CREATING A TECHNOLOGY SANDBOX IN AN ACADEMIC LIBRARY

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NORTHERN STATE UNIVERSITY

- Liberal arts college in Aberdeen, South Dakota
- Serves approx. 3,500 undergraduate and graduate students
- Offers 43, bachelor, 8 associate, and 9 master degrees both on campus and online (Northern State University)
ABOUT THE WILLIAMS LIBRARY AND STAFF

- Small staff
  - 4 full-time librarians
  - 3 support staff members
  - 3 part-time employees
  - Work study student labor

- Supports the university's vision of being a "student-centered institution committed to academic and extracurricular excellence, providing high-quality programs, cutting edge technology, and global learning opportunities" (Northern State University).
WHAT IS A TECHNOLOGY SANDBOX?

• The library wanted to better support the university's vision by creating a technology sandbox where students can go to gain hands-on access to new technology.

• The idea of the space came from the makerspace movement which "consists of a growing culture of hands-on making, creating, designing and innovation" (Peppler and Bender 23).
WHAT IS A TECHNOLOGY SANDBOX?

• A place where students and faculty can go to "play" with new and emerging technology.

• Includes specialized technology like a 3D printer, a SMARTBoard, Chromebooks, etc. in a open and discipline-neutral location.

• The goal of this space is to give NSU students an edge in the job market once they leave campus.

• Employers are looking for individuals who have strong "written and oral communication skills, ethical decision-making, critical thinking, and the ability to apply knowledge in real world settings" (Hart Research Associates for the Association of American Colleges and Universities, 2014).
WHY FOCUS ON EDUCATION MAJORS?

- The Education department is a source of great pride for NSU.

- More South Dakota teachers graduate from NSU than any other institution in the state (Northern State University).

- Focus group findings
  - The majority of students expressed that they did not have convenient access to educational technology.
  - The students expressed that they wanted access to a space that was open during hours conducive to their needs.

http://chattlibrary.org/events/tweenteen-focus-group-0
WHY FOCUS ON EDUCATION MAJORS

- Research supports the need for pre-service teachers to have regular access to educational technology.

- Pre-service educators often feel unprepared with using standard educational technology in the professional classroom (Weisner and Salkeld).

- Employer's expectations of new hires are often not met. (Weisner and Salkeld).

- Only 23% of the employers surveyed by the Hart Research Associates for the Association of Colleges and Universities believed that recent college graduates were competent in applying their knowledge and skills in the real world (4).
ROAD TO THE CREATION LAB

• In 2014 the E-Resources Librarian and Library Director began planning for the Creation Lab.

• Much if the research for the space was found through scholarly research and through articles created by MAKE, a company that works to connect makers together by providing information on emerging technology, updates on the makerspace movement, and information on how to use technologies like 3D printers.
ROAD TO THE CREATION LAB

• Why the library?
  • "By locating the service in the library, the tools are provided for all disciplines, and the potential is created for cross discipline collaborative learning"(Pryor, 2).
  • The library is open early in the morning and late into the evening.

• Where in the library?
  • The space chosen to house the Creation Lab is near the circulation and reference desks.
  • This space is highly visible to both patrons and staff and lends itself to student collaboration and staff supervision.
• Funding for the space came from the library's budget.

• Funds for the general upkeep and maintenance of the space come from a small fee associated with the materials used (i.e. 3D printer filament).

• The library has set aside a small budget to account for the need to upgrade and purchase new materials.
TECHNOLOGY

• During the 2016 Spring semester the library added a MakerBot Replicator Desktop 3D Printer, a series 800 SMARTBoard, two Acer Chromebooks, a 3Doodler Pen, and an AppleTV.

• Purchases for these products reflected research on emerging educational technology and requests from university staff.

MAKERBOT REPLICATOR DESKTOP 3D PRINTER

- 3D printing is a process for making a physical object from a three-dimensional digital model, typically by laying down many successive thin layers of a material (dictionary.com).

- 3D printers are valuable tools for artists, entrepreneurs, scientists, historians, and future teachers.

- The Makerbot was selected because of its unique user community, strong online support, and vibrant online repository of freely available 3D files.
SMARTBOARD

- The board was a request from the School of Education because of its large screen size and ability to promote student collaboration.

- By providing the SMARTBoard in a space like the Creation Lab, students have more open access to the technology.

- "These boards are very beneficial to student learning and engagement as well as teacher time and interaction with students" (BECTA, 3).

- An Education Communications report states that teachers need regular access to these technologies to develop skills and remain consistent with current teaching trends (3).
CHROMEBOOKS

- Chromebooks are inexpensive web-based computers, costing around $300.00 that operate using Google applications and cloud storage (Herold 10).

- Added to support the School of Education as an answer to the influx of Chromebooks in the professional classroom.

- By providing Chromebooks to the Creation Lab, students can check out, practice with, and develop real skills with the devices that will translate to their professional career.
3DOODLER PEN

• This resource allows users to create a small object by hand or enhance or tweak larger projects printed on the 3D printer.

• "Handheld version of the extruder element" found on most 3D printers (Flaherty, 5).

• Like a "hot glue gun, but shaped like a very thin marker with the ability to print a fine line of plastics"(Flaherty, 5).

• The pen was added as a tool to support the 3D printer.
APPLE TV

- An Apple TV is a streaming media player that can show video, games and web content onto a screen.

- The Apple TV was purchased to support the School of Education's iPad initiative.

- The School of Education developed an iPad initiative to support student teachers as they prepare for their teaching careers.
HOW THE TECHNOLOGY IS IMPLEMENTED AND DISPERSED

• Lab opened Fall 2016

• The space is open to all students who are in good standing with the library.
  
  • Students must first meet with a librarian to gain training for working with the 3D printer and 3Doodler pen.

  • SMARTBoard /AppleTV are first come first served

  • Chromebooks can be checked out for 2 hour in library use.

  • A guide was created to help students gain an understanding of the various equipment as well as direct them to supportive resources.
SUCCESES AND DIFFICULTIES

- Successes
  - Partnership with the School of Education
  - Students are excited to use the space
- Difficulties
  - Convincing other departments of the space's importance to campus
  - Slow purchasing process
PLANS FOR THE FUTURE

- Working with the School of Education to develop curriculum that will support current students.

- Hosting technology camps for area middle school students. It is the goal to have NSU education majors lead these camps so they have more hands-on experience with the technology.

- Hosting 3D printing informational sessions to any student who is interested in using the printer.

- Hosting workshops for area teachers.
QUESTIONS?


