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Creating a Virtuous Circle of Student Engagement with the Tech Corner

Brian R. Shuck

University of Nevada, Las Vegas

Susan B. Wainscott

University of Nevada, Las Vegas, sue.wainscott@unlv.edu

Jennifer Church-Duran

University of Nevada, Las Vegas, jennifer.church-duran@unlv.edu

Darcy C. Del Bosque

University of Nevada - Las Vegas, darcy.delbosque@unlv.edu

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Creating a Virtuous Circle of Student Engagement with the Tech Corner

Abstract: While many academic libraries have followed the public library lead in developing makerspaces, not all libraries have the money or space to dedicate to such large-scale operations. This case study explores a different approach to engaging users with new technology and investigates how to support their creativity without a costly investment in space and staffing. It demonstrates not only how students can be provided a virtual space to explore technology equipment, but also how their opinions can be leveraged for growing the collection and creating training materials.

Keywords: technology, maker space, collection building, student engagement, independent learning

Authors' note

Brian Schuck, Head of New Media (retired), brschuck66@gmail.com (ORCID orcid.org/0000-0002-5616-064X)

Susan B. Wainscott, Engineering Librarian, sue.wainscott@unlv.edu (ORCID orcid.org/0000-0001-9994-0956) *corresponding author

Jennifer Church-Duran Head, User Services, jennifer.church-duran@unlv.edu (ORCID orcid.org/0000-0002-7989-8698)

Darcy Del Bosque Teaching & Learning Online Education darcy.delbosque@unlv.edu (ORCID orcid.org/0000-0002-2716-8984)

All affiliated with the University of Nevada, Las Vegas Libraries

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Library users and their expectations for services and collections have changed. Sometimes patron expectations move faster than the library can adapt. Librarians at the University of Nevada, Las Vegas Libraries have been aware of the makerspace movement for quite some time, but circumstances have prohibited the library from developing a true makerspace within the library building. The Tech Corner was created as a way of meeting the desires of students for a makerspace, without the need for a dedicated space within the building. Additionally, the Tech Corner incorporated some of the philosophy of the makerspace movement, especially by trying to have students drive the decisions for what equipment would be purchased for the collection.

The University of Nevada, Las Vegas's (UNLV) Lied Library is situated in the heart of an urban campus with an enrollment of over 28,000 students, approximately 83% of whom are undergraduates and with a relatively high percentage of commuter students. Living in a metropolitan area with a population of over 2 million, UNLV students have access to a few makerspaces, including offerings from the Clark County Public Library. For instance, the Community Tool Chest (<http://www.communitytoolchest.com/>) provides woodworking and metal-shop equipment, and the Henderson SYN Shop (<https://synshop.org/>) provides a wide variety of making and crafting equipment and programming, plus cryptography and digital security workshops. There are also various informal groups in the community who meet to discuss and learn using social networks such as MeetUp.com. The entire community can also attend an annual mini Maker Faire (<http://www.makerfairevegas.com/>).

The UNLV campus also hosts spaces providing students access to and support for newer,

non-traditional resources. The Architecture School, the Mechanical Engineering and Electrical and the Computer Engineering departments make lab spaces available to students working on class projects, student organizations, and potentially also to students outside of the departments who are aware of the resources and willing to ask. However, the availability of these spaces and their equipment are not advertised to campus. The UNLV Office of Information Technology sponsored the first hacker challenge for campus in the summer of 2016 (University of Nevada Las Vegas, 2016).

In 2015, the STEM Librarian, Susan Wainscott, and Head of New Media, Brian Schuck, began discussing the possibility of developing a new collection of high interest, cutting-edge electronic devices for students to meet the needs of a maker community, without an actual space available. Using the library to house this collection ensured that it would be available on evenings and weekends and be available to all students regardless of course enrollment or academic program affiliation.

Innovation

As described by Burke, in the last decade, the Maker Movement has grown from a dispersed group of independent arts, crafts, and tinkering spaces connected by a popular magazine launched in 2005, *Make*: (2014). The Maker Movement now includes a number of facilities housed in public libraries, public schools, commercial or cooperatively run membership facilities, engineering programs in colleges and universities, and a growing number of North American academic libraries (Colgrove, 2016; Groenendyk & Gallant, 2013). In a search of the websites of the top 127 engineering programs in the 2014 *U.S. News and World Reports* ranking, Barrett et al. (2015) located 35 makerspaces. Of these, only five were clearly limited to the engineering program, and many were located in library facilities open to the campus community.

In a 2013 survey of many types of libraries, Burke (2014) received responses from 109 that either had or were planning to launch makerspaces soon, and 38 (35%) of these were academic libraries. The maker community within local areas also periodically gathers in conferences known as Maker Faires™, organized and branded by the Make Magazine company since 2006 (Donahue, 2015). In 2014 a National Maker Faire was also established in Washington, DC (“Nation of Makers,” n.d.).

As defined by Burke, makerspaces are in essence any place where “making happens” (2014, p. 22). Features of most makerspaces include shared and collectively curated tools and equipment, ways to co-work and informally learn from other participants as well as to learn independently through exploration, and a way to share knowledge about the tools and materials and what is made with the rest of the participants. As the name implies, most examples include a facility, either dedicated or set up for making to occur only for a set period of time within a finite space (Burke, 2014). Makerspaces have gone mobile, and the San Jose Public Library has created a guide and associated lesson plans for maker activities in the K-12 system (Berman et al., n.d.; San Jose Public Library, n.d.) that includes kits that can be taken to offsite locations.

However, one advocate for the maker movement within education, Aspinall (2016), recently made a renewed argument that maker culture is not defined by the space, the activity plans, or even the equipment or supply list, but is instead a culture or state of mind among makers. Based upon experience leading a makerspace in a K-12 library, Aspinall (2016) argues that staff and instructors must adopt a fully “student centered” (para. 2) mindset when approaching a maker experience, they need to “let go” (para. 8) and provide just enough structure that the students can explore, create, and do unexpected things. Also, “Makerspace and maker culture rest on the notion of risk taking, trial and error, a freedom to fail and passion

projects.” (Aspinall, 2016, para. 5). The outcomes of time and energy spent engaged in maker culture appear to be unpredictable and dependent upon the intrinsic interest and goals of each person so engaged. Aspinall also suggests that in an instructionally focused makerspace environment, the curriculum be modified to a “spiraled curriculum where different students demonstrate different expectations at different times” (2016, para. 11). One student may explore what can be done with an item and another may practice to achieve mastery of a difficult task deemed worthy of attention. Clearly this culture and approach is vastly different from an experience with a common learning outcome that ties directly to a program curriculum.

In industries that use design thinking or creative problem solving, exploration and simple experimentation to test ideas and generate new approaches are valuable activities. Innovativeness and creative problem solving abilities are employee characteristics that are important to organizations (Anderson, Potočnik, & Zhou, 2014). Incorporating this sort of skill building into course activities and assignments takes considerable effort on the part of instructors and may occur only in capstone courses. However, the activities of play and recreation may engage the intellect in a similar manner, and in a low-stakes environment. Resnick, director of the MIT Media Lab, states

With making, it’s not about learning specific concepts. It’s about different practices, strategies of designing, creating, thinking. Similarly with coding, it’s less about just learning about variables or conditionals. It’s more about strategies for designing, creating, debugging (Resnick, Eidman-Aadahl, & Dougherty, 2016, p. 236).

The IDEO design consultancy has achieved a measure of fame for their approach to the design process that explicitly incorporates play (Cook, n.d.).

Doodling, drawing, modeling. Sketch ideas and make things, and you’re likely to encourage accidental discoveries. At the most fundamental level, what we’re talking about is play, about exploring borders (Kelley, 2001, p. 109).

While other design processes also use words like “play” to describe the testing/modeling/simulation running phase of a more traditional engineering problem-solving approach (Dodgson, Gann, & Salter, 2005; Schrage, 2000), exploring the capabilities of a device or material can be part of an opportunistic innovation design process that is not tied to a predefined outcome simulating a client need. A recent National Academies publication states that participants in a national discussion about innovation “agreed that innovation occurs at the interfaces of disciplines and requires the synthesis of knowledge from different fields” (National Academies Press, 2015, p. 13).

Innovation skill development ought to encourage curiosity and communicating and collaborating with others in a variety of disciplines, something not often afforded in a typical undergraduate course. In the 2015 National Academies Press report, *Educate to Innovate*, Varun Soni is quoted discussing the importance of the university experience “outside the classroom” as the places where “transformative moments” (pp. 34-35) occur and also states “The space inside the person is the contemplative space...where the best innovative thinking happens” (p. 35). It seems that neither transformation nor contemplation is likely to occur while addressing timed tasks or assignments within the structured classroom setting, but may be nurtured within the spaces between course obligations, in those “third places” (Oldenburg, 1997, p.16) such as libraries and dorm lounges.

The argument for nurturing hobbies or creative down time for students also is bolstered by research from occupational psychology. In a survey of a sample of U.S. Air Force active-duty captains participating in a required leadership development course (Eschleman, Madsen, Alarcon, & Barelka, 2014), respondents who reported engaging in creative activities, broadly defined by participants (arts and crafts, music, writing, as well as creative problem solving, etc.)

outside of work had an increase in attributes associated with improved job performance. These creative relaxation pursuits (hobbies) may also allow for mastery of skills that are related to job tasks, or simply provide an opportunity for the participants to feel more control over a portion of their lives and this may translate to more positivity in general, including at work. It is not uncommon for academic libraries to provide “study break” programming during stressful times of the academic year, and these programs can include art or craft activities (Meyers-Martin & Borchard, 2015). A maker culture and associated space, collections, and/or services would provide for opportunities such as these year-round and allow for advanced skill development if a student were interested.

Informal Learning

As noted earlier, a makerspace is not defined by a specific set of tools or technology, but is an atmosphere that fosters a participant’s ability to experiment and encourages a mindset of creation, community, and collaboration (Library as Incubator Project, 2013). Public libraries have modeled this concept for centuries. From quilting circles to children’s workshops, libraries have offered space and social connection for engaged, self-directed creativity. It is not surprising, then, that public libraries championed the modern Maker movement from very early on. In fact, many authors credit the first 21st-century makerspace in the United States to the Fayetteville Free Library in New York. In 2011, Fayetteville’s efforts were inspired by the existing, restricted-use spaces like MIT’s FabLab, but with the goal of giving access to a much wider audience (Britton, 2012). Since 2011, public libraries nationwide have explored variations on this theme, repurposing space and offering media production labs, 3-D printers, woodworking lofts, and more. Every local implementation is profoundly shaped by the character of the community the library serves. For some libraries, it means 3-D printers and media production

equipment, but for others it could mean sewing labs or ceramics materials and a studio.

In a 2015 *New York Times* article by P. Brown, R. David Lankes, a professor in the School of Information Studies at Syracuse University, stated that the most recent economic turndown forced public libraries to “look locally to prove their value” (p. A12). He noted that the best way for public libraries to serve their communities is to know them and provide options that “look like them. For some, that means 3-D printers. For others, it means fishing rods” (Brown, 2015, p. A12). One striking example of this relationship between the community served and the space offered is the “Culinary Literacy Center” at the Free Library of Philadelphia. This innovative space is designed to enhance culinary literacy; build individual skills through interactive, community-focused workshops and demonstrations, and to help combat childhood obesity. It has a 36-seat classroom and a flat-screen TV for close-ups of chefs preparing healthy dishes (Free Library of Philadelphia, n.d.).

It is precisely this desire to understand and support the needs of the community that drove public libraries to find ways to support the “makers” both inside and outside of library “space.” One of those companion services is the growth of the “library of things” (unique collections of circulating objects, tools, and other items). These collections are intentionally selected, curated, and circulated to empower patrons to do, to make, and to create (Enis, 2016). Public libraries have been called the “the original sharing economy” and have long circulated not only books and magazines, but music, movies, art prints, and more. As result, it is possible to see the expansion of non-traditional collections as a natural progression of this role. However, services like Sacramento (CA) Public Library’s “Library of Things” and the “Stuff-brary” in Mesa (AZ), could also be argued to instead represent a “broad cultural shift” brought on by the libraries’ need to redefine their role and their impact (Brown, 2015, p. A12). In this evolving model,

libraries facilitate the patron's ability to implement, practice, and engage in hands-on, self-initiated learning, anywhere and on their own schedule. Overall, the examples of "stuff" now available for checkout are as varied as the communities served. At the Oakland Public Library in California, patrons can check-out power and hand tools, along with the more typical DIY and home improvement books or DVDs (Oakland Public Library, 2015). The Lopez Island Library (Wash.) along with others, now offer musical instruments such as keyboards, violins, and ukuleles provided through collaboration with the Lopez Island School of Music Advocacy Foundation (Lopez Island Library, n.d.). In southern Connecticut, the public library in North Haven has over 225 types of cake pans and several sets of cookie cutters available for checkout (North Haven Memorial Library, 2015). Meanwhile the Ann Arbor District Library provides extensive collections of tools for engaging in art, music, home repair, and scientific exploration. The science tools include telescopes, portable digital microscopes, anatomical models, and backyard bird cameras. Most of these are items many patrons cannot afford to buy on their own (Ann Arbor District Library, 2016). It is common for these libraries to offer patrons the chance to contribute ideas for new "things" and to vote on which items should be included, to "give people a sense of ownership of the library," said Rivkah K. Sass, the executive director of the Sacramento Public Library in California (Brown, 2015, p. A12).

All of this activity is interwoven with a larger theme in public libraries. For more than a decade, libraries have placed increasing emphasis on building a "customer-driven" library in order to contend with retail and online competition (Woodward, 2009). In comparison to this cycle of outreach, experimentation, assessment, and innovation, research and academic libraries have been a bit slower to join the party. However, this same user-centric approach is gaining ground in academic libraries, with more importance placed on understanding needs and fostering

experimental ways to further user-inspired innovation in academic libraries. This means making that fundamental shift away from “library logic” and over to “user logic” or looking at what is meaningful for the student or patron instead of what is customarily meaningful for the library or librarians (Harbo & Vibjerg Hansen, 2012, p. 3).

Coupled with trends in higher education that center on experiential or hands-on learning models, academic libraries are now experiencing a broad cultural shift similar to their public library brethren. The result is more planning for and provision of collaborative spaces and unique circulating “things” like technologies and tools that allow students to pursue their own ideas and direct their own learning. These efforts are spurred on by a desire to help students transform from mere consumers of content to actual creators and developers. Providing opportunities for informal, non-coursework, or research project-related learning is not unheard of in academia. Library collections are generally open to the entire campus, with the exception of course reserves, the use of which is on the decline (Pollitz, Christie, & Middleton, 2009). Catalogs facilitate exploration and discovery across disciplinary boundaries, leisure reading collections are being added and marketed in academic libraries in response to users’ requests and to encourage the continued use of academic libraries (Dewan, 2010), and academic libraries’ computer use policies often do not limit what patrons view or use within Internet browsers (“Libraries and the Internet Toolkit,” n.d.). Some libraries with media collections and other technology devices have also taken a broader view of the potential user base and the utility of the items (Hahn, Mestre, Ward, & Avery, 2011). Providing opportunities for students to learn or explore beyond their currently enrolled courses can be consistent with the mission of academic libraries.

Filar Williams and Folkman (2016) note that launching academic library-based makerspaces and embracing the maker culture will require leadership and training for academic

library staff. The authors successfully implemented a hands-on training program for library staff to learn about common makerspace equipment and making techniques, as well as the change-embracing, informal style of learning and collaboration often found among the users and staff of successful makerspaces (2016). Constructivist learning theory suggests that each learner will use his or her existing knowledge and worldview as a starting point to add additional knowledge, context, and meaning in a unique and independent fashion based upon experiences, both through individual learning and social interactions (Booth, 2011). Maker culture embraces this individualized, learner-centered approach and nurtures the curiosity and independence that helps learners help themselves (Larson & Rusk, 2011). Providing trained staff who can serve as facilitators for learners should also boost the amount of learning and mastery that a makerspace user can achieve. However, expert staff should be trained in providing just enough support to allow users to explore and discover unexpected and creative uses of the collection items. The benefit of maker culture is that it allows for experimentation, failures, and hands-on learning by doing. These expert staff, in other words, should also be makers (Filar Williams & Folkman, 2016).

Involvement

How can an academic library design a makerspace facility or collection that is responsive to its unique population of students? Draw from the customer-driven approach of public libraries, and ask them. While some academic libraries have established student advisory boards (Deuink & Seiler, 2009) that could be consulted, there are several other commonly used forms of direct student input such as surveys, focus groups, and the collection of data about requested items at service points. For design of an expanded media-device collection to support a learning commons, one academic library enlisted focus groups drawn from a variety of student groups on

campus and an email survey to the undergraduate students (Hahn et al., 2011). This type of direct request for recommendations on new collection items, instead of the all-too-familiar request for feedback on existing materials, has the potential to more deeply involve students with their library. Browndorf (2014) describes how such involvement may lead to a sense of ownership in the library and campus, and “to strengthen student preparedness to participate in the global cultural commons” (p. 78). This work builds on the learning-commons movement among academic libraries (Turner, Welch, & Reynolds, 2013) and recommends libraries consider stretching toward the communicative-commons model of Birdsall (2010). This model considers library engagement as one possible starting point for students to become involved in society in general and 2.0 participatory culture in particular.

There are also potential benefits to campuses which provide for such involvement. The student involvement model of retention (Astin, 1975, 1993, 1999) proposes that student engagement with campus programs and faculty/staff is related to increased rates of timely completion. This data-derived model proposes that students who expend effort to be involved in their campus are more likely to develop a sense of community or ownership of the college/university, to stay engaged with their studies, and thus to graduate. The data showed a correlation between campus involvement and completion of degrees within 4 years (Astin, 1993). In his 1999 work, Astin states that when using this model/theory “...all institutional policies and practices — those relating to non-academic as well as academic matters — can be evaluated in terms of the degree to which they increase or reduce student involvement” (p. 529).

Therefore, while not course-related, it is possible that engagement with students to develop the collection, recommend new items, and vote on new items may help to increase a student’s involvement in and connection to the university and improve their chances of

completing a degree. Simply using the collection and thus viewing a campus unit as a resource that supports their hobby or recreational needs may have a similar effect. Tinto (2002) speaks to the need for a campus seeking an increase in undergraduate retention to provide “...settings that provide academic, social, and personal support” (“Promoting Persistence in College,” para. 5), not simply curricular support. Tinto also describes how such settings and services must “center, not marginalize, students on campus” (“Promoting Persistence in College,” para. 5), and offering a makerspace or maker collection within a library that is physically located in the heart of campus achieves this.

Background and Chronology

Not long before the UNLV Libraries’ exploration of a maker-inspired collection began in 2013, the libraries reorganized and split the Media and Computer Services department in two: the User Services Department, responsible for the service desks (Circulation, Research & Information, Computer Help, and Media Resources); and New Media, charged with overseeing the Media Lab (with computers and equipment for multimedia digitizing and editing) and ensuring efficient access to the physical and streaming media collections. Among the other charges for New Media (as stated in the department-head position description): “Promote the expanding use of media content and tools through workshops, programs and guides, *including the encouragement of student-authored content*” [italics ours]. The Media Lab housed equipment and software dedicated to post-production editing, digitizing and format converting, and allowed Lied Library users to check out digital cameras, tripods, light kits, microphones, and related recording equipment. At the Media Resources desk nearby, laptops, portable projectors, film/slide converters, and a variety of adapters and cables were readily available.

With the advent of New Media and a new department head, the libraries began exploring

the possibilities for new services, spaces, and ways of engaging students. Initial investigations involved reviews of the literature, visits to model institution websites, and a site visit in the summer of 2014 to the University of Nevada-Reno's Mathewson-IGT Knowledge Center and the Delamare Science and Engineering Library to look at their digital labs, media production facilities, and makerspaces. Further input on campus needs came from old-fashioned involvement in committees and conversations outside of library walls. For example, in attending one of his first meetings with the campus' Faculty Technology Advisory Board — a group run by the university's Office of Information Technology and comprised of faculty representatives from all discipline areas — the New Media Department head learned of the challenges faced by teaching faculty in procuring space, resources, and assistance in recording lectures or presentations on their own initiative, with no centralized university solution. This in turn led to a New Media-led investigation into Penn State's One Button studio, with its simplified set-up and low overhead in terms of space, equipment and technical knowledge required of users or support staff (Pennsylvania State University, 2016).

At the same time, UNLV's STEM Librarian was learning more about equipment and software needs, both met and unmet, in daily interactions with engineering and science students and faculty. After exploring what was available to students on campus, a few key pieces of equipment were located in the architecture department and in departments in the College of Engineering. The common denominator in these conversations and investigations was that relatively high-demand, technology-related resources and equipment, while available on campus, were dispersed among various department spaces and labs, not well-known or marketed to the general UNLV community, and often available to limited groups with limited hours. She had visited the University of Nevada, Reno libraries in October 2013 and been intrigued with their

maker culture and implementation of 3-D scanning, design, and printing (Colgrove, 2016).

As in so many other academic settings, Lied Library, with its literal central location on campus, advantageous hours, and expertise in providing services, collections, and support to every member of the academic community, stood poised to help with the provisioning of new technology. Patrick Colgrove, Head of the Science and Engineering Library at UNLV's sister institution, University of Nevada, Reno, put it eloquently in his account of working with faculty to provide 3-D printing at his library:

The library occupies a unique position, able to leverage the depth of learning and opportunities for knowledge creation that access to such technology can provide. By its nature as a shared resource, the library potentially can serve as an active cross-disciplinary hub in which members of different communities of practice can serendipitously encounter and interact with one another. Rather than existing in isolated departmental technology pockets, shared library technology explicitly enables depth of learning and knowledge creation across disciplines. (Colgrove, 2014, "Potential Benefits", para. 2)

Even as various stakeholders continued to discuss the merits of expanding Media lab resources and adding a one-button recording capability, UNLV librarians considered leveraging existing space and resources to offer devices for check out that had not been previously available at the library, but that, like the camera equipment and accessories available through the lab, had the potential to support creative projects and co-curricular activities.

UNLV libraries have always attempted to reach students with unique collections and by providing creative activities that support students outside of the curriculum. For example, it provides realia such as anatomical and molecular models as learning aids and media devices to support course assignments. The main library offers a leisure-reads collection, and Legos are provided at the Architecture Studies Library. During stressful times of fall and spring semesters, study-break activities are offered in the library building to provide on-campus opportunities for

short relaxation, including various crafts as a creative outlet, but no standing collection or activities are offered. Computer and Internet use policies allow nonacademic use with the exception of high-use periods in fall and spring semesters. These activities highlight the organization's focus on the academic success and graduation goals of the university and reflect its student-centered mission. However, they also highlight a void in what is offered. While the libraries' marketing and branding highlight a number of action words such as *explore* and *create* and *innovate*, there has not been an explicit invitation offered to students to engage in these activities outside a direct connection to a specific course or student organization.

Case Study

While many academic libraries have followed the public libraries' lead in developing makerspaces (especially around 3-D printing), UNLV librarians felt there were other effective ways to engage users with new technology and support their creativity without a costly investment in space and staffing. Absent the resources and administration backing for a true makerspace, they could still offer select "maker" tools as a collection, and encourage users to engage with librarians in virtual space. The working title for the project was "Peripherals Zoo," reflecting the desire to collect a variety of tool "species" for the edification of users. They also wanted to keep costs, both in money and staff time, low enough to make it attractive and reasonably risk-free as a pilot project.

To start, librarians decided to pursue local sources of funding. The UNLV Libraries has an advisory board of community donors that funds worthy projects that fall outside of the general budget. The Dean's office collects proposals for presentation to the board, typically at the beginning of the calendar year. The proposal described the purpose of the Peripherals Zoo as providing UNLV students with access to low-to-moderate cost (up to \$500 per item) electronic

devices, peripherals, models, and equipment that

- stimulate creativity and imagination in curricular, co-curricular and recreational activities
- augment the libraries' existing checkout collection of laptops, earphones, digital cameras, lights, etc.
- the average student user is not likely to have acquired for him/herself, or has a "test before buying" attraction
- are not generally or easily accessible elsewhere on campus
- get students thinking about Lied Library as not just an information repository, a convenient computer lab or place to study, but a place to come to be creative

The proposal also detailed how the Zoo would differ from an ordinary collection of checkout equipment associated with the Media lab or Media Resources desk. Items would be available for multi-day checkout to allow enough time for users to familiarize themselves with the devices and experiment and be creative.

The collection would be promoted on the libraries' website, social media, the UNLV "Rave" announcements list (aimed at students), the student newspaper, and digital and print signs located in Lied Library and various sites around campus. With a link printed on the device packaging, users would be encouraged to fill out a quick online survey asking them how they used the item and for what purpose (school assignment, personal enjoyment, club or organization, etc.). The online survey would also ask whether or not they created something with the device such as a video or image, and if so whether they would be willing to share it with the libraries for featuring on the website and/or digital displays in the building. To stimulate even further engagement, librarians proposed holding up to three polls in the course of the academic year to encourage students to vote for their favorite device to add to the Zoo. The same channels used to promote the original collection would be used to solicit students' ideas for new devices and to get them to the online polls.

To help the board visualize just what this new collection would be about, the STEM librarian and New Media department head met with New Media staff to brainstorm candidate devices for a starter collection, the goal being to support a variety of disciplines and interest areas, from the arts to the sciences. The proposal included such sample devices as a GoPro camera, the Oculus Rift virtual reality headset, a digital microscope, and the Pixelstick, a special photography light used to make long-exposure light “paintings.” But ultimately, librarians wanted students to weigh in on what should make it into the collection.

The cost to establish the collection, not factoring in staff time, was a maximum of \$5000 (based on a starter collection of five devices, two copies each, with an upper spending limit of \$500 per copy). The proposal also included a request for an additional \$3000 to grow the collection for a year — potentially three new items, two copies of each, at the same \$500 cap. Librarians were hoping that the unique nature of the proposal, coupled with the relatively modest funds requested, would work in the proposal’s favor. Instead, the board decided to fund other priorities. Undaunted, the librarians decided to leverage the work already done and apply for external funding. In researching the types of awards given and looking at sample successful applications, the Institute of Museum and Library Services’ Sparks! Ignition Grants for Libraries looked to be the best fit for the scope and intent of the project. The librarians met with the campus’ Office of Sponsored Programs for assistance in developing the proposal, but realized the looming deadline didn’t allow enough time to apply for the open round of funding. While the librarians continued to look at other funding options when, by chance, the topic came up at a meeting between the Dean and the New Media department head. The Dean agreed to fund the project out of the general budget, acknowledging the potential return — a new, high-visibility approach to providing and promoting checkout equipment — on a modest investment.

The next step was to solicit student opinion on devices to offer. Librarians decided on using focus groups and recruited library student employees (also encouraging them to invite fellow students not necessarily employed by the library as well). Nine students were recruited and gave their feedback over the course of two sessions. Given the limitations of the budget and the need to get a good set of devices that would attract student interest from the start, librarians felt they needed to provide examples to group participants to give them a better idea of the potential (and the limits) of the prospective collection. To gather more information about the collection, librarians held another New Media staff meeting and updated the list of potential devices that had been presented to the Libraries Board.

Focus-group sessions were held in one of the library's computer classrooms, where participants could access an online whiteboard (using padlet.com) and contribute their ideas in real time. Students were provided with the purpose of the collection and the intention to engage users throughout the academic year through online surveys, polls, and social media. Librarians then presented 10 candidate devices and had participants (via clickers) use a five-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree) to determine if an item should be added to the collection. The 10 candidate devices included:

- Google cardboard virtual reality headset
- Pixelstick for long-exposure light "painting"
- Celestron digital microscope
- Jamstik+ digital guitar
- Littlebits magnetic circuitry components kit
- Seek infrared smartphone camera attachment
- GoPro camera
- Senu tablet-compatible artist's brush
- Miselu iPad-compatible music keyboard

- Makey Makey circuitry kit

In the second part of the session, librarians asked participants to tell them what other items they would like to see provided. To wrap up the session, librarians continued to gather ideas on what the collection should be called. They readily admitted that the working title of “Peripherals Zoo” might not resonate, especially with students. There is the limiting connotation of a peripheral being an accessory or a supplement to something more central to the work or project. It also wasn’t very descriptive: many of the devices being considered stood on their own in terms of supporting creative endeavors and weren’t peripheral to anything. And certainly “zoo,” in popular usage, can have a less than inspiring connotation, as in “that place is a zoo!”

The results of the clicker polls weren’t too surprising. The GoPro camera and Google Cardboard VR headset collected mostly positive ratings (“strongly agree” or “agree”) and never dipped below “neutral” in terms of their perceived worthiness. At this point, the GoPro was familiar to most people, certainly students, and was quickly becoming a staple of many libraries’ media equipment offerings. Google’s simple and inexpensive way to turn smartphones into virtual reality tools was also getting a lot of media play. Around the same time as the focus-group sessions, local media outlets reported that the UNLV Athletic Department had created a virtual reality tour of the campus and was sending smartphone headsets to football recruits (Anderson, 2015, Oct 24). On the flip side, the circuitry component kits (“Littlebits” and “Makey Makey”) garnered mostly “neutral” or “disagree” ratings from the participants. These kits with their relative complexity and potential for different applications may have required more time than others considered in the sessions for participants to get a clear understanding of how they might be used. (Later, as librarians finalized the list of devices, they also discussed the challenge

of keeping track of complex, multiple parts during the borrowing process and ensuring they were in good working order.)

Next came the brainstorming on other devices or kits the participants would like to see the library provide. Librarians gave students ample time to post ideas to the board, and then talked in a neutral and relaxed way about the ideas; no one was forced to defend their contributions. The “usual suspects” of 3-D printers, drones, higher-end digital still cameras (DSLRs), and the more advanced Oculus virtual reality system came up in this part of the session. Many of the suggestions were of a more practical, prosaic nature: “More practical items like adapters, phone chargers, cords that can connect to ones (sic) laptop,” portable chargers / power banks, iPad keyboards, external hard drives, handheld text scanners, and the like. Librarians also discovered in the brainstorming that even the libraries’ student employees were unaware that the library was already checking out portable projectors, screens, and voice recorders at the Media Resources desk.

In the last part of the sessions, Librarians gave the students a chance to suggest a name for the collection, and how and where it should be promoted. The participants seemed to have as much or more fun with this task. “Tech” or “gadget(s)” showed up in most of the ideas for a new name. As far as promoting the new collection, students gravitated to the ubiquitous social media outlets — Facebook, Twitter, YouTube, Instagram, Flickr, Snapchat, and Reddit were all mentioned (the libraries do not have accounts for the last two platforms). The Rebel Announcements via Email (RAVE) weekly student e-newsletter was also mentioned in both sessions.

With the focus groups completed, librarians faced the challenge of digesting all the feedback gathered from staff and students and turning it into a new kind of equipment collection

and service — one that would be promoted more aggressively than similar sorts of checkout equipment in the past and that would be supported by online tools that encouraged users to communicate with us about the devices and even share things they might create with them.

First, librarians finalized the list of six devices to inaugurate the collection. As mentioned above, the GoPro camera and Google Cardboard VR headset emerged as clear favorites from the candidate list presented to the focus groups. In determining the last four devices, librarians sought to broaden the diversity and appeal of the collection by including items that would support creativity as well as scientific applications. They also favored items that were simpler, had fewer component parts to manage, and did not require accessory “consumables” that would have to be replenished with each use. Rounding out the final list, they landed on:

- Celestron Amoeba Digital Microscope, which allows users to capture and/or display microscopic images
- Sensu digital artist’s brush, which allows users to draw or paint on their tablets with compatible apps
- Miselu c.24 MIDI keyboard, compatible with iPads, that allows users to play or compose music
- Brookstone pocket projector (suggested by one of the focus group participants), that, unlike other portable projectors in circulation, could be connected to the user’s smartphone

Librarians decided on two copies of each and worked with catalogers and systems staff to create a new “gadgets” loan rule with a generous 7-day checkout period and no renewals. They felt that this would give users time enough to get familiar with and experiment with the new devices while at the same time giving others a fair shot at them. (Other related types of equipment like digital still and video cameras already in circulation typically had a checkout period of 3 days.) Librarians also decided not to allow bookings or holds on the items until demand was better assessed and user feedback was forthcoming as to how the items were being

used. Lastly, the decision was made to limit checkout permissions to undergraduate and graduate students. With funding coming from the general equipment budget, librarians had more options in this area than if the collection had been funded from student fees. However, they still chose to limit access to students for a number of reasons. From a strictly practical standpoint, they needed to keep the initial costs of this pilot effort down; assuming even a modestly successful awareness campaign, opening up the collection to the entire UNLV community would likely require more copies of each item. More importantly, librarians wanted to focus on students and support their individual desires to explore, create, or simply have fun with new technology. Faculty and staff typically have resources, individually or through their departments or schools, to test and acquire new equipment. With the new collection and its built-in communication channels, the library aimed at being a direct provider for curious students who might not be able to afford the devices out of pocket, or who at least wanted to test before buying.

Traditional makerspaces are aimed at bringing people together with tools in physical space to support learning and creativity through shared expertise. Librarians felt they could capture something of the spirit of the maker space (without the costly upfront investment in physical space) by providing the tools/devices as a checkout collection for students to experiment with and encourage them to share their experiences with the library and fellow users in virtual space. As a foundation of that virtual space, they created a libguide to provide general information about the new collection, more details about the constituent devices (as well as links to quick-start guides, manuals, and tutorials), a news tab, and a survey asking users how they used the devices and what they liked and disliked about them (see Figure 1).

Each device was packaged in a sturdy, portable container to ensure that all component parts would be protected during travel outside of the library building. The contents of the

container were selected to mimic the experience of a student owning a device. On the container was provided a tag with links to the collection libguide, where for each item there were links to the manufacturer's website for tech support and samples of how the items might be used.

Over late summer and early fall of 2015, librarians purchased and assembled the collection for a soft rollout in advance of an inaugural promotion planned for spring 2016. Members of the New Media staff each "adopted" a device, familiarized themselves with it, and determined the best way to package it for circulation. Over the course of several staff meetings, each presented a "show-and-tell" on the adopted devices to help bring the staff up to speed on the devices' capabilities and potential user and maintenance issues.

[place figure 1 here]

In the months leading up to the official rollout, staff were faced with a change of venue for the collection. While the collection was still on the drawing board, they thought that circulating these new technology items from the Media Resources desk, where students came to pick up physical media items, laptops, and equipment like portable projectors and webcams, was the logical choice. In addition, most of the New Media staff were located in close proximity to the media desk if any sort of additional help was required. However, the development of the device collection coincided with larger organizational changes to service points and collections. In order to lay the groundwork and free up space for next-generation consulting and research services, as well as creating a simpler, more centralized infrastructure for existing public services, the organization decided to move the closed-stacks physical media collection. Lesser-used items were moved to onsite storage, feature films were slated for new public browsing shelves, and the rest of the collection integrated into the general book stacks. Media reserves and all the equipment that had formerly circulated from the Media Resources desk or the Media Lab

were moved to the main circulation desk to complete the centralization of checkout services. New Media staff met with circulation staff, and, with the items laid out on a conference table, briefed the circulation staff on the new collection. New Media staff would still be readily available for needed consultations and troubleshooting when needed.

With fall 2015's soft rollout, staff wanted to experiment with the libguide and the various other online channels for promoting the collection and connecting with students. They created short URLs, displayed prominently on the device labels, that steered users to more information about the device on the libguides and the short "Give us your feedback!" Google form, which also had its own tab on the guide. For the news element of the libguide, they created an announcements-only Google Group that patrons could join by signing up with any email address. Staff initially populated the list with focus-group participants who had requested to get news about the collection.

With the new online home established, one of the first things to do was leverage it to poll users on a better, more intuitive name for the collection than "Peripherals Zoo." The candidate list assembled from the focus groups included Rebel Tech ("Rebels" is a popular UNLV nickname), The GC (Gadget Center), Tech Commons, Tech Takeout, Gadget Station, and Gadgets & Gizmos. Staff used the new announcements list and the libraries' Facebook and Twitter accounts to advertise the poll and draw students to the libguide. While participation in this initial effort was low — just nine votes — it represented a symbolic launch to the desired approach for presenting a collection and encouraging users to talk to staff about it through convenient online means.

This initial "conversation" with the libraries' users took an interesting detour shortly before the official spring semester launch. "The GC (Gadget Center)" won the poll with a

healthy plurality of the votes. Staff had designed a logo and were putting the finishing touches on posters and handouts featuring the new name when they heard from the Libraries' administration that according to UNLV practice, "center" was typically reserved for a more substantial office or campus entity. For example, the "UNLV Academic Success Center" offers campus-wide tutoring and supplemental instruction. The administrator who broke the news quickly supplied an alternative name, "The Tech Corner," which at least echoed the favorites generated by the focus groups. Fortunately, no documents had been sent to the printer yet, and changing the name in the various designs at the last minute was not too onerous.

With a brand new semester (spring 2016), a new administration-endorsed name and the devices ready to be checked out at the main circulation desk, staff began the experiment in trying to promote a discrete collection of high-interest devices and engage student users primarily through online means. To announce the debut of the collection, staff used the UNLV RAVE student announcements email list, the Tech Corner's own news list, the Libraries' Facebook and Twitter accounts, digital signage located at Lied Library's main entrance, physical signs at the Circulation and Media Resources desks, and posters distributed to a number of high-traffic areas on campus.

Use of Social Media

UNLV Libraries has been active on Facebook and Twitter for several years. Social media is used to market library events, promote library services and resources, and to update students. When the Tech Corner was implemented, it was a natural fit to market it via these channels and to use them to solicit student feedback, especially since this was one of the communication channels students at the focus groups had suggested. The Libraries' Facebook page currently has almost 1200 likes and the Twitter page, which is more popular, has slightly over 2200 followers.

Engagement has always been a goal for social media in the Libraries. These channels are geared toward undergraduate students and have been set up as an informal way for students to interact with the library. Despite this, it is often difficult to get students to interact. Frequently, other librarians and alumni are those who comment on the posts. By far the most popular posts are “Throwback Thursday”, when librarians post pictures of the library and campus from previous decades. End-of-semester events and stories on improvements to spaces within the library are also very popular. It has been more difficult to get engagement for stories on library services or resources.

Although Tech Corner posts to Twitter and Facebook have not been the most popular overall, they have been fairly successful at connecting students to content about the services offered. For Tech Corner posts, Twitter impressions ranged from 407 to 605 and Facebook reach ranged from 407 to 518, so social media is placing the information in front of a sizable number of students. It also helps to spread the idea that the Tech Corner is a service that is focused on students and that their use and feedback will be taken into consideration for collection purchases and policies. The tweet that was seen by more followers was posted on April 19, 2016: “Take a look at the Media Playlist Blog to find out what device will be added to the Tech Corner! <http://bit.ly/1MGa39i>”. It had 605 impressions with five total engagements (2 retweets, 2 link clicks, and 1 detail expand). The Facebook post that generated the most reach was also the announcement of the collection, but the post with the second highest reach was the announcement of a new item for checkout: “The winner of last spring semester's Tech Corner poll -- the 360fly camera -- is ready for checkout at Lied Library's Circulation desk. With this camera, you can ‘capture the world around you in 360 video format video that's fully interactive and optimized for mobile devices and social platforms.’ Find out more:

<https://www.library.unlv.edu/.../latest-tech-corner-device-36...>". This message had a reach of 407, with one like and four post clicks. So students were engaging with the collection and interested in finding out what was coming next.

As the Tech Corner has gotten up and running, social media has focused on expanding knowledge about the collection and inviting students to participate in voting for future gadgets to include in the collection. As the collection becomes more of a permanent part of the library, it is hoped that staff can begin to use social media to highlight actual student work that is made using the gadgets in the collection. This will both showcase student work, and at the same time provide ideas for other students about why they might want to use some of the Tech Corner gadgets.

Collection Statistics

Circulation of the items remained fairly constant through the calendar year with a slight dip in summer when fewer students visit campus for classes. The most popular items over the course of the year were the Go Pro Hero4 Session (in spite of one copy being unavailable for 5 months); the Brookstone Pocket Projector; and the Sunnypeak Smartphone VR Headset (see Figure 2; 360fly action camera numbers are not included here due to it being added later to the collection).

[Insert figure 2 here]

If one assumes maximum checkout use would be 50 weeks (time period examined) x 2 copies of each item (except for Hero4), then the top three items approached or exceeded 50% of their maximum use. The Hero4 copy 2 was lost in June and not replaced until November, which makes the high number of checkouts even more impressive. Given that the overall collection circulation statistics show a decrease in use during May-July, it seems reasonable to extrapolate that these three items, and certainly the Hero4, were likely unavailable to some students who

wanted to check them out.

Tech Corner items are all securely packaged and labelled with details on the item and accessories contained within. The labels also prominently display two short URLs: one sends the user to the detailed item description on the Tech Corner LibGuide, which in turn links to product overviews online quick-start guides, manuals, and video tutorials, and the other to a quick feedback form. The form (see Figure 3), designed to be filled out in a few minutes or less, prompts users for information on what they used the item for (Personal enjoyment/hobby, School assignment or project, Club or organization, Paid work/job, and/or Other), how they would rate the item (from Strongly Disagree to Strongly Agree) on its ease of use/ease of learning, success in accomplishing what they wanted to do, and willingness to check it out again or buy it for him/herself. In addition, the form gives respondents the opportunity to learn more and further engage with staff by supplying an email address and checking the ways in which they would like to be contacted: added to the Tech Corner news list; registered for an end-of-semester prize raffle; and/or contacted about sharing something they've done or created with the item — photos, short videos, art, etc. — for possible display on the Libraries' website or in Lied Library itself

[Insert figure 3 here]

As an additional incentive, form respondents who supply email addresses are sent an email receipt good for their choice of a UNLV Libraries-branded mini backpack, water bottle or mobile device charger, redeemable at the circulation desk.

[Insert figure 4 here]

Figure 4 shows student interactions with the collection items and key web pages and forms surrounding the collection. Key outreach and campus academic calendar events are included in

text on the figure. 360fly camera is included in this collection-wide circulation stat.

Response to Marketing/Outreach

The attempts to sustain involvement of students in the collection development were not as successful as originally hoped, in part, staff believe, due to changes in staffing and focus on the project as originally designed. Changing the collection location and loss of one key technology support-staff person in the Media Lab contributed to this reduction in focus. Only four students participated in the feedback forms, and all of these were in the first months of the collection's existence. Also, only six students provided new-item suggestions using the form, and only one of these was during the fall semester. A more encouraging result was the continued use of the email list sign-up form, with 139 total students signing up to receive periodic information about the collection.

The original "Peripherals Zoo" proposal included holding various online polls throughout the academic year to give students a chance to vote on items to add to the collection and encourage even more participation. At the beginning of the inaugural semester, staff created a simple "Ideas for new Tech Corner Gadgets" Google form to gather suggestions on an ongoing basis and provide candidates for the polls. Like the item feedback form, it also includes a prompt for an email address to receive Tech Corner news updates and to qualify for a freebie and a raffle chance. Early in the semester, staff rolled out the Ideas form, using many of the same channels that were used to introduce the collection itself — the Tech Corner and RAVE email lists, Facebook, Twitter, and so on. Suggestions were wide-ranging, including such items as the Wacom Bamboo graphics tablet, the Raspberry Pi computer kit, the Red Pitaya oscilloscope and spectrum analyzer kit, the LIDAR-Lite laser-based distance measurement sensor, a 360° camera, the HTC Vive virtual reality system, the Oganofly Nano drone, and the Boosted Dual+ 2000 watt

electric skateboard (somewhat over-priced for the collection at \$1500).

For the first poll to determine the next addition to the collection, staff chose as candidates the three STEM-related suggestions (the Raspberry PI, the Red Pitaya kit and the LIDAR-Lite sensor), the 360fly 360° camera, and a choice from the original focus groups, the Pixelstick photographic “light painting” accessory — the Pixelstick had been relatively popular with focus-group participants, but it was not included in the inaugural collection. The Google form page developed for the poll included images of candidate devices/kits and links to product descriptions.

At the beginning of April, go-to communication channels were used to promote the Google poll and kept open for 2 weeks to give everyone ample time to participate. With the Celestron digital microscope as the collection’s sole STEM representative, librarians wanted to give science, computing, and engineering students some STEM items as options. As it turned out, at the poll’s close, the respondents (213) voted overwhelming for creative photography, with the 360fly action camera winning with a healthy 44.6%, and the Pixelstick coming in a solid second with 26.8% of the votes. Although it could be argued that including three separate STEM-related items in a five-candidate list would split the STEM vote, the items in total tallied a little over 28%, suggesting that such an item was unlikely to win regardless of how staff set up the poll. This may reflect a number of realities, including the breakdown of undergraduate majors on campus — just shy of 21% in the sciences and engineering in the latest Fall 2016 UNLV undergraduate profile (University of Nevada Las Vegas, n.d.). It is also possible that students enrolled in STEM degree programs have broader interests than staff assumed.

After two copies of the winning 360fly camera were obtained, librarians called on student employees again. Two volunteers (who were paid for their time) spent a couple of weeks testing

the cameras and provided a thorough report on possible applications, the best mounts to order for anticipated use, how the camera and accessories should be packaged, and other issues that might need to be addressed up front in documentation or during the check-out process.

This project had come nearly full circle on the concept of engaging students around a unique check-out equipment collection. First, student employee volunteers helped to come up with a starter collection. The focus group participants became charter members of the Tech Corner announcements list, and that list, along with the UNLV student announcements list and the libraries' social media channels, was used to promote the collection, solicit ideas for new devices, and conduct polls on items to add. To encourage participation, the library offered free promotional items and a chance at end-of-the-semester raffle prizes to students who signed up for the Tech Corner list or supplied email addresses on the feedback form. Finally, student volunteers helped us get the poll-winning 360 camera ready for its premiere with the Tech Corner.

Lessons Learned

Some library staff reported that more tech support was desired by some students. While it may be true that younger, digital-native users are comfortable exploring technology by using crowdsourced or other online support, maker culture is a large shift from traditional instruction and library service models that usually provide more structure, which coincidentally decreases creativity and exploration (Aspinall, 2016). Staff-created tips and examples of what one can do with these items might provide sufficient guidance while not stifling creative exploration. Staff also found that moving the point of service from the Media Resources desk to the circulation desk required additional staff training and put more pressure on circulation desk staff. Additionally, the different level of support expected for the Tech Corner items was confusing for

everyone. The distinction between these items and other equipment items remains problematic. Consequently, staff are merging Tech Corner items and other equipment information into one libguide and ensuring an online mechanism for providing feedback for all checkout equipment.

It is challenging to get students' attention, and this likely contributed to the lower-than-anticipated interaction rates for the feedback form. A point-of-return tablet or paper-based feedback and suggested item form would likely increase response rates. Polling the students who signed up for the email list would likely also be fruitful. However, sustaining student involvement will require more effort than the outreach achieved in fall, and simply providing a form on a webpage was not sufficient.

Concern was raised from key campus stakeholders that this collection is (by design) not tied to the undergraduate or graduate curricula and thus is a potential distraction from completion of students' goals. Additional communication with these stakeholders regarding Tinto's (2002) and Astin's (1975) models of student retention might allay these concerns. However, with the expansion of service-learning and capstone projects that mimic real-world problem solving, it is quite probable that these items might be useful for at least some of those projects. In fact, during the second semester there had been requests to reserve materials by a student organization for use at a sponsored event and for a short period of time during the semester to support a class assignment. The 360fly cameras were quickly placed on course reserve for a graduate-level architecture course. The collection appears to have expanded the imagination of both faculty and students regarding what the library can provide to support courses.

Librarians were unable to implement any intellectual property instruction opportunity, because no students volunteered to share any of their creations. They had planned to include instruction/information about Creative Commons licensing and intellectual property to provide

informal learning opportunities such as those described in the literature (Johnson & Daley, 2013; Luo, 2010; Palmer & Gelfand, 2013). This is an area that the authors encourage other academic libraries to explore.

Where Do We Go From Here?

With the winding down of the fall 2016 semester, UNLV library staff have had a full academic years' worth of experience with the Tech Corner. As with any new initiative, some expectations have been fulfilled and some challenged, but most importantly they have learned a lot from students and colleagues. They built robust online feedback mechanisms and communication channels into the Tech Corner, but of course also stayed tuned to the venerable and sometimes irreplaceable channel of face-to-face verbal communication.

Not long after the debut of the collection, staff started getting feedback — mostly from fellow library staff members — that challenged the vision of the Tech Corner collection as primarily providing the means for individual students to explore interesting new technologies on their own. The biggest frustration heard from fellow staff members was their inability to check out any of the items due to the student-use restrictions. Faculty members echoed similar complaints. The ability to reserve items in some way also came up on several occasions. The high profile introduction of the 360fly action camera (winner of the spring semester poll) generated particular interest that prompted re-thinking some of the limits of the collection. In one case, a library faculty advisor to a student group talked to staff about reserving a 360fly camera for an upcoming event the group sought to document with immersive surround video. More recently, at the request of a professor, the Head of User Services approved putting one of the 360fly cameras on 72-hour reserve to support a class project.

Unsurprisingly, the GoPro cameras are also coveted by curious staff and faculty

members. The groundswell of verbal feedback and requests from colleagues has prompted new discussions involving purchasing more copies of the most popular items, opening them up to the entire campus community, and/or adding the ability to place reservations or holds on the items. The idea of giving curious individual students a generous week-long period to explore a device on a first-come, first-serve basis is powerful in and of itself but isn't sufficient for a number of curricular and co-curricular needs.

Another issue raised by staff concerned the idea of singling out devices as a "collection within a collection" for special promotion and feedback. Regardless of how new or interesting the Tech Corner devices might be to students, one school of thought maintained that they were still part of a larger collection of equipment that had been developed with care and thought toward campus needs, and as such deserved better promotion. The developers of the Tech Corner saw the discrete collection as a manageable, yet relatively high-profile way of appealing to students' natural interest in "new tech," with the potential to get them into Lied Library and to the circulation desk where they would be exposed to the larger picture of resources and in-person help. Of course, the framework of built-in online communication/feedback/discussion could be expanded beyond the Tech Corner's narrow confines, but staff wanted to give the original project a year-long pilot before applying lessons learned to other areas.

As of this writing, librarians are preparing to merge Tech Corner information and tools into the comprehensive library guide of checkout equipment developed by User Services (<http://guides.library.unlv.edu/equipmentcheckout>) and retire the standalone Tech Corner guide. Once this merger takes place, all of the equipment will begin to have the feedback loop initiated by items in the Tech Corner. The Tech Corner branding will remain but will be a new tab on the equipment guide that highlights a piece of equipment and provides extended descriptions,

embedded videos demonstrating various interesting or creative applications, links to user reviews, and so on that supplement the existing guide information. Visitors will be able to post comments about the featured item and provide input about what new equipment should be added. Items will rotate into the Tech Corner tab for highlighting on a monthly basis. To keep engagement going, the tab will also be home to polls on future devices to purchase. Like the original items in the Tech Corner collection, every piece of equipment will display short URLs to more online information and the quick user survey.

For the new Tech Corner checkout equipment guide, staff plan to recruit fellow staff members and student employees to adopt items; put them through their paces; produce images, videos, or audio files that can be featured on the guide; and share tips and thoughts on creative applications. This material might also be repurposed for digital video exhibits playing in various locations in Lied Library. This approach highlights people as well as technology, demonstrates the wide array of interests and talents represented by library staffers and students, and has the potential to break the ice and inspire users to share their own experiences.

One of the original hopes for the Tech Corner that has not yet come to fruition was the recruitment of users to share the creative products of their explorations for featuring on the libraries' public web and/or digital displays. Over the course of the year it proved easier to get basic feedback on how the device was used and what the user liked and didn't like about it — a matter of a few minutes using a convenient online form, versus the potentially time-consuming back and forth of negotiating the hand-off of a digital file and its terms of use. Consequently, no students offered to share their work.

Many of the lessons learned from this project will be applied to library collections and outreach and will also be shared with others on campus who are planning maker culture

programs. The literature and librarians' experience makes it clear that while it not a simple change to effect, the shift to a maker culture will benefit students and is well worth the effort.

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Figure 1. Screen shot of the Tech Corner user guide homepage

EXPLORE
INNOVATE
DISCOVER
ACHIEVE
REACH
FOCUS
GROW
CONNECT
CREATE
LEARN
INSPIRE
CELEBRATE

UNIVERSITY
LIBRARIES

HOMERESEARCHSERVICESCOMPUTINGABOUTCONTACT

University Libraries / LibGuides / Help & Services / The Tech Corner (TC) at Lied Library / Home

The Tech Corner (TC) at Lied Library

Introducing a new collection of engaging, creative devices available for student check-out at Lied Library's Circulation desk..

Search this GuideSearch

Home

The TC Collection

TC News (Google Group)

Give Us Your Feedback!

Help us
build the Tech Corner!
Submit your ideas for
new gadgets.

Contact Us

Have questions?

Want updates
on new
check-out
items?

Contact us!

Visit [The TC News Google Group](#)
Email Us
Call the Circulation desk:
(702) 895-2111

Latest addition to the Tech Corner

The 360fly HD camera is here, ready for check-out at Lied Library's Circulation desk!

With this camera, you can "capture the world around you in 360 video format video that's fully interactive and optimized for mobile devices and social platforms. Just shoot, share and swipe." [from the 360fly website]

With the 306fly app (available from the Apple App or Google Play stores), you can capture, edit and share up to 2 minutes of video directly from your mobile device. You can also download the [Director desktop app](#) to store and edit your 360 videos on your computer. Don't forget to save your video to your device, or save it to your computer using the camera's power cradle and USB cable.

For the full immersive experience, view your video using a Google Cardboard VR headset -- we also have [Sunnypeak VR sets](#) for check-out (compatible with most smartphones). See the [extended description](#) for details on what the 360fly kit contains.

Welcome!

The Tech Corner (TC) is a new collection of electronic devices, gadgets and equipment available for student checkout at Lied Library's Circulation desk (beginning Spring semester, 2016). These items supplement the existing cameras, projectors, lights, microphones, and other equipment and software available from the library.

The goal is to provide ready access to unique, easy-to-use devices that support creativity, academic work and recreation, and that students aren't likely to own themselves. We will be adding items to the collection throughout the academic year with input from users through polls and surveys. We also encourage users to share copies of anything they create with the equipment -- videos, images/artwork, music, etc. -- for feature display on our website and select public digital displays in Lied Library. All participants will be eligible for prizes.

Click on an image or gadget name for more information (and if you check something out, don't forget to tell us what you think).

360fly HD camera

Go Pro Hero4 Session camera

Figure 2. Circulation by item type, January 1 – December 15, 2016

Figure 3. Feedback form for Tech Corner borrowers

Give us your feedback!

Tell us what you think about the item you checked out from the Tech Corner (TC):

* Required

Which TC item did you check out? *

☐ GoPro Hero4 Session camera kit

☐ Sunnypeak smartphone VR headset

☐ Brookstone Pocket Projector

☐ Senu digital artist's brush

☐ Miselu MIDI keyboard

☐ Celestron digital microscope

☐ 360fly camera kit

☐ Other:

I checked it out to use for:
(check all that apply)

☐ Personal enjoyment / hobby

☐ School assignment or project

☐ Club or organization

☐ Paid work / job

☐ Other:

Rate the item:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Easy to learn / use	☐	☐	☐	☐	☐
I accomplished what I wanted	☐	☐	☐	☐	☐
I would check out again or buy for myself	☐	☐	☐	☐	☐

(Optional) Tell us what you like or dislike about it, or how you used it

Your answer

Want to know more about The TC, enter a raffle for prizes, or share something creative you've done? Please provide us your email.
(Doesn't have to be your UNLV email)

Your answer

Check all that apply for contacting you by email:

☐ Send me occasional news about the TC and new check out items

☐ Enter me in the TC raffle to win great prizes - tinyurl.com/tcprizes

☐ I want to share something creative I've done (photos, art, short videos, etc.) to feature on the Libraries website or in Lied Library

☐ Other:

SUBMIT

Never submit passwords through Google Forms.

Figure 4. Interactions with Tech Corner collection items, user guide webpages, and webforms, January 1 – December 15, 2016