

TechKnowledge

Internship Makes an Impact

Colorado teens learn skills, use makerspace to create accessible board games

BY CHRISTINA KEASLER

Boulder (CO) Public Library hosts an award-winning internship for underserved youth in its community. The program pays kids in gift cards, and the interns work in the makerspace—known as BLDG 61—to design and create projects that help the community. During their internship, they are taught how to operate machinery, like the laser cutter, as well as learning circuitry and programming.

The University of Colorado's Build a Better Book project inspired the interns' first creative prompt: to make something that could improve the lives of the visually impaired. Build a Better Book is a National Science Foundation–funded operation that helps create tactile books for those who have visual and print disabilities. Project members host workshops and other professional development opportunities, teaching advocates nationwide how to continue their mission and spread the knowledge and benefits. I was one of about 35 to be selected in this year's workshop.

One of the most prolific interns from BLDG 61's first year was 17-year-old Jerónimo Barrios Palacios Luna. When Build a Better Book presented its mission, he was inspired to create something "more dynamic" than books, he says. He made a raised board game to replicate the nearby river landscape. The game, named To Catch the Lobster, or Atrapa la Langosta, has its own vocabulary of textures, includes braille, and features soundbites that read the game cues in English and Spanish. Jerónimo learned from mentors with visual impairment that textures are more important than appearance.

While on our tour with Build a Better Book, Neal McKenzie was thoroughly impressed with the game. As an assistive technology specialist who works with K-12 blind and low-vision students in Sonoma County, CA, he organizes social get-togethers for this community and has encountered a lack of entertainment options.

"Most everyone with typical sight, including myself, grew up playing so many types of social games and has carried that love of



From the left: Jerónimo, 17, and Atzin Palacios Luna, 13, and their game, Los Muéganos.

games on into adulthood," he says. "This is sadly not the case with those who are blind and visually impaired. Although there are a few titles and smaller companies that produce accessible games, the low production and availability leave a huge hole in this area."

Inspiring people and projects

Jerónimo's creative success inspired many more accessible gaming projects during the second internship year. His passion for his project spread beyond the library and into his home. He had so much fun that his sister Atzin, 13, wanted in on the action. Even though she was younger than the intended age of the internship, creative technologist and BLDG 61 cofounder Janet Hollingsworth had no hesitation bringing Atzin on board.

"We feel that empowering young people to positions of mentoring others, even those older than them, is vital in developing a sense of agency around using new technologies," she explains. "Atzin has become a thriving member of our community over the past two years. She has responsibly learned how to use and operate the laser cutter, airbrush, Adobe Illustrator, sewing machines, and screen-printing equipment. By demonstrating these skills and attention to detail and willingness to share her knowledge with others, we all agreed that she would contribute a great deal to the summer internships."

Not only did Atzin master the technology within the makerspace, but she also became an integral cocreator of adaptive games with her brother. Together, they created a second game, tentatively titled *Los Muéganos*. The name comes from a traditional Pueblan candy, but when used in the context of people means “unity,” a fitting title since this game is collaborative and puts everyone on a level playing field. Blindfolds are included to be worn by sighted people while playing. The game consists of laser cut and 3-D printed pieces. All the pieces are handmade, and the braille is typed by the kids. Atzin explains their thought process: “Something that’s accessible isn’t just for blind people, but for everyone.”

Nearly every day of these internships, mentors with visual impairment were available for students to consult with and ask advice. With the help of the mentors, Jerónimo and Atzin could troubleshoot their games to make sure they were usable by the visually impaired community, and also work with the logistics of the game.

“We first made the braille very big so they were easy to feel, [but] they didn’t fit in the game,” Jerónimo says. “If we made them too small, the pieces would be hard to identify from one another.” Atzin continues, “We don’t know what it’s like for them ... to do everything without being able to see. So making it and making sure you can understand it without being able to see was the hardest part. Every time we [met with the mentors], we were able to add something to make it more understandable and more accessible.”

Jerónimo has been recruited by the Build a Better Book project to mentor University of Colorado students and potentially



**To Catch the Lobster or
Atrapa la Langosta.**

re-create the internship at a collegiate level. Both Jerónimo and Atzin agreed that meeting and working with mentors with visual impairment was the most helpful part of their experience, far beyond learning any of the impressive equipment BLDG 61 has to offer.

Jerónimo has never seen anyone play his games in person, but the most rewarding thing about this experience is hearing game test feedback that no player has an advantage over the other. “[It’s] as balanced as possible. Not just fun, but equal.”

Creating professional aspirations

The siblings are pursuing publishing options for *Los Muéganos*. They’ve teamed up with a board game maker that also actively uses the makerspace. Because of these intern-

ships, both teens want to go into engineering when they get older. Jerónimo wants to focus on some sort of physical engineering, while Atzin wants to combine hands-on engineering with coding.

The challenge of this summer’s internship program was designing a balloon to go to the edge of space. Jerónimo is also working on controlling the length of a ray of light.

Boulder Public Library has shown what happens when kids are given the tools to create. They can learn beyond what’s expected and use powerful equipment that places them at the cutting edge of technology. What began as a unique internship program became a perception- and life-altering experience for these two kids.

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Must-Read Non-Librarian Blog(ger)s

SO MANY OF my best ideas come from other blogs—as often as not, ones that live outside of the school library world. In no particular order, here are just some of the many blog and bloggers I couldn’t live without.

Cult of Pedagogy (cultofpedagogy.com). Since 2013, Jennifer Gonzales has been regularly blowing my mind with her thoughtful blend of effective classroom strategies and what’s new on the horizon that you can use in your classroom or library tomorrow.

Class Tech Tips (classtechtips.com). Monica Burns’ blog and podcast promotes her “tasks before apps” philosophy. Burns consistently shares valuable tips, strategies, and outstanding best-resources lists.

Shake Up Learning (shakeuplearning.com/blog). Kasey Bell’s blog and podcast series offer a wealth of practical ideas, lists, interviews with experts and practitioners, and presentation resources. An essential resource for Google educators and those who work in a Google Classroom school.

FreeTech4Teachers (freetech4teachers.com). Richard Byrne is one of my go-to folks for keeping up with free resources. I rely on his YouTube tutorial playlists, Google tutorials, and ebook guides.

Teacher Reboot Camp (teacherrebootcamp.com). Shelly Sanchez Terrell has supported teachers and learners in 100 countries. Her blog captures her energetic and enthusiastic approach for engaging all learners through innovative instructional methods and thoughtful integration of technology.—Joyce Valenza

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