Title: mini Maker Fest @ iConference '18

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Abstract:
This two-part SIE provides an opportunity for conference attendees to engage in playful and creative makerspace activities and stimulating critical discussions about the current status and future directions of research in information science related to the maker movement. During the first session, attendees will be invited to engage in hands-on design and engineering activities that provide a taste of the types of activities available in makerspaces. Participants will also be encouraged to use a mobile photography app to submit their creations to the mini Maker Fest Competition. The second session will be devoted to discussing opportunities and challenges involved in conducting research in makerspaces, as well as the use of photography as a research method to capture participant experiences. Key participants will be on hand in both sessions to facilitate engagement in makerspace activities and use of the mobile photography app, and to lead interactive discussions.

Description:

Purpose and Intended Audience:

Several equally important purposes of the mini Maker Fest are as follows:
1) To further discussions on challenges and opportunities of designing, implementing and researching makerspaces in information-rich institutions such as libraries and museums;
2) To introduce the PixStori app as a tool for research and engagement;
3) To discuss the challenges and opportunities associated with the use of mobile apps for visual and oral data collection;
4) To give participants a creative and playful outlet during the conference and active hands-on experiences with a set of maker activities and the PixStori app.

This SIE is intended to appeal to educators, researchers, and/or information professionals interested in learning about makerspaces as a research environment, as well as those looking to incorporate innovative mobile apps, photography, and/or oral documentation into their research or other activities.

Proposed Activities

Duration: Two ninety-minute sessions (preferably one near the beginning and one near the end of conference; alternatively, two sessions in the same day)

Session One

This session will begin with a brief introduction to research centering on makerspaces, and a tutorial in using the PixStori app.

The maker movement was initially promoted by MAKE: magazines to celebrate the grass-roots American culture and do-it- yourself (DIY) projects in 2005. Since then, an increasing number of libraries, museums, and universities have embraced the maker movement to implement makerspaces across the world. Makerspaces are places where people utilize all sorts of resources, from low-tech materials to emerging technologies, to design and create things. Makerspaces are also a social space for people to hang out and meet other makers. Previous research investigating makerspaces has found that people gain meaningful and hands-on learning experiences, develop interests in science, technology, engineering, art, and mathematics, and build collaborations among like-minded people through their participation in these spaces (e.g., Bowler & Champagne, 2016; Koh, 2015; Li, 2017; Li & Todd, 2016; Moorefield-Lang, 2015).

One tool that could be used to investigate makerspace participants' experiences is PixStori, a mobile photography app that combines still photography with audio recordings. Combined, the image and audio are called a PixStori, which can then be shared with others via social media, email, or by upload to a designated web portal (see Appendix for more information). The app has been used as a research tool in oral history projects (e.g., Frisch, Nguyen, Bernard & Menon, 2016), and an ongoing study of young children's information practices (Barriage, 2017), and also has other, non-research uses, including incorporation into museum exhibits ("Visitors share their stories", 2016), and documentation of special events, including conferences.

After this brief introduction to makerspaces and PixStori, participants will be invited to get creative! Possible maker stations at the mini Maker Fest include:

a. Pencil craft
   i. Using pencils and pipe cleaners to design and create personal pencil toppers
b. Pyramid building
   i. Using marshmallows and toothpicks to build a pyramid as tall and sturdy as possible

      c. Robotic arms
          i. Using sticks and screws to build a wooden robotic arm
      d. Raft building
          i. Using straws and tapes to design and make a raft to hold coins and see how many coins it can hold before sinking
      e. Marble roller coaster
          i. Using toilet paper tubes to design and build a marble roller coaster
      f. littleBits
          i. Using littleBits electronic building blocks to create inventions
      g. Lego & K'Nex
          i. Using Lego and K'Nex and be creative

Each maker station will include a brief set of instructions to help participants get started with the activities and PixStori. Participants will be encouraged to engage in these maker stations in pairs or groups of three. Participants can visit as many maker stations as time allows.

mini Maker Fest Competition

Participants will be invited to submit their maker creations to the mini Maker Fest Competition by creating and uploading a PixStori of their creations. Participants can download the app to their own devices or use one of the devices provided by session organizers. A PixStori web portal will be made available to session participants at the session itself and to all conference attendees via social media and potentially the conference website/program. All conference attendees, not just those who participate in this SIE, will be invited to vote on their favorite makerspace creations throughout the conference through ballot submission in a voting box set up at the registration table. Deadline for voting will be a few hours before the second SIE session.

Session Two

This session will start with a review of the previous session's activities, and the announcement of the winner of the design competition.

Additionally, attendees will be invited to discuss their experiences at the previous session, including making their creations and documenting these creations through PixStori. Questions that will be used to guide this discussion include:

● What was your favorite activity during the mini Maker Fest? What made it your favorite?
● What challenges or difficulties did you face in the process of making your creation?
● How do these activities inform the research process?
● What aspect of the PixStori app did you like best?

- What challenges or difficulties did you face in using PixStori?
- How could you incorporate PixStori into your own work?
- What skills or training would be important for researchers to have in order to best investigate makerspaces?
- What are the major takeaways from this session?

Depending on the number of attendees, these discussions may be whole group or small group based.

The session will conclude with an attendee Q&A period.

Relevance to the Conference/Significance to the Field:

Makerspaces have gained popularity over the past decade, with a growing but still limited body of research devoted to this topic. The mini Maker Fest will contribute to the field of information science as it promotes discussions on the design and development of makerspaces, as well as conducting research in such spaces. It will build an understanding of future research needs on this topic, and will also highlight the utility of innovative methods of data collection, such as PixStori, an app that has the potential to be applicable to a broad range of research projects and other activities relevant to the information science field.

Special Requirements: This session will require adequate space for multiple maker stations to be used during the session (several large tables with adequate spacing between each), a WiFi connection, and a projector and screen. Session organizers will provide material for maker stations and some devices to use PixStori, should attendees not have their own.

References

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Appendix

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