The Open Data Literacy Project

Nicholas Weber, An Yan, and Carole L. Palmer
Information School, University of Washington

Abstract
The Open Data Literacy project is preparing future and current librarians to advance open data initiatives. This poster will provide an overview of the planned activities and project design, with a focus on strategies that iSchools can implement to collaborate with public sector partners to overcome the current lag in data expertise in the public library workforce. Core activities include new curriculum for master’s students in Library and Information Science, a slate of fieldwork opportunities at institutions managing and publishing open data, and community workshops and open education resources for public librarians and information professionals. The educational framework will improve public accessibility and use of open data while increasing the data capabilities of both new and practicing information professionals in public libraries.

Keywords: Data Literacy; Open Data; Data Curation; Information Science Education


Copyright: Copyright is held by the authors.

Acknowledgements: This work was funded by a grant from the Institute of Museum and Library Services, Laura Bush 21st Century Librarians Program. Grant number: 67-5285

Contact: nweber@uw.edu, yanx15@uw.edu, cdpalmer@uw.edu

1 Introduction

Open data has the potential to positively transform many aspects of society, from increasing civic engagement in political processes (McClen, 2011), to improving community resilience to a changing climate (Boulton et al., 2011), and even strengthening cultural heritage awareness (Kitchin, 2014). In recent years, there have been many advances in technical infrastructure for discovering, accessing, and using open data (George, 2014; Davies & Bawa, 2012). Library and Information Science (LIS) education programs have made considerable progress in preparing a data workforce that can complement these emerging technologies, but thus far the focus has largely been on academic libraries (Steinhart & Qin, 2012; Weber et al., 2012; Carlson et al., 2013; Palmer et al., 2014; National Research Council, 2015). A significant gap remains between what is possible technically and what is actually being achieved with data infrastructure and services, especially within public libraries where open data has great potential to serve local communities (Bertot, Butler & Travis, 2014). In short, formal workforce development in data expertise is lagging for public librarians, much as it was for academic librarians.

The ODL literacy project is preparing future and current public librarians to curate collections of open data of value to local communities, build the necessary infrastructure and preservation environments to sustain open data collections, and work to make more data open to the public by collaborating with open data providers on advocacy and outreach activities. Previous work has considered what it means to establish competency in critically evaluating, using, and managing data as an informational resource (Mandinach & Gummer, 2012; Twidale, Blake & Gant, 2013). LIS data literacy work has addressed the meaningful interpretation of social science data (Stephenson & Shifter, 2007) and how STEM students manage data in e-Research settings (Qin & D’Ignazio, 2010; Carlson et al., 2011). Digital curation curriculum and educational opportunities for professionals also continue to advance, with increasing attention to data resources (e.g., CURATECamp and CurateGear). But again, little investment has been made in the specific open data competencies now needed in public libraries and other public sector organizations serving the
general public. ODL will make significant contributions through a systematic, collaborative, and practice-based educational effort.

2 Open Data Literacy Model

Funded in 2016 through the IMLS Laura Bush 21st Century Librarians Program, the three-year project is positioned at the intersection of two new strategic areas at the UW Information School—the Future of Libraries and Data for Social Good. ODL will offer a robust model for innovative LIS data education and raise awareness of our field’s growing contribution to social, environmental, and cultural advances in the era of big data. The project brings together the expertise of both the DataLab\(^1\) and the Technology and Social Change group (TASCHA)\(^2\) in the iSchool with external public institutions that create, manage, and publish open data. The partners for the initial implementation are Seattle Public Library, Washington State Historical Society, Washington State Department of Transportation, the City of Seattle, and the Washington State Office of Technology.

Three core areas of activity have been designed to leverage the team’s collective capacity in data curation and data science to reach both students and practicing professionals—1) curriculum for open data literacy and expertise built on established data curation and data science education; 2) practical field experiences and mentoring, including mechanisms for bringing practice-based knowledge back into the classroom; and 3) continuing education and outreach to advance expertise for practicing librarians to advocate for and implement open data initiatives.

2.1 Open Data Curriculum

The ODL Curriculum Team is developing an integrative curricular framework that covers collecting, managing, curating, preserving, and providing meaningful access to open data. A sequence of two existing courses—Fundamentals of Data Curation and Advanced Data Curation—are being redesigned to focus on the use of open civic, environmental, and cultural heritage data. A new course on Services and Infrastructures for Open Data is under development and will be a prerequisite for students to advance into summer internships. The recently introduced Digital Preservation course at the iSchool will be an important elective, also revised for ODL objectives. Basic introductions to programming, database development, and data analytics are covered through the school’s sequence of courses in the Data Science specialization. We are also working on general strategies for making courses in the existing Data Science specialization at the UW iSchool more accessible and applicable to MLIS students by adapting assignments to accommodate the interests of ODL students.

2.2 Fieldwork Options

ODL is also developing a slate of fieldwork options in collaboration with our public-sector partners—paid summer internships, directed fieldwork for course credit, and capstone projects. The ODL Internships are a new, competitive field experience that will place cohorts of five high-performing students at ODL partner sites to work on collaboratively designed open data projects. ODL Internships will begin with on-site project work for approximately 6 weeks, with two additional weeks devoted to development of professional development resources based on related project outcomes of value to the field.

Directed Fieldwork is an existing iSchool course that allows students to pursue hands-on projects at an organization as an independent class under the direction of a faculty member. For ODL, students pursuing this option will undertake open data projects and have additional one-to-one mentoring from a

---

\(^{1}\) datalab.ischool.uw.edu

\(^{2}\) tascha.uw.edu/
professional at the fieldwork site. The third fieldwork option is for students to use the iSchool Capstone project requirement to conduct open data fieldwork at a partner institution or with the DataLab, TASCHA, or UW eScience Institute initiatives. In 2017 four teams of students have designed capstone projects that will tackle questions such as ‘What’s working to restore Puget Sound?’ These four projects will help state agencies in Washington publish, visualize, and sustainably manage open data.

Additional areas of focus for ODL student fieldwork projects include:

<table>
<thead>
<tr>
<th>Data Collections on Civic Concerns</th>
<th>Professional Best Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment &amp; wildlife monitoring</td>
<td>Open access and data licensing</td>
</tr>
<tr>
<td>Natural resources and hazard mapping</td>
<td>Resource interoperability</td>
</tr>
<tr>
<td>Regional cultural heritage curation</td>
<td>Digital preservation</td>
</tr>
</tbody>
</table>

3 Conclusion
As open data increases in importance, ODL will prepare active, influential, and technically capable information professionals who can make lasting contributions in their communities and empower others to sustainably curate open data to serve the public good. As ODL curriculum and the field experience model are established, outcomes will be transformed into educational resources for the broader professional community through workshops and webinars on managing, curating, and preserving open data and application of open-source software. Outputs from the development and implementation of each area of activity will result in a formal curriculum framework, case studies, and evaluation outcomes to benefit the LIS education community.

4 References


