

Kate Shivley, Lisa Jarrell and Dixie Denton

Ready, set, make!

Exploring library resources in a residential hall makerspace

I ncreasingly, the maker movement has spread across the nation in various contexts. Emerging from this movement are sites called makerspaces, which bring individuals together to create and learn collaboratively via engagement with resources and materials. Libraries are natural partners in the maker movement. At Ball State University, Bracken Library has access to collections and resources to support student making and learning. The library provides expert assistance, support, and resources for students in their homes (i.e., residence halls) and encourages both faculty and students to use the space for projects, presentations, and workshops.

This article explores new ways to engage students with the library. The Bracken Library's education technology department partnered with faculty members to create a makerspace in a residence hall, highlighting access to materials and training opportunities from the library—directly in students' homes. We also provide background regarding the rise of makerspaces, share our story pertaining to our partnership between the library and the residence hall makerspace, give details on off-site library workshops, and describe ideas and suggestions based on our first-year makerspace pilot.

Residence halls, makerspaces, and libraries: Informal learning spaces

In fall 2016, faculty members from Teachers College and Bracken Library partnered with the Living and Learning Community Programs (LLC) to pilot a makerspace in a

residence hall, where first-year students live together based on their majors. We saw a need to provide more access to early career preparation opportunities in an informal manner to our students in the Early Childhood and Elementary Education Living Learning Community (ELED-LLC). Ball State University's library provides supplementary programs across disciplines, including an education technology department and the Educational Technology Resources Collection (ETRC), aimed towards students majoring in education. ETRC provides students with resources they may need to plan lessons, create curriculum, or learn more about the resources available in education spaces. The head of ETRC acts as a liaison for the library to ELED-LLC and creates learning opportunities on-site and off-site to students enrolled in education-related programs. This includes offering access and information related to emerging trends in the field, such as the maker movement.

The maker movement describes a growing number of people (i.e., makers) engaged in creative production. Makers find physical and digital ways to share those objects with oth-

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ers. Maker ethos is rooted in the constructivist and constructionist learning theories, engaging learners in content and process.¹ Libraries, as long-time informal learning spaces, have also begun creating makerspaces for their communities. At Ball State University, makerspaces are emerging in colleges and residence halls. The library is immersed in this process by offering resources and expertise on-site to students and faculty.

The partnership between ETRC and ELED-LLC is a relationship aimed to create a space to enhance the learning experiences of first-year students. The ELED-LLC makerspace resembles a classroom and serves as a lab space for students to practice and experiment with teaching activities and content.² The connection between the library and the residence hall is not new. In fact, residence hall libraries have been a staple on some campuses since they were implemented at Harvard in 1928.³ The residence hall connection has been rediscovered as academic libraries place increasing emphasis on outreach and student engagement.

For example, we wanted preservice teachers (i.e., first-year ELED students) to make a connection with the library resources early in their professional development. Residence halls, student unions, and other non-library spaces have become spaces for librarians to “meet students where they are,” offering assistance and information about library services.⁴ There is limited literature about the ties between librarian connections in the residence hall, academic success, and information literacy. The connection between LLCs and libraries is ideal for collaboration between librarians, faculty, and residence hall staff. Megan Egbert, in her book *Creating Makers*, describes the information

needs of makers and emphasizes learning happens as makers run into problems they need to solve.⁵ Imparting these skills to students requires teaching faculty and librarians work together.

Residence halls as resource hubs: Lending resources off-site

Sparkling the imagination and creativity of future teachers is crucial to their success and to the success of their future students. The makerspace is an integral part of this process because it exposes students to the creative process of teaching. It is also an effective way to connect students to the large collection of education-related materials. We designed the ELED-LLC makerspace to be a site where students have a safe place to experiment and fail as they learn to create engaging learning experiences. At Ball State University, the ELED-LLC makerspace and ETRC are natural partners in creating a unique learning experience for preservice teachers.

Our first year of the collaboration was successful overall. The librarian on our team noticed a need to link the library materials more closely to the students’ experiences in the makerspace. In order to offer access to education resources in students’ homes, the residence hall director installed lockers to create a lending hub from the library. The lockers were accessible via student IDs and passwords.

Students used the items from the library to supplement their maker experiences in the makerspace. For example, students checked out video game making kits and computer making kits, while using the makerspace in their home. In addition, our librarian offered two hands-on presentations to learn about how to find these



Figure 1. Library hosted workshops to introduce new technologies and applications.
Photo credit: Kate Shively

resources either at the library or their ELED-LLC makerspace. The presentations were held during one class meeting and the other as an informal meeting at the ELED-LLC makerspace, where students activated their IDs and were given their passwords in order to gain access to the lockers.

Library hosted workshops in residence halls: Librarian home visits

In addition to the locker system, Ball State University's Bracken Library hosted workshops in the residence hall makerspace, which explored new technologies during the Fall semester of 2016 (see Figure 1). The workshops were provided to students as part of the makerspace's fireside chats series. The fireside chats were hosted by LLC and offered dinner and a discussion about students' career topics. The library was involved as a partner to introduce resources and provide training.

The resources our librarian introduced were known pedagogical kits in 21st-century classrooms: circuitry kits, a Makey-Makey kit, a Raspberry Pi, and video game making kits (see Figures 2 and 3). This workshop focused on the use of electrical tools in elementary classrooms. To plan for this workshop, roughly four-to-six weeks prior to the workshop, faculty contacted the librarian and asked if she could lead the fireside chat. Immediately she responded with a resounding "Yes!" She planned our workshop and provided ideas to student volunteers

to help lead each station.

Engaging the students as cofacilitators

situated them as early professional development leaders. Some volunteers provided lesson plan ideas, step-by-step instructions, and even suggestions for how it might connect to elementary curriculum. Volunteers and student participants mentioned this opportunity offered them experience learning about technology they did not know existed and mentioned possibilities to use later in their program and field.

The consensus from the students, faculty, and LLC coordinator about the workshops was a feeling of enthusiasm by the average turn out (e.g., 25 students)

and requests for similar events. The library has continued to host events at the LLC makerspace. For example, the librarian hosted 30

students during Coffee and Canvas—an event in which students make and create art using the materials and supplies in the makerspace (see Figure 4). The library provided inspiration by lending several cultural objects as inspiration for student art, including traditional art from the United States and around the world. The library's informal involvement reminds students about education resources they can borrow for their classes and field experiences.

Ideas and suggestions

When creating a makerspace on campus, it's important to be aware of the resources available.⁶ Engaging with the university library

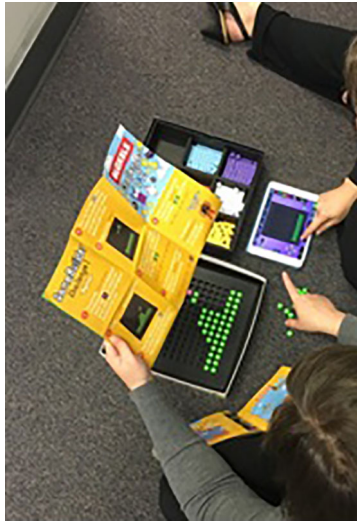


Figure 2. Exploring video game making kit called Bloxels. Photo credit: Kate Shively



Figure 3. Students exploring circuitry using Snap Circuits. Photo credit: Kate Shively

offers reciprocal benefits—both the LLC makerspace and the university library want students to participate, engage, and interact with their programs and events. These shared interests naturally create a foundation for a strong partnership.

Our relationship developed when we invited the library to offer education resource training to our students as a part of our course syllabus. This interaction created a bridge to communicate about how to engage students with the education resources more frequently, which later lead to the idea of bringing resources to the students by creating a lending hub in the makerspace residence hall. We advertised rotated library items at the makerspace. It might be helpful if the library could also advertise the workshops and alternative locations for lending items via their team, too. Promotion of the fireside chats and workshops increased the likelihood students will attend the informal professional development opportunities. Faculty engagement with libraries helps further extend knowledge of the library resources across courses and living spaces. As a result, libraries are advertising their services to those who should be visiting them.

In the future, we think university libraries can explore the possibilities of creating a space for making onsite, offering students multiple makerspaces with different purposes across campus. One suggestion is to create stations with innovation challenges throughout the library. The stations can include books, education resources, and other materials and artifacts related to the challenge. Perhaps propose a friendly competition between students, faculty, staff, and commu-

nity members via this innovation challenge. How might these types of hands-on, maker activities assist the library with its goals? How might it engage faculty and students beyond the classroom and residence hall events? The possibilities to further expand this partnership are limitless. One only needs a little inspiration, some enthusiasm, and eager students, librarians, and faculty who are looking for creative ways to develop professionally, and personally. And on a college campus, one might hope this is more likely than not.

Final reflection

Organizing residence hall resource lending hubs and informal workshops situates the library to invite patrons to future events at the library. Thinking creatively about how the library can be involved in the student living community can bring students and faculty together with the purpose of professional development. The library's role in a residence hall's makerspace brings possibilities to spark interest in students' overall develop-

ment as future professionals. The residence hall makerspace can bring a wide variety of people together for various purposes, including our librarians, faculty, and students.

The role of the library is to make connections within the community. The connection to the library increases students' knowledge about resources available for them by supplementing the space with resources from ETRC. In addition, students get to know their librarian in a social space, breaking down the barrier that often exists between the library and students. We also hope students will consider

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Figure 4. Coffee and canvas event held in the Residence Hall Makerspace. Photo credit: Kate Shively

Abroad: What our students are learning, what they're not, and what we can do about it (Sterling, VA: Stylus Publishing, 2012): 4.

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6. Kayo Denda, "Study abroad programs: a golden opportunity for academic library engagement," *The Journal of Academic Librarianship* 39 (2013): 155–60.

7. Sarah Faye Cohen and Andy Burkhardt, "Even an ocean away: Developing Skype-based reference for students studying abroad,"

Reference Services Review 38, no. 2 (2010): 264–73.

8. Ellen H. Hammond, "Internationalization in higher education and global access in a digital age," *Library Management* 30 (2009): 88–98.

9. We use "off-campus students" and "study abroad students" interchangeably. Colby College refers to this group of students as "off-campus students," but to differentiate from distance education or commuter students, we use "study abroad" to capture the long-distance yet temporary nature of their research projects and study experience. ❧

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their future collaborations with school librarians as teachers in their future classrooms.

Notes

1. Erica Rosenfeld Halverson and Kimberly M. Sheridan, "The Maker Movement in Education," *Harvard Educational Review*, 2014: 495–504.

2. Kate Shively, "Reflections from the Field: Creating an Elementary Living LearningMaker-space," *Learning Communities Research and Practice* 5 (2017): no. 1, Article 3: 1–14. Available at <https://washingtoncenter.evergreen.edu/lcrjournal/vol5/iss1/3>.

3. Gail Oltmanns and John H. Schuh, "Purposes and Uses of Residence Hall Libraries," *College & Research Libraries* (1985): 172–77.

4. Phyllis Rudin, "No Fixed Address: The Evolution of Outreach Library Services on Campus," *The Reference Librarian* (2008): 55–75.

5. Megan Egbert, *Creating Makers: How to Start a Learning Revolution at Your Library* (Santa Barbara, California: Libraries Unlimited, 2016).

6. Shively, "Reflections from the Field: Creating an Elementary Living LearningMaker-space." ❧

("Outreach engagement . . ." continues from page 368)

3. George B. Adams. "Badge Pin or Button," New Jersey, 1986, <https://www.google.com/patents/US564356>, accessed December 12, 2017.

4. Kate Jagers, "10 Ways to Celebrate Maker Culture," *Library LinkNJ*, <http://librarylinknj.org/techex/10-ways-celebrate-maker-culture>, accessed December 4, 2017.

5. "Badges to Buttons: Students write about 'Images That Shock,'" Duke University Libraries, <https://blogs.library.duke.edu/blog/2014/06/05/images-shock/>, accessed December 4, 2017.

6. Kelsi Evans, "Intern Report: Archive Your Pride Event Planning," brought to Light Stories from UCSF Archives & Special Collections, <https://blogs.library.ucsf.edu>

</broughttolight/tag/button-making/>, accessed December 4, 2017).

7. Anne T. Switzer. "Redefining Diversity: Creating an Inclusive Academic Library through Diversity Initiatives," *College & Undergraduate Libraries* 15, no. 3 (2008): 280–300, <https://valenciacollege.edu/faculty/development/coursesResources/documents/RedefiningDiversityLibrary.pdf>.

8. Megan Lotts, "Low-Cost High-Impact Makerspaces at the Rutgers University Art Library," *Art Documentation: Bulletin of The Art Libraries Society of North America* 36, no. 2 (2017): 345–62.

9. Ibid.

10. Ibid. ❧