilly group suggests is that Web2.0 is strongly related to social forces as well as technologies and driven largely by business. Much of the time Web2.0 is spoken about in a revolutionary or transformative manner (Muser 2006) which has earned it the reputation of being a buzzword with little actual substance. Despite the contentious Web2.0 phrase most people can agree that there is something decidedly different about the internet today and just how (or which!) people use it. The full understanding likely resides in a number of factors, ownership and use of language is simply one of them.

After a few years of development and a succession of related discourse Web2.0 has been reconsidered. In their paper, *Key Differences Between Web 1.0 and 2.0*, Graham Cormode and Balachander Krishnamurthy (2008) discuss the distinguishing factors of Web2.0 from a more academic-oriented standpoint:

Web2.0 represents **structural changes** in the way we travel, create and otherwise interact with the internet. Users are presented with websites and application interfaces that offer more interactivity and customizability, pages are created dynamically on the fly for specific needs and the combination of these two aspects blur boundaries between sites and pages considerably. Determining how to measure relationships between agents, objects and places in Web2.0 becomes more difficult because it is in such a flux.

Web2.0 also invariably **involves new technologies**. Beyond better browsers and increased availability of internet-connected computers Web2.0 relies on technologies that allow participants to actively publish and subscribe to specialized information (content), often in a real-time fashion with aid of underlying components like Ajax and Flash. Ultimately, it has established itself in many ways as use of the internet as a platform for advanced computing tasks that might have once been fulfilled by specific software programs.

For researchers Web2.0 presents an additional challenge in the form of measurement issues. Traffic can no longer be easily measured in clicks as many interaction events are triggered by other means. Automated crawling and triggering of features on websites becomes impossible when they are designed explicitly for humans, and the amount of bandwidth and required computer performance makes massive data-mining operations difficult.

WEB2.0 MEETS PARTICIPATORY CULTURE

This paper takes a step back to relate ubiquitous learning to Web2.0 in another way, consulting the definitions from both business reference (O'reilly/Muser) and academe (Cormode and Krishnamurthy) but considering them in light of social characteristics. Henry Jenkins et al. (2006) introduced the notion of participatory culture around the same time the conceptualization of Web2.0 was coming to fruition. They define participatory culture as a culture with *"relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship… in which members believe their contributions matter, and feel some degree of social connection with one another."* They go on to distinctly state that participatory culture *"shifts the focus of literacy from one of individual expression to community involvement."* **Participatory culture facilitates ubiquitous learning because it relies on the technologies, informational structures and trends found in Web2.0 and also provides a cultural production context in which progressive (transformative!) learning can take place**. Participatory culture offers a different side of Web2.0, which Jenkins et al. (2006) characterize as:

- **Affiliations** – memberships, formal and informal, in communities where (virtual and actual) identity performance takes place
- **Expressions** – production of new creative forms, like mashups and internet content-fueled multimedia
- **Collaborative Problem-Solving** – in aggregate form, such as Wikipedia, and also gaming groups and other subcultures that intentionally pool and structure knowledge (including those who build, like the people involved in various Linux projects)
- **Circulations** – the alternative flows of information on blogs, peer-to-peer sharing networks and automated information gathering systems like Twitter or the Facebook newsfeed

Many websites and multimedia technologies are associated with Web2.0 and participatory culture, including social networking sites (Facebook, MySpace), community wikis (Wikipedia, TV show wikis), multimedia sharing (YouTube, Flickr, DeviantArt), mapping (Google maps/earth, Open street map, Platial), social bookmarking (Delicious, Digg, feeds/podcasts), rich website creation (Wordpress, Drupal, Google Sites), collaborative office software (Google Docs, Calendar, etc…), commerce (Ebay, Craigstlist, Amazon), and more. These sites and utilities offer **new environments** for learning, both in terms of virtual space and in traditional internet aspects (distance, for instance), present **new potential teachers** (flow of information can be increasingly many-to-many, authority may work differently), and offer **temporal boons** (a-synchronicity and on-demand information).

boyd (2007) proposes that information access in the (Web2.0) networked world happens differently for youth and active agents in participatory culture. She suggests that they absorb information passively, much like generations past, but potentially more of it channeled in new mediums, a sort of osmosis. They pull information by actively seeking it out from these services and systems (sometimes through prescribed use, sometimes not) and also purposefully push material online (create or author information). This sort of learning environment differs considerably from classrooms where students are subjected to ritualized or traditional information and their production efforts are highly structured. boyd's analysis really only scratches the surface, however, of the contexts, skills and competencies and outcomes that are required for full participation and effective learning in participatory culture. Jenkins et al. (2006) go considerably further to propose a set of skills to foster digital literacy and engagement within participatory culture. This paper will not go into detail about these, but they range from ways of thinking (collective intelligence, for example) to ways of doing (transmedia navigation, for instance) and all build upon classic literacy (such as storytelling). **Ubiquitous learning refers to the sort of context in which these types of activities take place**.

WHERE TO GO, WHAT TO DO

This accumulation of ideas leaves us with a number of implications, and in particular many challenging questions. First of all, the best way to create for substantive learning requires inquiries of a **pedagogical** nature. We must come to understand the scope of things that can be learned from, with or through use of Web2.0 communities and technologies. Determining how to structure the learning experience follows, and adapting it by circumstance, such as in classrooms, libraries or museums. Issues of evaluation and measurement invariably arise when determining how to 'test' or record what students take away from their experiences. Traditional pedagogical questions persevere as well, such as how to stimulate critical thinking and build confidence, but in new forms (think with the internet, perform virtually). **Institutions** must face difficult questions about how to make use of Web2.0 and make sense of participatory cultures. They have to answer questions of safety, equal opportunity for participation, promote diverse thinking (and alternative voices) and think globally, as their impacts can be world-wide. They must determine the boundaries between themselves and other spaces like they have before, but

this time it's not the home or workplace, but the internet, the mad fusion of the three. They must renegotiate methodologies as well as those who carry out instruction. Alternatively critically considering Web2.0 sites (corporations, more accurately) as institutions with intentions is crucial. Understanding the role of **technologies** in mediating the learning experience is key. Information interfaces can provide structure and balancing the extent to which we adapt to technology and it adapts to us is a tricky challenge. Empowering learners and educators to lead the creation of technology (and tech strategies) is of importance. Finally, investigating the **social transformations** at work in Web2.0 and participatory culture learning should be on the agenda. As mentioned before, spaces of engagement (home/school, work/play) are contested and new identities (and inequalities) are emerging (Digital Natives, according to some). Activism and change The process through which people relate, connect and communicate to one another and information on the web is part of the fabric of socialization in the information age, we must understand how learning fits into this.

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FACEBOOK

One of the largest and possibly most influence social networking sites in the entire world, Facebook has managed to make its mark on what seems like nearly everything. With over 200 million active users, half of which who sign in daily (Facebook press page 2009) and a massive active student population (near ubiquitous on large college campuses) it has gathered the attention of media, big business, government and academe. The system involves several major structures and functions that overlap:

- **Identity and affiliation** – examples include participant profiles, groups, company/organization pages, and tags and other categorization systems.
- **Communication** – from events to wall posts, a message system and twitter-like status updates and chat, Facebook enables multiple venues for communication.
- **Multimedia sharing** – pictures, videos, and material created through applications are exemplar of the type of media sharing that happens on Facebook.
- **Applications** – mostly to connect to other Web2.0 services but the Facebook application platform is built for a wide range of purposes.

SOCIAL NORMS OF THE SYSTEM

Like any other internet technology based on pre-existing communities Facebook has social norms of use. Some of these are encouraged by the actual interface itself:

- **Connecting and sharing** – the language used in descriptions on the site is conducive to sharing, most groups, applications and other features are open access by default, nearly all items have share functions built into them (for content on and off of Facebook), overlapping friends and common interests are readily presented in groups and on profiles and the site has feedback mechanisms built into a lot of its structures.
- **Activity and involvement** – recent activity is elevated and displayed to users in virtually every area of the site to help give context and an impression of what people are up to. The site has many ways to form memberships and affiliations and users can be tagged in photos and in notes to indicate ties to real-world activities and actions.
- **Content vs. form** – the site is in a continual battle to find appropriate balances: allowing users to have enough space and options to present or say what they need to on pages and in communications, the range of navigation features offered and how they're organized, the western arrangement of the site and its colors, look and feel, and other issues, such as how often updates should be shown.

Other social norms on Facebook are dependent upon circumstance or context. Since it is a system that finds its strength in reinforcing and mediating predetermined community ties (not inspiring many new ones) participants bring with them a great deal of baggage and preconceptions. Preliminary studies indicate racial/ethnic and gender discrimination seep into interactions on the site (Ginger 2007a, 2008a,

2008b) similar to how they do in other places on the internet (Kendall 1998). Indeed membership on Facebook in the first place may already indicate affiliations and externally social associations (Hargittai 2007). Pre-existing relationships will probably never totally disappear from a system such as this, but what makes for some of the most interesting studies about Facebook are the social norms connected to the availability of information. Often this is couched in concern over privacy and safety, but in a broader sense what information people expect to find and convey reflects a lot about lived experience. The structures, features and social norms on Facebook determine the context in which (ubiquitous) learning can take place there. In many ways the site is a strong example of participatory culture and technological tool that creates affordances for more transformative learning, but it has not always been used in this manner. Current research suggests a number of possibilities.

FROM THE LITERATURE

A great deal has been written about Facebook in recent years, as it is new (trendy) and a convenient target for aspiring researchers in academe and media sensationalists. One of the first important publications about the site was the work by Ellison et al. (2006) on social capital. They found that lower-level students who used Facebook had significant positive increases in social capital (connections to one another and things like higher self-esteem) than those who did not. This suggests it can act as a community-building or reinforcing tool. Mazer et al. (2007) led one of the first investigations into the impacts Facebook has on the teacher-student relationship, which indicated many of the same benefits and warnings mentioned in the next section (as well as better communication and comradery between the two parties). Others have looked into Facebook's potential use in education institutions, especially with regard to effective policy and appropriate use (Stutzman 2006, National School Boards Association 2007). The site has application opportunities for libraries (Bridges and Landis 2008) and potential for youth and community engagement (Jenkins et al. 2006). There have been criticisms of the site that have negative implications for learning too, including participation differences and isolation of certain groups of people (Hargittai 2007, Mayer and Puller 2007, boyd 2007) and a disproportionately large amount of material related to fear, privacy and information mismatches (Preibusch et al. 2007, Dyer et al. 2007, Jones and Soltren 2005, Acquisti and Gross 2006, to name just a few of the more influential ones).

USE AS AN EDUCATIONAL TOOL

Facebook does offer several advantages as a learning or educational tool. Among many student populations it has a large user base, it costs virtually nothing to implement, offers a range of tools for information sharing and production, and is quick to deploy with reduced community management (some automated distribution of information, severe abuse is covered). It has clear and present dangers, however, in that data ownership is questionable (especially lately with the EULA changes, though now it's partially community-determined), blurred lines of information sharing (it's not always clear who has access to what), difficult vulnerable populations and tied authority issues (kids and parents, employees and bosses), challenges for evaluation and research (difficult to measure both in

impact and because of data-mining inhibitors) and some people strongly believe that the site is intrinsically (and eternally) only for social use.

IDEAS FOR LEARNING

Facebook presents several intriguing inspirations for learning.

Classroom project ideas – In some sense Facebook acts as a sort of social simulation environment. As a result exercises like designing applications involve many skills and considerations, including social engineering for viral propagation, effective interface composition, original or creative advertising, and more. Students in design could find this to be a helpful real-world assignment. Social science instructors can also make use of the site because it presents motivation for discussions about research ethics, has numerous public areas that replicate (but alter!) social interactions and is great for survey deployment and content analysis.

Creative application use – Since Facebook is something of a platform to connect to other Web2.0 and participatory culture technologies it can easily be tied in to apps that are good for digital literacy skills, like those for artistic expression and remixing. It can be a place of play with competitive learning games (learning words, typing, and problem-solving).

Information needs – Just as learners go to Google to answer random questions and find music and videos of anything they want on YouTube, they go to Facebook for social information needs. They can even ask all (or some) of their friends for information or assistance with notes, events and clever use of the newsfeed and get results similar to *Yahoo! Answers*. Facebook pages and groups work as website replacements and extensions for many organizations, especially student-driven ones.

Mobilizing people – Finally, dissemination of information to activate agents for causes and activism has been a recently powerful use of Facebook, especially internationally. The Obama campaign saw fairly deep political engagement and discourse taking place over Facebook as well – though it has a ways to go Facebook is a budding social movement tool.

This are just some ideas. When combined with the possibilities offered by cell phones and mobile learning Facebook might offer even more. Readers should see the above as a springboard, and consult the educational tool and literature review sections to brainstorm!

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STORYTELLING IN [STOP] MOTION

The rapid development of Web2.0 and corresponding surge of participatory culture has given rise to learning contexts that help youth to acquire digital literacy related skills and competencies (Jenkins et al. 2006). In many ways our schools have been failing to do this for years. Our classrooms and teachers don't make use of cutting-edge technologies, or if they do it's often in a very contingent (concerns over safety, lack of understanding from instructors) or traditional way (old learning on new machines). Education institutions aggressively and passively socialize students into regulated roles, chastise deviant thinking and constrict transformative learning (Finn 1999). Yet, in the information age, we're attempting to train and educate youth for jobs that don't exist yet, so one of the best strategies to prepare for this eventuality is to teach them ways of thinking critically and creatively (Robinson 2006). The lowered barriers to access to media production, especially in participatory cultures, present an outstanding opportunity to accomplish this objective: digital literacy can, and should, be intertwined with analytical and innovative thinking. If it can't happen in schools, then in a world of ubiquitous learning we must strive to find new locations.

WHAT TO DO?

But how do kids, say, learn to make a video on YouTube? Who (or what) tells them what messages and themes to include and what do they learn from the experience? More importantly, what motivates them and which kids are able (and choose) to create digital media content? Much of the learning that happens "naturally" (without formal education institutions and agents like parents or mentors) doesn't address issues of ethics, access, and good judgment. One place where kids (and parents) could be able to produce media with guidance and connect into participatory culture is the library.

Nearly all libraries in Illinois, even the most disadvantaged and remote ones, have at least basic access to the internet and those that don't have broadband plan to add it soon (Ginger 2008). Many of these libraries aren't very well-setup for digital media production, in terms of hardware and software resources, as well as personnel and policies or programs, but they have the potential (Ginger 2008). With only a little effort and guidance from community empowerment organizations like Prairienet and the Community Informatics Initiative many libraries could be recast to fill some of the aforementioned gaps in the formal education system.

STORYTELLING

Often kids are taught to create and write stories in the classroom via traditional methods, such as in essays or journals, but many are denied a chance to tell stories in visual or video form, especially at an early age. Storytelling is a crucial component to not only literacy, but gives kids the chance to be self-determined and espouse positively encouraged (but unaltered or unmediated!) messages, which in turn builds confidence (Finn 1999). This paper overviews an example of ubiquitous learning in practice as it occurred in a digital learning series at Rantoul Public Library in the spring of 2009. The event involved

grade school children, approximately 4th through 6th grade, and their parents (a family learning experience) crafting a story and turning it into a video. It was a new use of the library not just in terms of engaging with technology but also encouraging kids to see and explore the environment in ways they had never before. From the get-go they were aware that their end product would be a video that could go up on YouTube and be an influence on the internet. Their videos weren't just ordinary films though, they were built with a very powerful medium: stop-motion.

STOP-MOTION

Stop-motion offers a variety of benefits over standard streamed video that can be summed up briefly: *it's easy*. Digital cameras are pretty ubiquitous (many libraries have them as well as patrons) and nearly all modern operating systems (Apple OSX, Windows XP/Vista) have built-in movie editing software. Stop-motion is considerably more like animation which allows for characters like stuffed animals, action figures and Lego people as well as special effects (add them by just editing the picture!). Since digital cameras output JPEG files there are no issues converting bulky video streams or file types between platforms. And in the case of the stop-motion at Rantoul no kids were ever pictured, making the videos safe to place on the internet. They're generally short and involve enough varied media that they can qualify for fair use, which alleviates issues of copyright. They also don't involve as much acting and could help kids to think about emphasizing non-verbal storytelling components, like actions and expressions.

THE WORKSHOP BREAKDOWN

The prototype workshop at the Rantoul Library came as a three part series with assistance from the children's librarian and the author as well as parent volunteers and, later, a couple of other student volunteers to help with video editing. Each session was intended to be an hour and a half, as many younger kids have trouble sustaining a single activity for too long. Each day then had a specific focus but contributed to the youth building a story with stop-motion:

STORYTELLING

Learners were introduced to the basic components of storytelling (characters, setting, plot) and then helped to analyze a couple of example stop-motion films. They then selected characters from a giant pile of stuffed animals and puppets (they could also bring in their own) and brainstormed plot ideas, which ranged from simple actions or events like 'a race' to complicated notions like 'a mystery.' They wrote down these characters and ideas on notecards and then ran around the library in groups (about 2-3 each plus parents/volunteers/librarians) to come up with ideas for settings. They wrote scene discoveries on their note cards as well as new plot ideas (they were encouraged to take the stuffed animals to act out potential scenes for one another) and then came back as a big group and arranged their cards, mixing and matching until they came up with a few plot ideas. Each group then decided on one final idea. The facilitator gave them an introduction to storyboarding (which they began but it was

assigned as 'homework') and they then concluded the workshop by sharing stories with one another and giving feedback (what they liked, what they would add).

FILMING

The learner group began the next session with a short presentation by the instructor using PowerPoint to show the basic concept of taking pictures for stop-motion and different film and photography techniques (as well as effects-creating strategies). They were then turned loose in their groups to go take pictures for their stop-motion story. This took a great deal of time and involved experimentation, collaboration and communication. For example, they had to come up with ideas about how to best shoot the scene they had on their storyboard panel, and try it with a director, a person taking pictures, and a person moving the character. The pictures were then collected by the workshop facilitators later and gathered on to one computer and backed up.

PRODUCTION

The last day started more informally. Youth went immediately into their groups and were set up with computers in vicinity to one another (in the children's computer lab). They considered their video's audience and then selected a title, arranged/edited their pictures, added effects, synced them to music and otherwise adjusted timing (the most impressive but difficult part! Kids/volunteers brought in their own music and we also used the library's) and then published their video! They were able to go through with the volunteers and post it on YouTube, too, writing their own description and helping to pick keywords. Finally they had a grand sharing of their videos with one another, giving applause.

IMPLICATIONS FOR UBIQUITOUS LEARNING

This workshop fits as a ubiquitous learning practice in a number of ways. Quite obviously it involves teaching that goes on between learners, within families, and from librarians. A lot of it wasn't the traditional directions, though, kids had to help explain what they wanted to do with their film to their volunteers and parents learned from kids how to operate the cameras and computers. The workshop wouldn't have been possible without the affordances of digital media production technologies like cameras, video editing software and YouTube and these sorts of items aren't explored often enough in schools. The parents and kids also helped to develop a broader view of learning in the library – that it didn't have to just involve books (though admittedly one film involved a spell book). For the students it was storytelling in a new form:

- It was done collaboratively in a flexible process (their stories changed throughout each day of the workshop but hung on to central themes)
- They found ways to express emotions and concepts that might be hard or different to communicate in written media

- And the entire effort was steeped in critical thinking, from brainstorming plot twists to envisioning what affect camera angles have on the audience to monkeying with the sometimes clumsy computer software to get it to work the way they wanted it to.

The workshop involved several of the digital literacy skills and competencies outlined by Jenkins et al. (2006) in their report *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*:

- **Play** – the whole process was playful and unserious, the learners didn't even see the storyboarding assignment as homework!
- **Performance** – they had to perform for one another in showing scene ideas and sharing their videos and also had to think about ways to make their characters perform in the story.
- **Simulation** – since the library environments were limited the process of picking and designing settings as well as contextualizing their characters within them was something of a social world simulation.
- **Appropriation** – the editing process involved a great deal of using different media, particularly pictures, effects videos, sounds, and music.
- **Transmedia navigation** – youth followed their story from fluid note card brainstorms to written summaries to drawn storyboards to still pictures to fluid video scenes. The author can't personally think of a better example of transmedia navigation!
- **Negotiation** – the audience was a key concern at different stages of the process and the learners also had to learn to work with one another and explain stories to the other groups.

NEAT IDEAS

While this workshop was certainly effective and fun in its own right, analyzing it from the perspectives employed in Jenkins et al. (2006) leads to ideas for future use. What if this sort of workshop were coordinated through a social networking service community through the internet? If Web2.0 could an application that was like Windows MovieMaker or Apple iMovie but could be used anywhere and on any computer then it might make it easy for individuals to create communities and share content and ideas. They could employ common characters, use similar themes and engage in similar settings (say, libraries all around the world). Stories could have multiple parts (Mr. stuffed penguin travels to Paris and then to Australia) and learners could mentor one another and crate camera technique guides and joint scripts. Some websites already have something like this happening (EBaum's World, for instance) but left to their own design these aren't properly addressing the previously mentioned warnings: ethics, equal opportunity for youth and good judgment. Educators, parents, and perhaps best positioned, older students need to get involved to help with this process. It could be rolled into classrooms like a sort of digital pen-pal (write to them with your video) or used as an alternative response to writing prompts. The opportunities are greatly magnified in the context of the participatory web!

QUESTIONS

The workshop does leave us with some questions though, which need to be answered. How does one measure the impact of something like this? To some extent we could gauge the technical and storytelling skills youth take away from the experience, but how will we know this has affected their confidence or the way they think about being able to shape the internet? Are small-scale workshops like this really doing anything about a digital divide that's fueled mostly by wealth disparities and a lack of civic commitment to the common man? The youth may learn to use digital tools to create their own stories but their ideas are still informed by media and at the end of the day they have only some say in how YouTube works or what options are available in iMovie. In some sense this is the eternal battle of structure verses agency, and while these adventures in digital media are empowering they must be comprehensively considered. If possible we can find ways to help the youth become aware of social structures and institutional oppression and proceed to defy them!

On a more somber note the workshop could be quite scalable, though this hasn't been determined. Younger children could probably do very simple scenes (though the utility of this may be constricted) and older youth could easily have complex plots, explore interesting subjects like how to make humor and delve into more advanced technologies, like modifying pictures with Photoshop or rigging characters to move in special ways.

Finally, it's paramount that we determine how to shift story topics to ones related to community engagement. A funny story about a sick snail is a great entry point, but how could we teach those kids to make a stop-motion video on community history or what they learned in biology class about the environment? Kids must be encouraged to pursue embedding their own activist messages and making media their own personal experience.

CAVEATS

Worth mentioning, I thought I'd break out of the third-person character. There were some funny things that happened throughout the workshop that are worth mentioning. First of all, the parents were very much learning as much as the kids. I didn't even expect them to show up, much less be active volunteers, but most of them wanted to learn about the different functions on their digital cameras and how to better use computers. I didn't really correct spelling and grammar errors when the kids were writing stories, because I didn't want to inhibit their process or make their stories feel unwelcome (see Finn 1999) but this bothered the children's librarian who thought I was reinforcing bad habits... makes for an interesting point of conjecture. We had our fair share of problems: the library camera ran out of batteries at a critical moment, there was potentially offensive rap music on one of the editing computers that a child stumbled into, we almost destroyed a very large auto reference book, and both movie editing programs (Apple iMovie and Windows MovieMaker) had all kinds of bugs, crashes and problems. Next time we're trying Open Video Editor on Linux.

Ultimately it was a fun time and established the groundwork for new stop-motion workshops and programs with the Rantoul Public Library. I can't wait.

- The stop-motion videos (instructional ones and those created by the kids) can be found at http://www.youtube.com/CommunityInformatics
- A complete guide for how to run this workshop, complete with links to demo videos, storyboarding materials and more can be found at
- http://www.communityinformaticsprojects.com/files/DigitalLearningSeries_StopMotion.pdf

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It's also important to note that the *Elevate* program in Ireland has been doing this sort of thing for years now:
http://www.thedigitalhubelevate.com/