Librarians as Informal Learning Designers: a Framework for Facilitating STEM-Rich Making in the School Library

Aubrey Rogowski, *Utah State University* | Mimi Recker, *Utah State University;* Victor R. Lee, *Stanford University;* Kristin Searle, *Utah State University*

Introduction

- School library is positioned as a setting for encouraging informal Making (Subramaniam et al., 2012)
- Little is known about how librarians learn to facilitate informal Making and what factors influence how they implement programs
- Examine how they utilized resources and how those resources shaped the learning activities they facilitated

Figure 1 – Paper Circuit Program Guide

Methods

Participants

- Three rural middle school library media teachers (librarians)
- Each librarian implemented six STEM-rich Making programs over the course of 12 months
- Occurred before school, during lunch, or after school
- Used program guides to help plan and facilitate programming (see Figure 1)

Data Sources & Analysis

- Collected field notes, photographs, interviews, and other artifacts
- Two rounds of systematic coding (Saldaña, 2015)
- Codebook developed and used to generate findings

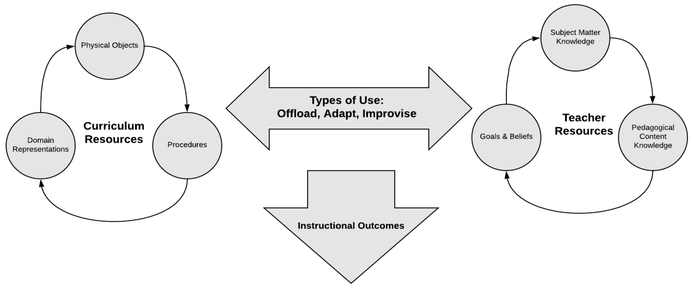


Figure 2 – Design Capacity for Enactment Framework, adapted from Brown, 2009

Existing Frameworks

- Drew upon existing literature on how classroom teachers enact curricula within formal learning environments
- Two frameworks: Design Capacity for Enactment (DCE) Framework (Brown, 2009) and Remillard's Synthesis of how teachers enact math curricula (Remillard, 2005)
- Premise is that teachers actively design what happens during instruction
- DCE framework (see Figure 2) identifies three aspects that influence curriculum enactment: 1) curricular resources 2) teacher resources, 3) pedagogical design capacity

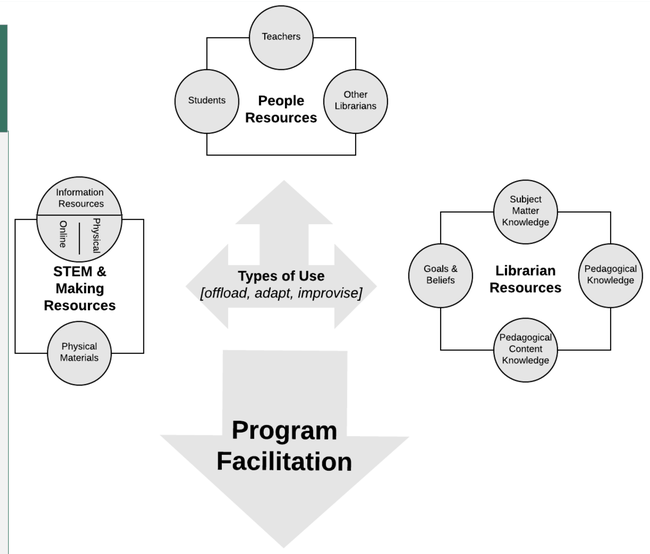


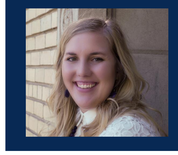
Figure 3 – Framework characterizing librarians' facilitation of Making activities in the school library

Findings

- Extended original Design Capacity for Enactment Framework to include several critical dimensions for non-classroom educators (see figure 3)
- Librarians need pedagogical knowledge
- Librarians draw upon ideas and resources of other people to bring STEM activities into library
- Librarians use a wide network of online and physical resources to facilitate STEM-rich Making in the library

Conclusions

- Teacher curriculum adaption frameworks were useful for understanding school librarians' facilitation of Making activities
- The extended framework (figure 3) helps provide a more comprehensive picture of what impacts how librarians facilitate informal STEM-rich Making
- A better understanding of current librarianship practices around Making and how they can be supported in the future



Aubrey Rogowski
Utah State University
Instructional Technology & Learning Sciences
aubrey.rogowski@aggiemail.usu.edu

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