

## POSTERS

# Rural librarians' perspectives on makerspaces and community engagement

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## Abstract

This study investigates eight rural librarians' perspectives related to makerspaces, community engagement, and youth informal learning through cultural probes and semi-structured interviews. Preliminary findings through content analysis suggest the importance of aligning the librarians and the youths' interests in making to support learning within library-based makerspaces and highlight the need to support rural librarians to develop STEM competencies and strategic partnerships.

## KEYWORDS

community engagement, cultural probes, makerspace, rural public library

## 1 | INTRODUCTION

The maker movement— a community of people who make, tinker, and share their processes and products in physical and/or virtual settings— expands the role of public libraries towards sites of community engagement and knowledge creation (Koh & Abbas, 2016). While the role of makerspaces within public libraries has been discussed in the literature, it predominantly focused on urban libraries despite that small-town and rural libraries compose of 80.5% of public libraries in the U.S. (Real & Norman, Rose, 2017). Research indicates that rural libraries have different resources, skills, and constraints which impact their librarianship (Real & Norman, Rose, 2017). Without understanding rural libraries' resources (i.e., interests, expertise, constraints) and an explicit effort to align with their ongoing practices, the sustainability and impact of makerspaces in rural libraries is potentially lessened. In this study, we investigate the rural librarians' perspectives related to makerspaces, youth informal learning, and community engagement.

## 2 | METHOD

Guided by situated learning theory (Lave & Wenger, 1991) that recognizes librarianship as situated within their practices, prior knowledge, and culture, our research conducts a case study of eight rural libraries within Indiana through cultural probes (Gaver, Dunne, & Pacenti, 1999) and semi-structured interviews to identify the motivation for establishing a makerspace in the future and examine facilitators for and barriers to establishing library makerspaces. Guided by ALA guideline, we identified rural libraries without makerspaces that serve a legal service area population less than 25,000. We recruited eight full-time rural librarians. The participants were all females with 3 to 14 years of overseeing the youth services department.

Cultural probes enable researchers to enter into the local culture of participants. This approach was deemed appropriate given the difficulty to utilize traditional ethnographic approaches to capture rural librarians' practices that span across multiple settings and time. The cultural probes included six parts: (a) mapping, (b) youth learning landscape, (c) user diary (describe routines involved in

youth program design), (d) floor plan, (e) time capsule (share professional aspirations), (f) magic paper (imagine future library). The mapping asked participants to rate making activities four times from our provided list: (a) activities that librarians are interested in, (b) activities that youth are interested in, (c) activities that community members have expertise in, (d) activities that outside members have expertise in. After participants returned the cultural probes, the research team conducted hour-long interviews via Zoom. All interviews were video-recorded and transcribed. The research team inductively analyzed the cultural probes and the interview data using the method of content analysis.

### 3 | FINDINGS

Preliminary findings based on eight rural libraries highlighted the lack of design intention and understanding around the importance of facilitation in makerspaces. Eight librarians in our study considered makerspaces as an opportunity to increase attendance by providing STEM programs, provide access to various technologies, and engage community members in critical thinking and problem-solving. To achieve these goals, rural librarians focused on providing the space and the tools within the makerspace rather than articulating how they would facilitate the kind of engagement and learning they anticipated to emerge from the makerspace. One librarian mentioned: *"There's electrical kits and engineering kits... just have things there and organized and it would be open and clean and ready for someone to walk in... pull it out and work on it."* Another mentioned: *"I mean, kids come in and they can kind of just use imagination and use whatever we give them, you know. We sit in front of them and say, here, if you want to design something, make something."* Many librarians assumed that learning would naturally occur once youths were given the space and the tools. As many experienced lack of time to carefully design youth program (*"I don't have a day where I just sit and plan"*), librarians frequently used available lesson plans or crafts activities from Pinterest and online community groups: *"I try to just not recreate the wheel and steal someone else's programming"*, *"It's just trying to find out what's popular at the moment and incorporate that as much as we can."* As such, the routines and practices of rural librarians in our dataset did not reflect deep level of intentionality around youth program design.

Our analysis findings also demonstrated rural librarians' lack of STEM competencies and prior experience with makerspaces. One librarian expressed: *"My own comfort level with some engineering and math specifically, it is kind of low."* Another librarian mentioned: *"I fear*

*the technology so I don't lead it. It's terrible, I really need to step out of my comfort zone...but the way I generally choose the programming is what I feel comfortable leading."* As such, the most memorable making programs that many librarians in our study shared were related to arts and crafts: marshmallow toothpick challenge, knitting, tie-dye, canvas painting, gingerbread making programs. Findings from the cultural probes illustrated that eight rural librarians' areas of interests in making (e.g., crafts, sewing) were the opposite of what the youths may be interested in (e.g., robotics). This finding highlights the misalignment between the types of making activities that rural librarians feel confident and interest in and youths' interests within the community. Librarians engaged in partnerships to provide different making programs, but they were often one-off programs without strategic partnerships, as illustrated in one librarian's interview: *"I know...a man here that makes furniture. I've been able to pull some of our local vendors for a festival...but I haven't actually pulled anyone in to do any of that (relates to youths' interest)."* Additionally, the majority had limited prior knowledge and experience with different kinds of makerspaces, as highlighted in one librarian's remark: *"I see things through email and stuff of what people have in their makerspaces, but I personally haven't seen any real phenomenal ones...We're kind of sequestered out here...I don't know of anyone locally that has a big [makerspace] other than project-based programs necessarily."*

Our analysis further illustrated that eight rural libraries had the community members as assets who are willing to share resources. For instance, one librarian emphasized the feeling of small community in which community members donate materials to make things happen: *"They do look for what, you know, if we ask then they'll try and find it for us."* Another librarian described the willingness of her community members to volunteer to lead a program when the library took initiatives to reach out: *"It was like a guest readers' week. And I invited, you know...I invited the jailer from our, our jail, the EMS people...and I had the mayor as well."*

### 4 | DISCUSSION

The study findings point to the importance of aligning the librarians and the youths' interests in making to support learning within library-based makerspaces and highlight the need to support rural librarians to develop STEM competencies and strategic partnerships. An intentional design approach to creating a makerspace that addresses local community needs that considers how to facilitate and sustain learning practices within the

makerspaces—beyond provision of tools and the space—may be necessary.

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