



Meeting Learners Where They Are: A Case Study of Media MashUp Libraries' Approaches to Teaching 21st Century Literacy Skills

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Media MashUp (MMU) was an IMLS funded project (LG-07-08-0113ⁱ) designed to help libraries build capacity for offering computer-based programs for youth. These programs were designed to help foster 21st Century literacy skills. The program focused on the Scratch programming language (<http://scratch.mit.edu/>), but also used other creative freeware programs (i.e., Audacity, Picasa, SAM animation, ArtRage).

MMU was a partnership among six library systems from around the country and The Science Museum of Minnesota. Three staff members from each library participated in the program: two librarians or youth workers responsible for programming, and one administrator responsible for institutional buy-in and other administrative tasks. Libraries ran at least 20 programs: 10 formal workshops and 10 open-labs.

Core project staff visited each library once throughout the course of the project. Braafladt visited two Libraries to provide technical assistance, Nelson visited two libraries to provide administrative support, and Phipps visited Winchester¹ Public Library and Lake County Public Library to observe sessions in action. This report details the two locations and the site visits.

Project staff from all six libraries attended a kick-off meeting in January, 2009 in Minnesota. The goals of this meeting were to meet each other face-to-face, receive training on Scratch and pedagogical techniques for teaching with technology in informal settings, discuss perceived barriers to implementing Media MashUp in their libraries, and share successful strategies for overcoming barriers. Discussions about barriers to implementation and possible solutions took place with the large group, and within each library system. In depth data from these conversations are included in this case study to provide context for the site visit data (An overview of these interviews can be found in Phipps (2009)).

Methods

Winchester and Lake County libraries were selected for the case studies because they represented the best-case scenarios. The participating staff members worked well together, and they had mostly overcome their barriers to programming. Since funds were only budgeted for one visit from core staff to each library, we decided it was best to send the project PIs to the libraries having difficulties and focus the case study on the libraries that were succeeding. It is worth noting that Winchester and Lake County libraries were not the richest, or best equipped, they did not have the

¹ All names of libraries and people used in this report are pseudonyms.

most conducive technology programs, but they were succeeding with the available resources.

Interviews about barriers and strategies for overcoming those barriers took place in Minnesota in January 2009. Site visits were conducted in July 2009 and April 2010 at Winchester and Lake County Public Libraries respectively. Site visits included meetings with program staff and observing open-lab sessions. I observed and took ethnographic notes during each session.

Case 1: Winchester Public Library

Setting

Winchester Public Library serves an urban population of about 650,000, children under the age of 18 make up about one quarter of the population and children aged 10-14 are 8% of the total population. About two thirds of the population of Winchester are African American, and the other third are white. The median household income is about \$35,000 per year, 20% of the general population and 35% of children live in poverty. Eighty percent of the adults in Winchester have high school diplomas or equivalency, and about one third of the adult residents are considered low literacy.

The Winchester Public Library has an adult services coordinator and a youth services coordinator. The library employs children's librarians and adult librarians who share teen responsibilities. The project staff from the Winchester Public Library are Jean the youth services coordinator, Jake an adult librarian, and Ariel a library assistant. Ariel and Jake have dedicated responsibilities to teen services. There are about 20 branches in the Winchester Public Library; the majority of the Media MashUp programming took place at the system's main branch. The Winchester staff are fully dedicated to providing high quality service to the citizens of Winchester despite significant barriers they face.

Jean, Ariel, and Jake all attended the January workshop; Winchester was the only library system in the project to send all three participating staff to the January meeting. All three staff work at the central branch of Winchester Public Library. Participating staff at Winchester listed many barriers (for an overview of barriers see Phipps, 2009), but listed IT, marketing, staffing, space, and timing as the ones that impede their work most seriously.

At the January meeting, staff voiced their grave concerns about interfacing with their new IT department, or 'help' [sic] desk. The library's IT department had recently been subsumed by the city's IT department, causing staff to worry. IT resources are so scarce in Winchester, the teen services staff had secured grant funding to purchase a set of refurbished laptops for teen programming. They kept these computers in a locked cart, separate from the library's computer system. Teen programming staff could install software they needed for programs (e.g., Scratch, Picasa) without having to go through the usual bureaucracy; additionally, the laptops were available whenever teen program staff needed to use them. However, before leaving for the January meeting Jean found the cart of laptops unlocked, laptops sitting on top of the

cart, and an un-official looking sign-out sheet. Jean noticed names from all over they city government, not just teen services staff. Since these computers were purchased with a grant for a specific purpose, Jean, Jake, and Ariel were upset. Jake was especially concerned about the city barcodes that appeared on the computers; he felt this was the city marking the computers as city property. Jean replied,

“That's fine and frankly the pens on my desk are city property. However, they were from [a] grant purchased with the intent for use with youth programming and they jolly well are going to end up like that. That's how it's going to be and that's not, it's not negotiable. We just get them and they'll comply.”

While they were understandably upset, Jake did note that being connected to the city's IT department could have its advantages. Jake and Ariel agreed that extra security measures and virus protection would be nice. They also noted that Jake, the laptops' primary care taker, did not have any formal IT training, so that would be an added benefit as well. At the site visit in July, the computers were in their locked cart in Ariel's possession; they had worked things out with IT regarding the laptops.

Something the staff from Winchester did not mention in their interview in January, but arose at the site visit was the library's lack of internet bandwidth. At the central branch of Winchester Public Library, the staff share bandwidth with the public. This makes the internet sluggish, and the public wi-fi internet access is also severely limited. Although an internet connection is not necessary to run Scratch, it can be helpful. To work around this problem, Ariel borrowed a wireless router and set up a local network within the room where she held programs. Access to the internet was still slow, but participants could still create Scratch accounts and access information and content via the web.

Other than IT complications, marketing and publicity were major barriers to successful teen programming at Winchester Library. As with many libraries, Winchester Library's marketing and publicity apparatus had not adapted to 21st Century modes of communication and planning. The library system published a quarterly booklet, Info Dates, with six-month lead times. Jake joked, “What's Info Dates?” Ariel admitted that she doesn't even look at it, so why would teens. Unlike some other library systems in the program, staff at Winchester can offer programs that did not appear in Info Dates. However, all marketing and publicity efforts, not included in Info Dates, are supposed to go through the PR department. The problem is the marketing 'department' is one person for all 20 branches in the system, so even that requires six-weeks of waiting. Staff explained the situation:

Jean: it's [marketing and publicity] a policy that doesn't work.

Interviewer: Ah ha.

Jean: So everybody's working around it. Um, and its policy that [sighs] if we had um library administrators in place then we could probably work on the policy. But we don't, we have city administrators in place who... haven't found it interesting enough.

Ariel: So that's a good thing and not a good thing. The policy doesn't get changed so we end up doing *de facto* practice.

Jake: We have a marketing department but a lot of the time we can't utilize them to the fullest that we need to because they need all the... time. So a lot of the time we have to do individual marketing.

Jean: But on the bright side, there's Ariel. And although we got a snotty comment of 'oh you're making your own brochures now?'

Ariel: Yeah, Jimmy doesn't like me very much.

Jean: Tough.

As with other obstacles, Jean has a fierce attitude toward protecting what little resources her staff have. In an interview at the site visit, Jean articulated her management philosophy: she needs to protect her staff and use whatever social capital she has in the organization to empower her staff to do the best job they can. She is very protective of her staff and their ability to do their work, and do it well. This attitude comes through in the interview. Jean expressed weariness with the system, but was also firmly committed to the work of a public library. She was used to doing more with less, but seemed to be sick of all the battles.

In January, when the subject of staffing came up in the interview Jean quipped, "We're gonna deal with that last 'cause that's just ridiculous. That's, that's our boogabear." When pressed about this, Jean responded that the library had been decimated with one third of the staff they had in 2005. Although she noted there were 29 vacancies, they were not hiring that many new staff. As with other libraries in the project, this brought programming and staffing the reference desk in direct conflict. Staff numbers at Winchester Library are at a bare minimum; according to Jean, they're down to a skeleton crew. Due to the low numbers of staff, most librarians are required to spend most of their time at the reference desk with little time to run and develop programs. Winchester has used non-librarians, like Ariel, and volunteers to run programs, but Jean noted that there must be a commitment to

nurturing and supporting their volunteer base. Of course, keeping a volunteer base active and engaged takes time and resources.

As with most of the other libraries, project staff from Winchester Library have had problems finding a time of day that works for the youth to offer programs. They have been trying to find a good time for teen programming for four or five years with little success. However on further discussion Jean suggested that maybe the problem is that they need to change their strategy and try having open programming every day from 2:30 PM - 7 PM for a while to see when works best for the youth. Ariel suggested that they just need a consistent time so youth will know what to expect. They admitted that they hadn't had a program in a while, and that Scratch is a bit different than bringing in a guest speaker. They could just schedule their non-reference time as Scratch programming on a regular basis to find out when works best for the youth.

The final barrier identified by Jean, Jack, and Ariel was space. Although they had a number of options, they did not think the space available was suitable to their needs. They enumerated problems with most of the available spaces for being too noisy, too awkward, or for having too few plugs. The central branch of the Winchester Library system is a sprawling modern building with lots of metal and glass. Although modern, Jean felt it did not seem very cozy. As of the January meeting, they had not found a space that was conducive to the relaxed nature of the Media MashUp program. In their reflections after each session, Ariel and Jake noted that the physical set-up of their programs had negative impacts. Programs held on public computers did not work because they were too disruptive of other patrons, and because of restrictions on uploading data to public computers. Another space, near a café, had too many distractions from people walking through the space. A third space, named for a local mascot, was frequently used for Media MashUp programming.

It is a cramped space, about as big as two offices connected with an open door. The room was stuffy, and got quite hot with 12 computers and as many people. There were few outlets, and limited table space. Youth had put computers on a ledge around the outside of the room, which made interaction between staff and youth and among youth difficult. Jake and Ariel would put the laptops in one half of the divided room, and console games (e.g. Wii) in the other half. Although this allowed serious Scratchers some quiet, it meant that those who came to play games usually did not try out Scratch. By July, the staff at Winchester had found a better solution. For Teen Tech Week (an annual technology-focused summer camp), Jake and Ariel moved into one of the library's conference rooms. Meeting rooms were discussed at the January meeting, but there was concern that they were too out of the way and teens would not find them. However, after using a conference room successfully for Teen Tech Week, they decided it was the best option. The conference rooms were large and spacious with ample power outlets and the freedom to arrange the space to allow for increased collaboration.

Successful strategies to overcome barriers were also discussed at the January meeting. In Winchester Jean, Ariel, and Jake had to rely on covert, do-it-yourself

solutions to overcome many of their obstacles. Each participating staff member expressed a degree of discomfort toward the situation. A system with sufficient resources and sensible policies would be best, but all three agreed that doing what is right is preferable to following broken rules. Other solutions staff were considering included building volunteer capacity, being more proactive to find a time that works for the youth, and providing food at workshops.

Open Lab Session

Fourteen youth, six girls and eight boys, attended the open lab I observed at Winchester Public Library. Youth ranged in age from early tween to teen, all youth were African American. One youth, an older boy, had also attended Teen Tech Week². His mother came in with him and thanked Ariel for offering these programs. The mother noted the importance of computer skills as a gateway to meaningful employment. She stayed for about half an hour, just watching, and then left, her son remained. Unfortunately, Jake was sick when I visited. Ariel and Jake offered open computer labs every Tuesday afternoon during the summer of 2009, except for the week of Teen Tech Week. Ariel said they usually had about 20 youth attend each session, but not too many youth attended multiple sessions.

The conference room is a large open space with modular furniture and an attached kitchen. Before the program started, Ariel and another staff member set up the furniture so each of the tables had four chairs and laptops, and a TV with a PlayStation 2 in one corner of the room. There is a cart with some juice boxes, bottled water, and small snacks in the back of the room. Setting up the laptops was not straightforward. Since the laptops were donated from a variety of sources, there were at least three different operating systems (Windows Vista, Windows NT, and Ubuntu), and a variety of different computers. Some of the computers did not start up properly, some would start, but could not get on the internet. Ariel also had to set up her wireless router to provide limited internet access in the room.

As the youth filter in, Ariel and another staff member set them up with computers. This was an open lab, and youth were free to do what they wanted to on the computers. Ariel knows some of the youth, and she greets them by name. Although this session is meant for teens, some tweens come in too, mostly with the older teens.

Most youth settle in, and start working on something quietly. Youth are talking at one table, but youth are mostly working quietly by themselves. No one uses the TV or PlayStation 2. Some youth put on headphones, and one boy is dancing along to his music in his chair. One older girl is helping a very young girl who is sitting next to her. Ariel is definitely busy; with Jake out she is the lone adult with significant Scratch

² Teen Tech Week is an annual fixture in the summer programming at the Winchester Public Library. Unlike drop in programs that are open to a wide range of ages, Teen Tech Week is exclusively for teens aged 13-18. Jake and Ariel lead teen tech camp each year for about 20 youth. Ariel reported that the 20 youth created 80 Scratch projects throughout the week.

experience. The other adult does not know much about Scratch or the computers. Ariel is busy with the boy who attended Teen Tech Week, he wants to make a playable piano. Ariel helped another youth get started who gave her a blank stare when she instructed him to press the space bar. She pointed it out, and helped him find something meaningful to do in the session.

About half an hour into the session, one girl looks at her neighbor's computer, and wants to do what the neighbor was doing: painting. Ariel helps her get started. Another younger girl wants to play a game, and Ariel shows her the Scratch website, a repository of Scratch programs from around the world, and helps her find a pac-man like game. Two older youth, a boy and a girl, work together. They were sitting across from each other, and she came around to his side of the table to help him on his project. Ariel is continually pulled back to the boy making the piano. He is doing high-level work, but needs a lot of time. Most youth are working on Scratch projects, but some are using Picasa to draw and paint, and others are playing web-based games. The other staff member was concerned that some of the youth 'weren't doing what they were supposed to do' (i.e., fooling around). Ariel assured her that in an open lab youth could do what they wanted. One of the youth with more Scratch experience asked about Scratch cards (cards with simple challenges and instructions on one way of accomplishing the task) because he wanted to make his sprite (character) jump higher.

Youth started taking snack breaks about an hour in to the two-hour session. Snacks were allowed, but had to be consumed away from the computers. Three girls left at this point. The batteries began to run out about an hour into the session, and youth begin migrating closer to the power outlets.

Ariel continues to work closely with the boy making the piano. He takes notes in a notebook as she talks. Jean came in to check on things, and helped out for a few minutes before leaving again. The girls who left keep peaking their heads into the room, but don't stay. The other youth are working on their programs, mostly independently.

With about 45 minutes left, Ariel starts explaining how to share programs on the Scratch site. Most youth are intently working on their projects; no one has used the PlayStation during the session. A number of the girls have left, now there are eight boys and one girl. A few of the boys look at each other's programs, laugh, and then get back to their separate projects. Youth work until the last minute to finish their projects.

The range of complexity in the projects is vast. Some youth obviously have prior experience with Scratch and computers, while others, like the boy who did not know what the space bar was, have very limited experience. Additionally, some youth asked for help frequently, and others never asked for help at all either from Ariel or other youth. In this situation, open labs seem to work well. It would be difficult to lead formal instruction that would be meaningful to this range of experience and ability.

Case 2: Lake County Public Library

Setting

Lake County Library serves a suburban and urban population of approximately 1.1 million. About one quarter of the population in Lake County is under the age of 18 and about 5% are between the ages of 10-14. The median household income in Lake County is \$65,000, 11% of the total population and 15% of children under age 18 live below the poverty line. About 10% of the population is African American, 5% is Asian American, about 80% of the population is white, and about 5% identify as Latino/a or Hispanic. About 90% of adults have high school diplomas or equivalencies and about two fifths of the adults have college degrees.

Lake County Library has a youth services coordinator and employs teen and children's librarians. The project staff, Tina and Beth, are both teen librarians. Lake County Library has about 40 branches. Tina works at a small community branch in an inner ring suburb and Beth works at one of the larger libraries in the system in the neighboring town. Both towns have experienced demographic shifts in recent years that have caused tensions. These tensions have fomented some policies that are detrimental to positive teen development (e.g., few opportunities for positive afterschool activities).

At the meeting in January 2009, Tina and Beth articulated a number of barriers to successful teen programming in Lake County. Their main concerns focused on technology, time, space, youth, poverty, and library policy.

For Tina, time is the most pressing concern. Since she works at a small branch with few staff, her schedule is not stable from week to week; making scheduling youth programming at regular times difficult. Additionally, youth services librarians have significant responsibilities for staffing the reference desk, further complicating programming. According to Tina:

But it's also like a job description thing in my case, ... like the kid's librarian can do story time and ... it's just built into the schedule but if I want to do a program we have to, like, move everything around and accommodate a program.

Beth added, even with the space and technology, "it's a great thing, but it's one more thing." This was not isolated to the Lake County system, other librarians in the group mentioned the correlations and disconnects between story time and computer-based programming for older youth. They see story time and programming for youth as filling the same need for different age groups, yet story time more highly valued than the computer-based programs for youth.

Beth also had scheduling issues, but of a different kind. Her library is one of the main branches in the Lake County system, so she and her colleagues are often tapped to sub in the smaller branches. According to Beth, previously scheduled youth programs

can be canceled at a moment's notice to fill the staffing needs of other branches. To complicate matter further, although subs may be available, each shift must have at least one regular librarian. Tina noted that even with a sub, the regular librarian ends up doing more work, because the subs are (naturally) not as knowledgeable about the specifics at each library. She expressed concern that if she did more programs, she would put undue stress on her already over-worked colleagues.

For Tina, at a smaller branch library, space is a major concern. Her library has one room for all community activities. She laments

“Story time is in there and so I can't like set up and say this is the Teen Computer Corner, you know, like post the pictures that you draw on the wall and have the stereo systems you listen to, pop in CDs that you want to listen to... I don't know if it's true or not, but I think it makes a big difference to have that available to make kids comfortable and want to come back and have ownership of the area.”

Larger libraries in the Lake County Library system have special areas and collections dedicated to teens. The rules are different in these areas, at the central branch of Lake County Library, food and music are allowed in the teen section.

Technology issues range from access to laptops to IT policies. Although all libraries in Lake County have public computers with access to Scratch, public computer areas are not appropriate settings for teen programming, and these computers did not get updated versions of Scratch. As with the other participants in the project, staff at Lake County Libraries prefer to use laptops in more private rooms for teen programming. Most branches do not have sets of laptop computers that can be used for teen programming. Although Tina and Beth's branches did, they noted that the computers did not regularly have updated software. Although Scratch is loaded on all of the public computers in Lake County libraries, the librarians observed, that few if any youth are spontaneously opening Scratch and exploring the program.

Poverty related issues present barriers at Tina's library that other librarians in the program did not mention. Her library is located near a HUD housing development and the population is highly mobile. Additionally, some parents who cannot afford childcare, or are concerned for the safety of their children, instruct them to stick near the librarian and not to talk to other youth. Other youth behave in ways that get them kicked out or temporarily banned from the library. Youth in this neighborhood can suddenly lose their means to get to the library as their parent's job schedule changes or they are forced to move. These barriers make repeated involvement difficult.

Tina and Beth were concerned about the simultaneous focus on Scratch and teens in the Media MashUp program. Both librarians had experience running Scratch-based

programming and felt it appealed to a younger audience than the grant was targeting. As Beth noted:

It just comes down to ... what teens will want to come. Like who? What age group? 'cause in the past I've had the more luck with slightly younger audience. But if you get too young, it's no longer really teens and so finding that cut off that's still within the scope of this project, but, or else finding a way to appeal to the older teens which a lot of the time comes back to illegal downloads...

All project staff noted this, and the creators of Scratch published an article during the run of the grant noting that Scratch is most appealing to youth aged 10-14 (Resnick, et al., 2009). Beth and Tina have had trouble getting youth to come back consistently.

The Lake County librarians appreciated the workshop as a chance to meet other library professionals facing the same challenges. Tina and Beth feel overcommitted in their jobs, and valued the time the workshop provided for professional development and personal growth. Yet they are concerned they will not have enough time to keep up with the demands of high quality youth programming.

At the site visit to Lake County Tina and Beth shared some of their successful programs: having Scratch available at the Anime Prom, teaching Scratch at an afterschool center, and Fruit Jams a project involving electrodes and musical fruit. Sara, their supervisor, was pleased with the progress Tina and Beth had made, but agreed that without the grant funding it was unlikely that these programs would be able to continue.

Open Lab Session

The session I observed in Lake County was at a local recreation center, close to Tina's and Beth's libraries. The youth at the center that day all attended one of the local middle schools. As mentioned earlier, adults in this community are not very teen-friendly, so there are few places for teens to recreate afterschool in positive ways. The teen space at the recreation center is one solution to the problem. The center is staffed with adults; a number of them are a part of the city's youth violence prevention initiative, run through the police department. Two adults (other than those working with Scratch) were in the room at all times, reminding youth of the behavior policies (mostly about swearing) and playing pool with the youth.

The room looked like a repurposed elementary school classroom - the room had a chalkboard on one wall, and 2 sinks and cabinets along another. There were arts and crafts supplies in the cabinets. The room was loosely partitioned into different areas to accommodate multiple uses. One corner has couches and TVs with video games and VCRs. One TV was on ESPN, that no one was watching, five boys were playing games on the Wii on the other TV and socializing. A few girls were socializing on the couches, but not paying attention to the boys playing video games. The other half of

the room was dedicated to table top games: foosball, bumper pool, and two pool tables. The remaining quarter of the room had a big round table with six laptops where Tina and Beth had set up for the Scratch program. The youth in the room fluctuated throughout the two hours, but there were about 20 youth in the room at all times. Snacks were given away (bananas and chocolate milk today) every half hour.

One girl started using Scratch and wanted to draw so Tina and Beth set her up with the drawing pad and pen. These devices allow the user to draw more naturally than with a mouse. Another girl asked her what she was doing and she said, “you’ve got to try this, it’s fun. You can draw and stuff” the other girl joined her and also wanted to use the drawing pad. She got set up and was drawing. Within about 20 minutes other girls came by and started their own projects and all the computers were in use. Most were drawing, either using the pad and pen or the mouse. A few of them were looking through the gallery of sprites to pick the ones they wanted to use.

The second girl who started finished her drawing quickly and did not save her project. Another girl came by, chose a sprite from the gallery, completed a simple animation with the help of a Scratch card and left. Once she left another girl quickly took her spot and began working. After the first 30 minutes or so the girls worked on their computers for the whole time. Most of the girls drew for most of the time, but everyone did some animation, with the encouragement of Tina and Beth. Tina and Beth went around helping as necessary explaining and using scratch cards when there were ones to help with the question. The first girl created a beta like fish; other girls were working on different projects. Two girls started with the dancer sprite and were using the hip hop music that comes with scratch. Another was drawing a smiley face to animate, and others started with sprites and drew backgrounds.

About an hour into the session, a youth staff member arrived to help Beth and Tina field questions. (Lake County Library has hired a number of teenaged youth to help facilitate technology use at the libraries.) At an hour in all the girls had started animating their projects. Tina and Beth ask each girl ready to animate if they know how cartoons work before explaining the animation process.

The girls start sharing their projects with each other. The two girls who started with the hip hop dancers each picked different sprites and were working on stories. Both stories were kissing related. One was retelling the frog prince story and the other was creating a story where a butterfly asked a ballerina to kiss at lunch. The girl with the smiley face drawing created a short animation where the face said ‘haha crazy’ and ‘I love you’ as it bounced around the screen with men’s and women’s laughter in the background.

The girl with the fish developed a story where one fish had no color and another one with color came along. They had a conversation where the colorless fish acquired color and then the color ‘went too far.’ She experimented with the programming blocks to make the fish change color automatically. Another girl picked a fairy sprite

and created a 'psychedelic' background using multiple gradient effects. She called her fairy the 'mind control fairy' and made a short animation. The final girl made a two-character animation with a pre-made sprite and one she drew where the one she drew 'chased' the other one around the screen.

A couple of boys were interested, but the girls showed no signs of leaving. They asked if she would be back again so they could try. Tina and Beth weren't planning on it at first, but they said they'd try. They also said that Scratch is available on all Lake County computers and they could use them at any time on any library computer. Tina said that she works at the local branch, and that if they ever saw her at the library they could come get her and she would show them how. Tina and Beth also let youth know that Scratch was a free program and they could download it if they had computer access.

The building the session was in did not have internet access, so youth couldn't post their projects to the Scratch website or see other's projects. Tina loaded all of the projects on to a flash drive so she could upload the projects to the library's gallery later. Tina gave a number of the youth the url for the Scratch site, and the name of the library's gallery so youth could find their projects later.

After about an hour and a half, some of the girls finished their projects. Some started looking at the pre-loaded example projects in Scratch, and others left. One girl started helping another finish her project. As the computers opened up one boy (who Tina knew from Anime stuff at the library) sat down and started drawing an Anime character, but ran out of time before he could finish drawing the character.

As they were cleaning up we debriefed on the program. Tina stated how successful this program was, but that they will not be able to come back without grant-supplied funds for subs. She sees the library as a part of the community; as such she sees such off-site events as an integral part of her job to serve the youth of the community. Some of the youth who participated at the community center were youth who had had previous negative experiences at the library. By running programming in settings where a wider range of youth are comfortable, programming can reach more youth than holding sessions at the library and waiting for the youth to attend. Again, the parallels to story time arose. As was echoed in reflections by other participating librarians, regular programming for older youth is just not part of current library culture the way story time now is. Tina wondered how story time became an expected part of the children's librarian's schedules and if there were lessons learned from that experience that could help teen librarians integrate more programming into their job descriptions.

This session was unusual in a number of ways, although girls definitely participate in Scratch programming; they are usually in the minority. In Lake County, females represent 31% of participants overall. When programs take place in a separate room, there is a higher threshold for participation. Youth must either know about the program ahead of time, or walk into a room full of computers, and potentially full of

boys to opt in to Scratch. At the recreation center, the barrier was lower. The computers were set up in a space the girls already go to, and feel comfortable in, and they did not have to walk into another room. Another factor could have been that the first person to sit down was a girl. The girls at this session were very focused on the drawing and the story telling, the computer programming aspect came second. This fits with other research on girls' participation in computer related activities (Bernstein & Crowley, 2008).

Discussion

Staff at both sites are highly dedicated to providing high quality programming the citizens of their communities. However, they all perceive significant barriers to them doing their jobs well. With the exception of Beth, all expressed a deep weariness with the current situation of policies that did not make sense o them.

Drawing on Beth's experience teaching Scratch at an afterschool activity, Beth and Tina wanted to try to reach out to youth who would not opt in to a program at the library. By going to where the youth were, Tina and Beth were able to reach a different set of youth. Tina mentioned that a few of the girls who participated in the program would not talk to her because they had been kicked out of her library. These girls created meaningful computer programs and had a good time. If they had not been at the community center, these girls would have missed this opportunity.

Part of adapting to the 21st Century is reexamining policies created in the 20th Century. If 21st Century citizens need to be flexible and adaptable, so must the institutions they on which they rely. While policies must take computer security seriously, some policies inhibit meaningful use of computers. Getting Scratch and other free creative software onto library computers has been a major challenge at a number of the libraries that participated in this grant including Winchester.

Open lab sessions seem to work well for youth audiences with disparate skill levels and interest. These sessions are flexible and adaptable to the needs of the youth who attend. In an open lab session youth with highly developed Scratch skills can work side by side with a youth who does not even know where the space bar is. Without the pressure of a set curriculum, these two youth can both draw benefit from participating with out either feeling held back or feeling hopelessly lost. The two might even learn from each other. Ariel noted that the older youth were more comfortable with less direction than the younger ones were, so open labs might be more beneficial for older audiences.

The key to successful programs seems to be knowing how to draw youth in to the program. For the girls at the recreation center, drawing was the hook that got them involved. They started drawing, and then wanted to do more. Tina and Beth were adept at quickly figuring out what the youth would like to do, and when add in more.

One person may be ready to animate their drawing, but the person sitting next to them may not be, and that needs to be OK.

Youth who come to free library programming have a wide range of experiences with computers. Some may have a sophisticated understanding of programming, or creating media on the computer, and other may have extremely limited experience. Programming, and staff who lead programs, must be flexible and adaptable to simultaneously attend to all learners. This may mean preparing multiple iterations of the same project so it is accessible to novices and engaging for more expert learners. It may mean employing peers to help guide workshops and assist as necessary. It may mean deliberately pairing students with either similar or different skill levels to work together. For some learners, just being able to access a computer may be what they need. Open labs are a setting where a boy who cannot find the space bar on a computer can sit next to a girl with months of experience using Scratch and both can feel comfortable and challenged.

Recommendations

Based on the cases of Winchester Public Library and Lake County Library and the written reflections from all of the librarians participating in the project, it is clear that personnel are the most important factor in high quality programming. Jean, Ariel, and Jake work hard to put on meaningful, technology-rich programs for the youth of Winchester with few resources. Their job seems to be a battle between obeying policies created for another era and providing the services they know the youth in Winchester desperately need. With out computer fluency, youth will have a hard time finding stimulating jobs that pay a living wage. Beth and Tina also fight the odds to put on successful programs. They also serve their youth despite situations that make their work difficult.

As with many other public sector employees, librarians across the country have been asked to do more with fewer resources (e.g., staff, funding, resources, etc.). In Winchester, the library system has about a third fewer employees than they did a decade ago; according to Jean they are down to “a skeleton crew with a thin veneer of muscle.” People can only cope with this sort of stress for so long. Many of the libraries participating in the project had staffing changes, reassignments, or lack of supervisory structure that added more stressors to the situation.

The sense of weariness all participants expressed about the conflicts between their mission to serve their patrons and their libraries policies is disturbing. I got the sense that all participants, both in the case study and other participants, were nearing the end of their patience with this arrangement. All staff included in this study are valuable assets to their employers, yet they seem to feel underappreciated. Library administrators would be wise to pay attention to this weariness expressed by most of the participants in this project.

References:

Bernstein, D., & Crowley, K. (2008). Searching for Signs of Intelligent Life: An Investigation of Young Children's Beliefs About Robot Intelligence. *Young Children*, 225-247.

Phipps, M. (2009). *Media MashUp Formative Report: Organizational Change Interviews with Professional Audience*. Saint Paul, MN: Science Museum of Minnesota.

Resnick, M., Maloney, J., Monroy-Hernàndes, A., Rusk, N., Eastmond, E., Brennan, K., et al. (2009). Scratch: Programming for all. *Communications of the ACM*, 52(11), 60-67.
