Makerspaces in Libraries

Play, Discovery, and Collegiality

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Abstract

This work is an ethnography describing initial findings from a pilot study of makerspaces in two suburban Ontario public libraries. Methods used include participant observation, semi-structured interviews, and material or object probes (a modification of photo elicitation). Preliminary findings focus on how patrons or participants use these spaces, and are accompanied by recommendations based on those findings. Recommendations include the reduction of structure in order to make space for play and collegiality and the facilitation of discovery by making materials or equipment visible and accessible.

Keywords: Makerspaces, public libraries, libraries, 3D printing, ethnography, discovery, peer production, making

I started this project with a goal – for my research to be useful to librarians designing or administering makerspaces. I examined how people use makerspaces in public libraries and how the space, with its restrictions and its opportunities, impacts that use. Instead, three unexpected themes outside of that original intention emerged: playfulness, discovery, and collegiality. The presented work draws on a pilot study consisting of a series of six interviews, four observation sessions, and attendance at two introductory workshops conducted in suburban Ontario public libraries. Access for this study was graciously granted by the librarians administering makerspace programming. The following is a presentation of preliminary findings from this fieldwork. I also introduce some general considerations in implementing library makerspaces and programming.

Literature Review

Crawford Barniskis at the University of Wisconsin-Milwaukee is also working on an ongoing study of public library makerspaces. As part of that work, she recently conducted a discourse analysis
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asking which, if any, ideologies or uses were privileged over others (2015). Her analysis found the most common metonym, or bucket term, for makerspaces is 3D Printer. Like a mascot, the 3D printer serves as a tantalizing rallying point. Building on that, makerspace is also a metonym for what is really a network of people, programming, materials, and tools organized around a mandate usually associated with literacy or agency. Makerspaces are places, not necessarily clearly-bounded or walled ones, where people can convene to create, play, explore, learn, and peer-review, often with technology.

When you zoom into the literature on makerspaces in libraries, you find many practice-focused papers. This existing scholarship focuses predominantly on models for implementation (Pryor, 2014), space or tool-focused analysis (Hoy, 2013), or staff-focused research (Barniskis, 2014). Deeper research into participant motivation, uses, and impact is needed (Sheridan & Halverson, 2014). By focusing my research on patrons, I fit this project into that gap.

Research Methods

Because this project was a pilot study, it doubled as an opportunity to test out methods. I wanted to get a feel for which research approaches would work in these spaces. The primary method was observation as a participant in workshops, coupled with taking jottings and field notes (Emerson, Fretz & Shaw, 1995). Next came semi-structured interviews with staff and patrons built around grand tour, or high-level “introduce me to the space” style questions (Spradley, 1980) and object elicitation (DeLeon & Cohen, 2005). Within these interviews, I tried asking informants to draw an information horizon (Sonnenwald et al., 2001), but the method was not well-received. The informants were makers and doers: they were happier to show me their process than to map it out on paper. In terms of understanding how or why informants made something, DeLeon and Cohen’s suggestion to use material probes to prompt and motivate informants was very effective.

I also tried photographic inventory and diagramming (Hartel & Thomson, 2011; Collier & Collier, 1986), which were fruitful for description and my own recollection, but less so for analysis. That said, the use of visual methods is a skill, and experience in the area would likely lead to richer analysis.

Preliminary Findings

Theme 1 - Play

The first theme that emerged from the study was the idea of makerspaces as places of play. This first recording from my fieldwork hints at the importance not only of play, but also of discovery

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1 Informed consent was obtained from all interviewees; access to the space was granted through library staff; and approval for the research and methods was obtained through the Research Ethics Board of the University of Toronto. All participants have been assigned aliases.
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within these library makerspaces. During an interview session, a patron describes his motivations and processes for using the space:

[Mar 01 2016, Bill and I are discussing how he learns to use the tools available in the space, but delve into the ‘why’]

Bill: If I need something resolved, how do I think that through? And then you basically go out there. So that’s my, uh, Mr. Dressup. [points to cabinet (pictured in Figure 1)]

Me: Oh, that?

Bill: You know what I mean, tickle trunk.

Me: Tickle trunk?

Bill: Tickle trunk, that’s the tickle trunk, okay?

Me: Oh, that.

Bill: Exactly, that’s the tickle trunk, okay. So, when Mr. Dressup opened up the tickle trunk, yes? He had an idea of what he wanted for that episode and you pull it out, right?

Me: Hm-hmmm

Figure 1. The cabinet, or “tickle trunk”
Bill: But at the same time the very nature of the tickle trunk was all that imagination and possibility was in there?

Me: Hm-hmmm

Bill: Until he opened it up and he started doing it, you know, it wasn’t there. So it’s the same thing with this. You need to know that the possibilities are there, then it’s a matter of how do you connect all the pieces.

There are several key points that I wish to draw attention to from these field notes. First, it is notable that Bill describes a cabinet full of expensive equipment as a “tickle trunk”. *Mr. Dressup* was a popular Canadian children’s television show that ran from 1967-1996. In it, Mr. Dressup would often begin the show by pulling a costume or prop out of the tickle trunk. These finds would serve as the catalyst or inspiration for the remainder of the program as Mr. Dressup made related crafts or drawings, sang songs or read books. With his simply analogy, Bill gets directly at the feeling of playfulness so prevalent in this space.

Throughout my study, other patrons and staff repeatedly referred to tools as “toys,” or gave them cute nicknames - for instance, “The Great One” (a reference to Wayne Gretzky) was the name of a particularly large 3D printer. Study participants also used “play” or “play around with” to describe their interactions with the tools.

The point I wish to emphasize here is the way in which play permeates the space. Play being integral to creativity and problem solving is not a ground-breaking idea (Sutton-Smith, 1997). However, patrons and practitioners latched on to that idea, whether consciously or not, and integrated it into their use, programming and understanding of the space. This speaks to the appeal of the concept: People like to play. So, if the goal is to facilitate learning and creativity, and joy is an integral part of that learning and creative process (Gauntlett, 2013), then fostering that sense of playfulness is a good tactic.

**Theme 2 - Discovery**

Bill’s analogy also invokes discovery, my second theme. If Bill has a problem he needs to solve, he starts first with the tools available to him, or “the possibilities” and then “connect[s] all the pieces.” He does not begin with a plan and then seeks out the required tools, but rather assesses what is available to him and works (or plays) from there.

Discovery was evident in this next example from my field notes. At another library, my neighbour at an introductory workshop went from being a beginner to planning the designs for his own camera tripod in approximately two hours:

*[field notes and jottings, Feb 24 2016]*

My seat neighbor is a man in his 20s or 30s. He went from absolute beginner, “how do I log into this website?”, to downloading and then customizing plans for a camera tripod....
...As people wander from machine to machine, the conversation turns to ideas, what are they going to build next. “I’m thinking I could make a tripod, or just like a little stand,” says my neighbor, “one week I could print all the legs and the next week I could print the body, I want to try it,” and an informal session on how to use Google SketchUp pops up at the front of the room as Alex [a member of the library staff] starts explaining the tool to my neighbor and more just gather around.

This same neighbour insisted on trying to add a slot for his camera’s SD card into the simple keychain we were all making as part of the introductory workshop, before abandoning the keychain altogether to work on his tripod design.

This particular instance speaks to the importance of discovery in these makerspaces. I do not know my neighbour’s motivation for attending the workshop, but he was clearly new to the tools available. Yet once he had a basic understanding of how the tools worked – or, as Bill would put it, once he knew what the possibilities were - he jumped from being a beginner to acting as a planner and designer. The making and learning process begins, therefore, with awareness of the possibilities. The availability of the tools and a bit of explanation about how they work were all Bill and my neighbour needed to take a leap.

Maybe it comes down to their personality; perhaps the people who use makerspaces are the type who disregard the instruction manual or skip through a tutorial. However, there was definitely a pattern of this. Out of the 14 of us at this introductory workshop, only one attendee actually made the keychain. There were swords from the popular video game Minecraft, a piece of a model castle, a dragon, a phone stand, and a complex set of nested decahedrons (think of ten, nested ten-sided die) which the participant was printing because he “just wanted to see if [he] could” (see Figure 2 photograph).

The session participants were not learning how to make keychains. Instead, they were discovering that if you can customize and make a keychain, then you can customize and make many other things. The discovery of those possibilities was then a catalyst for future interest and possible use.

The importance of discovery is not a new concept for librarians: making things discoverable is kind of our thing. However, librarians tend to think of discovery in terms of catalogs or interfaces (Bates, 1989). In these examples, however, we can instead imagine the patron browsing or area scanning the tools and their capabilities in order to make serendipitous discoveries about what is possible. If the goal then is to facilitate learning and creativity through use, providing opportunities for browsing and discovery is key.

Theme 3 - Collegiality

The role of collegiality is illustrated in two examples from my field notes. I use collegiality as a term to describe the goodwill relationship between people who are united in a purpose (in this case, learning and creating), respectful of one another’s work, and the eager to help each other. In the first example, from the same introductory workshop, we all gather around to admire a fellow patron’s creation:
The night is winding down and our first successful print job finally completes. It’s the older woman’s. She made the keychain, the only one. Her initials emblazoned on it in blue. As she fondles it, just kind of passing it back and forth between her hands, she says "I’m just quite impressed, he said it would be brittle, but it’s actually quite strong." And you can tell she’s proud, she keeps rubbing it and handling it. Sometimes, she’ll put it down with a little pat, placing it on the table for all to see. We take turns passing it around in our hands, each giving it a similar level of inspection. She says, "I guess it could have been not so thick," and all of a sudden the brainstorming starts. Someone else suggests beveled edges so it’ll be smoother, another person likes the thickness, and someone else suggests a full fill (not hollow inside).

The role collegiality plays in both the design and making process, and how the interaction unfolds, is incredibly interesting. We start by admiring the creation: it is not until the original creator opens the floor to suggestions by saying, "I guess it could have been not so thick," do we start putting forward ideas for improvement. It is, for lack of another word, collegial. Returning to the role of collegiality, we can also see how the other patrons encourage future attempts by the creator and offer up possibilities for her to consider. By suggesting she try a “full fill” print next time, her colleague is assuming there will be a next time and encouraging it.

My second example takes place at a 3D scanning workshop. There was a blizzard that night, so only five of us were there, comrades in terrible weather. Two attendees, an older couple, had wandered in simply because their other event at the library had been cancelled.

Figure 2. The “just wanted to see if I could” decahedron
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[field notes, Mar 01 2016]

First, we scan Rick. Then, we try to scan the older man’s hand, but it won’t work. That’s okay. So, then we scan Marie, the security guard. She happily volunteers to sit as we circle her with the iPad and take a 3D rendering of her. We marvel as the software creates a wire frame of her...

...We spend a lot of time chit chatting, just talking about the technology and its possibilities. Some people are there as beginners, curious to learn about something new (older couple) and some are experts (Rick). We talked about: how one group member, a stage director, might use it for prop modelling; how another member uses 3D printing to make maquettes, rough drafts for larger sculptures; or, how you might use the scanning software to make avatars or mementos.

We spent more time on the brainstorming of future, possible uses for the tool than we did actually using it. Interesting here is the relationship between experts and novices, but also how the event evolves from a structured tutorial to playful experimentation (trying to scan different things and then roping in the security guard to join in) and finally discussion about and discovery of future possibilities for the tool. Like the first example from the keychain workshop, the discovery of possibilities discussed in the second theme plays out as part of the collegiality.

The main point here, illustrated by both examples, is not just that the interactions are collegial, but that the collegiality feeds discovery. By exploring and discussing possible uses for the tools, the interactions also assume future usage. Whether or not that future use actually happens is unknown, but the potential is at least considered, discussed, and encouraged. When organizing a workshop or group session, providing downtime or moments for interaction could help feed that process and possible future use.

**Conclusion**

How play, discovery, and collegiality are used by patrons and subsequently valued can serve as guidance for space designers and administrators. I set out with an original goal – I wanted this research to be useful for librarians designing or administering these spaces. And while my findings are very preliminary, I think my three emerging themes can be translated into two recommendations.

The first recommendation is to reduce structure, when possible, and to support playfulness and collegiality. Many of these catalytic moments were born out of initially structured interactions, but where these libraries and their patrons came alive were in the downtime moments: the chit chat, the clustering around tables, the willingness to abandon a workshop and try something else, and the opening up of access to equipment and tools for free discovery.

The second recommendation is to facilitate that discovery. That is, let patrons know what tools you have, and offer them examples of possibilities. Most people, at least in my observations, seem
to be starting from the tools (what can I do with what’s available?) as opposed to a preplanned idea. Because of this approach that patrons take, it is critical to let them know what those tools are, what the tools can do, and how patrons can access them. In other words, make the tools discoverable. The libraries I visited did this in various ways: by putting tools out on the floor as you would a photocopier or printer; publicizing how other patrons are using the space; adding tools to circulation; putting up signage with a list of equipment that’s available; or running flexible workshops designed to show off a tool, but not necessarily dictate its use.

Possible opportunities for future research include longer studies with a sensitivity to these themes. Or, if research resources are limited, there is room to do more focused research testing these recommendations: whether or not these moments of collegiality and discovery actually lead to future use; a comparison of makerspaces on a spectrum of structured to unstructured; and how the various discovery tactics listed above (publicizing how other patrons use the space, increasing visibility of the tools) affect usage.

References


