

OLAQ

Volume 24 , Number 3 *Open Educational Resources: Opportunities, Challenges, Impact!* | Pages 13 - 17

3-27-2019

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Forrest Johnson

Linn-Benton Community College

Michaela Willi Hooper

Linn-Benton Community College

Johnson, F., & Willi Hooper, M. (2019). iFixit With the Library: Partnering for Open Pedagogy in Technical Writing. *OLA Quarterly*, 24(3), 13-17. <https://doi.org/10.7710/1093-7374.1950>

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OLA Quarterly is an official publication of the Oregon Library Association | ISSN 1093-7374

iFixit With the Library:

Partnering for Open Pedagogy in Technical Writing

by Forrest Johnson

Assistant Research Librarian,
Linn-Benton Community College
johnsof@linnbenton.edu

and

Michaela Willi Hooper

OER and Textbook
Affordability Librarian,
Linn-Benton Community College
willihm@linnbenton.edu



Forrest has an MA in English from Idaho State University and is currently working on an MLS at Emporia State University. He is an assistant reference librarian and teaches writing and literature at Linn-Benton Community College. His specialty is in both creating and analyzing comics, and he is now focusing on Open Pedagogy and makerspaces. He spends his spare time building instruments out of recycled/repurposed stuff, skating with his wife and kids, birding, and thinking about basketball.



Michaela Willi Hooper is the OER and Textbook Affordability Librarian at Linn-Benton Community College. She has been an academic librarian for over a decade, and her roles have included scholarly communication, copyright, management, reference, instruction, and business librarianship. She has lived in seven states and Puerto Rico, but now that she's in the beautiful state of Oregon she plans to stay.

Partnering for Open Pedagogy in Technical Writing

How can libraries support faculty engaged in teaching innovations that both save students money and increase student engagement? The authors of this paper are a writing instructor and a librarian who, supported by a campus structure that encourages innovation and open educational practices, worked together to improve and amplify an open pedagogy project.



In its short history, the Open Educational Resources (OER) movement has made deep inroads at community colleges. Linn-Benton Community College (LBCC) is no exception. As of 2017, 36 percent of full-time faculty at LBCC had adopted or created OER. The student savings from the use of OER, library resources, and other free materials stands at over \$3 million dollars (based on new bookstore price) since the campus OER initiative was formalized through the creation of a Textbook Affordability Steering Committee (TASC) (<https://tinyurl.com/y6h2ppqc>) in 2015.

The case for OER often focuses on lowering the cost of education. LBCC positions its OER efforts under the strategic objective of establishing greater affordability for all students (LBCC, 2017). Lowering textbook costs is indeed an important goal, and OER play a key role in saving students money, along with textbook rental options and the use of other free and low-cost resources, such as library ebooks. As textbook affordability initiatives gain traction, the cost of course materials appears to be falling across our state (Open Oregon Educational Resources, 2018).

Open Pedagogy

The value of open education goes beyond simply saving students money. It can also enhance student learning by allowing instructors to customize textbooks to better meet the needs of their students, or even engage students themselves in creating and improving their course materials and other open content. Traditionally, students put effort into completing assignments, faculty put effort into grading them, and then they're thrown away or never used further, meaning these hours of student work are, to quote David Wiley (2013), treated as “disposable.” In contrast, student-created open content (by which we mean content that enables users to engage in the 5Rs: retaining, reusing, revising, remixing, and redistributing) expands the world's knowledge commons (Wiley, Webb, Weston, & Tonks, 2017).

In this paper, we will refer to student involvement in the creation or revision of open content as open pedagogy, although there is not an agreed-upon definition of the term, and it might also be called *OER-enabled pedagogy* (Wiley, 2017). The values of open pedagogy include “autonomy and interdependence; freedom and responsibility; [and] democracy and participation” (Claude Paquette as translated by Morgan, 2016). These values have much in common with active learning, service learning, and project-based learning, as well as constructivist and critical digital pedagogies (DeRosa & Jhangiani, 2017). All of these approaches require students to practice intellectual skills beyond remembering and understanding information. They actually engage in analyzing, evaluating, and creating new knowledge, in terms of Bloom's Taxonomy. With open pedagogy, student commentaries, improvements, and/or creations can be shared, built upon, and employed in ways that benefit society rather than discarded. Student contributions to Wikipedia (<https://wikiedu.org/>), for example, may help the instructor refine the assignment for future classes, inspire adoption of Wiki Education projects in other courses, stimulate a community discussion, be translated into other languages, and/or help Wikipedia readers succeed in their practical or intellectual efforts. While research on open pedagogy and student success is preliminary, it is so far promising (Wiley et al., 2017).



The iFixit Technical Writing Project

In March of 2018, Forrest Johnson heard about an open, industry-standard technical writing handbook published by the instructional software company Dozuki, which he decided to

adopt for his sophomore level technical writing course (WR 227). The Writing Department at LBCC has not settled on a default text for technical writing (in some courses, like English Composition, the department does recommend default texts, but faculty have the freedom to choose OER instead). Forrest had been using a textbook for his course that cost the students \$65. The text was full of useful information but often failed to demonstrate the clarity and conciseness essential to technical writing. In addition to being free and openly licensed, the *Dozuki Tech Writing Handbook* does a better job of exemplifying technical writing because it is a technical manual, written for companies developing internal technical documents. For example, the chapter titled “Be Concise” is under 875 words, including this chapter summary, “Be direct and get to the point. Then stop writing” (Wiens & Bluff, 2018).

While researching Dozuki, Forrest discovered its sister company iFixit (www.ifixit.com). iFixit is both a company and a community whose goal is to create repair and replacement guides for every electronic device. The company sells tools and parts for devices, but all of the instruction is published as a wiki. The information on the site is published under a Creative Commons Attribution-NonCommercial-Sharealike (CC BY-NC-SA 3.0) license and without third-party advertisements. To sustain the business model and solicit quality writing, iFixit partners with collegiate technical writing classes on their education website (<https://edu.ifixit.com/>). They offer three types of projects for classes that want to participate: The Standard Project, where each group writes a series of technical documents about an electronic device over the course of about 10 weeks; The Fast Fix, where each group writes a single repair guide for a household device over the course of a few weeks; and The Editing Project, where students edit existing iFixit content over the course of a few hours. The most innovative of the three options is The Standard Project, for which iFixit provides each class with devices, toolkits, and even some photography equipment needed to produce content that meets their style guide.

Since adopting the iFixit project and *Dozuki Tech Writing Handbook*, Forrest’s students are more engaged in the coursework. Because the students know that their work will be published and used by the public, they are incentivized to represent themselves well by doing good work. The active learning elements of replacing components on their device and photographing the process also engages students who find writing tedious, providing a space for students with a wide range of literacies to demonstrate their knowledge.

To be published, the students’ writing must conform to the iFixit style guide as well as be thorough and accurate. Since Forrest is not the arbiter of when the work is published, he is able to work with them as a tutor, guiding the students through the iFixit style and helping them interpret and incorporate iFixit’s feedback. In addition, the students are more open to accept and engage with iFixit’s feedback because it is not directly tied to their grade.

Integrating Information Literacy into iFixit

Michaela has a background in copyright and authors’ rights, and was excited that this project made concepts like the public domain and Creative Commons licenses immediately relevant to the students. iFixit’s licensing conditions (<https://www.ifixit.com/Info/Licensing>) requires creators to use open materials or create their own, and content created for iFixit would be licensed under CC BY-NC-SA 3.0. We both felt it was imperative that students understood both their rights and their responsibilities related to intellectual property. This ties into the



ACRL Information Literacy Framework of “Information Has Value” (ACRL, 2015).

Forrest invited Michaela to a class session to talk about copyright and Creative Commons licensing in spring 2017, and the visit was repeated in fall 2018. Michaela started off with a presentation that covered intellectual property topics like the public domain, fair use, and Creative Commons licensing. We played a game illustrating how people could arrive at different conclusions from a fair use analysis. We wrapped up with an activity where teams of students were given an image without context, and used Google’s reverse image search function to try to find the original image and determine how they could use it. This activity also emphasized the importance of providing attributions for downstream users. Student questions from these information literacy sessions provided direction for making the session even more relevant to students in the future. In response to student concerns about how to paraphrase technical, factual information, future sessions may focus more on synthesis, paraphrasing, and plagiarism. You can view and repurpose the current version of Michaela’s slideshow (<https://tinyurl.com/yxkg57hx>).

Promoting iFixit at LBCC and Beyond

LBCC’s TASC offers faculty grants for the adoption, customization, and creation of OER. This grant was initially financed through strategic (short-term) funds. Each dollar invested realized \$10 in student savings (based on new textbook prices). Because of the success of this strategic initiative, student leadership voted in favor of a \$1 per course fee to make the OER program permanent. While these grants do not cover all the time LBCC faculty put into OER, they provide some recognition and compensation for this work. Michaela encouraged Forrest to apply for one of these grants in summer 2018, even though he had already started teaching with the iFixit materials. The grant allowed him to refine his process and guide other LBCC faculty who might be interested in adopting the iFixit project. Michaela and Forrest have regularly partnered to promote open pedagogy at faculty development events, department meetings, and OER informational sessions. Michaela presents open pedagogy as a concept, and then Forrest is able to talk about how it works in practice. The project is now being adopted by other writing instructors at LBCC.

Forrest created a Powtoon (<https://tinyurl.com/y5g2sz3p>) promoting iFixit and uploaded the slides to CommunityArchive@LBCC (<http://libarchive.linnbenton.edu/>), the institutional repository managed by the LBCC Library. We are also trying to amplify awareness of this project through OER repositories and referatories: Forrest submitted his course information to the Open Oregon Educational Resources resource page (<https://openoregon.org/resources/>), and Michaela submitted the *Dozuki Tech Writing Manual* to be indexed in OER Commons (<https://oercommons.org>).

Conclusion: Libraries as Collaborators and Amplifiers for Open Pedagogy

Librarians are often key advocates and supporters of OER on campus. iFixit was the first case in which the LBCC library was able to collaborate with and promote an open pedagogy project. Michaela had long been interested in ways to support students as creators, rather than simply consumers, of information. The iFixit project provided an opportunity for librarians to engage students as creators of intellectual property and re-users of open content. This project also allowed the LBCC TASC to decide how to handle grant applications for open pedagogy projects. For these types of grants, an instructor how-to manual or campus



promotions may be more suitable outcomes than new or revised OER. Through the funding from the TASC, Forrest was able to collaborate with Michaela to promote his project across campus and to the OER community more widely. LBCC has a streamlined set of courses, and none focus solely or primarily on information literacy. However, for librarians who are teaching courses in research and information, similar open pedagogy projects like the Wiki Education Program (<https://wikiedu.org/>) easily lend themselves to meeting the relevant learning objectives. 

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