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Participatory Archival Research and Development: The Born-Digital Access Initiative

Alison Clemens, Wendy Hagenmaier, Jessica Meyerson, Rachel Appel

Introduction

In an effort to advance the professional discourse around establishing best practices for access to born-digital archival collections, the authors designed a multi-phase, mixed-methods initiative, begun in 2014, that aimed to identify gaps and challenges in existing access methods and gather information on plans for how cultural heritage organizations hoped to improve access practices in the future. Over the course of the collaboration, our goals evolved beyond the scope of collecting and publishing a static data set. We were inspired by models of research in practice, participatory action research, and research and development to use the data to kickstart collaborative progress towards the future of archival practice. Through this paper, we synthesized our personal experiences of conducting the study, our exploration of existing models, and our aims and hopes for the future of research in the field into a framework for research in practice called Participatory Archival Research and Development (PAR&D).¹

Our study had two major components. Part I comprised a literature review on access to born-digital archival collections, a survey and interviews about how institutions were providing access to born-digital collections, and a preliminary report of our findings. In Part II, we used our findings from Part I to design and implement a participatory Born-Digital Access Hackfest. Throughout our research journey we interrogated what it means to conduct research as reflexive practitioner-researchers in and of our field, examining our attitudes and assumptions and those of our profession, and exploring how our involvement with our study influenced and

¹ Rachel Appel, Alison Clemens, Wendy Hagenmaier, and Jessica Meyerson, "Participatory Archival Research and Development: The Born-Digital Access Initiative Dataset," November 13, 2017, <http://hdl.handle.net/1853/58923>. For additional documentation, please see: Jessica Meyerson, Alison Clemens, and Wendy Hagenmaier, "Born Digital Access," Open Science Framework, September 21, 2017, <https://osf.io/yxyy5>.

informed our research.² If the values of trust and sustainability are at the core of our professional mandate to preserve cultural heritage, we argue that reflexive research in practice should be a necessary component of archival work: research with a reflexive orientation necessitates critical self-evaluation, at the levels of the research-practitioner, the institution, and the profession. This self-evaluation, in turn, fosters trust among practitioners, researchers, users of collections, institutions, and professional organizations, and sustains the relationships and infrastructures long-term preservation and access require. We offer Participatory Archival Research and Development (PAR&D) as a high-level framework abstracted from our own experiences, challenges, and reflections throughout this study—as one model of research in practice that both encourages practitioner-researchers to question the underlying assumptions shaping their professional discourses and practices and empowers practitioner-researchers to enact change based on research findings.³

The archives profession faces urgent challenges—from archival silences to the rapid pace of technological change, from unsolved questions of storage and security to the potential threat of climate change to our collections, and beyond. These challenges demand that practitioners expand our ideas and experiences and that we add new tools to the “archival repertoire,”⁴ growing our capacity for knowledge creation that fuels practical progress. We offer our experience, our lessons learned, and our outline of PAR&D as a contribution towards an expanded archival repertoire.

² David Nightingale and John Cromby, *Social Constructionist Psychology: a critical analysis of theory and practice* (Buckingham: Open University Press, 1999).

³ See: Catherine Cassell and Phil Johnson, "Action research: Explaining the diversity," *Human Relations* 59 (2006): 783-814, accessed October 6, 2017, <https://doi.org/10.1177/0018726706067080>; Ann L. Cunliffe, "Crafting Qualitative Research," *Organizational Research Methods* 14, no. 4 (2010): 747-673, accessed October 6, 2017, <https://doi.org/10.1177%2F1094428110373658>; Silvio Ripamonti, Laura Galuppo, Mara Gorli, Giuseppe Scaratti, Ann L. Cunliffe, "Pushing Action Research Toward Reflexive Practice," *Journal of Management Inquiry* 25, no. 1 (2015): 55-68, accessed October 6, 2017, <https://doi.org/10.1177%2F1056492615584972>.

⁴ Donald A. Schon, *The Reflective Practitioner: How Professionals Think In Action* (New York: Basic Books, 2008).

Literature Review

Research in Practice

As we examined the evolution of our research process and goals over the course of Parts I and II of our study, we contextualized our work in terms of several modes of theory and practice, including research in practice, participatory action research, and research and development. We began framing our work by comparing expressions of research in practice found across the literatures of several fields in which academic research is closely coupled to a professional discipline, including subdomains of information studies, organizational studies, management, education, and health sciences.

In health sciences, “translational research” is the dominant term used to describe efforts to bridge pure research with day-to-day practice. Tom O’Connor defines translational research in the *Journal of Child Psychology and Psychiatry* as “a research agenda focused on translating or applying the research findings from basic/preclinical studies to human studies and perhaps most especially treatment trials; and, the translation of clinical research findings to the community so that evidence-based best practice is adopted.”⁵ According to O’Connor, the term translational research originated with the National Institutes of Health and has received broad adoption to the point of “concretely (re-) engineer[ing] research infra-structures and funding mechanisms in many countries.”⁶

Similar efforts to connect research and practice more explicitly are referred to as “research in practice” in education and information studies. Unlike translational research, which assumes academics are conducting the research and places responsibility on the academic researcher to explicitly connect their work to a clinical environment, research in practice goes a step further: it assumes that the practitioner has something to offer the research discourse while acknowledging the challenges inherent in any attempt to bridge what Jaeger and Bertot characterize as the “two-tiered discourse,” or the categorization of publication outlets into either practitioner or

⁵ Tom O’Connor, “Editorial: Translational research in practice,” *Journal of Child Psychology and Psychiatry*, 54, no. 11 (2013): 1153, <https://doi.org/10.1111/jcpp.12163>.

⁶ *Ibid.*, 1153.

academic.⁷ Jarvis characterizes several limitations of “practitioner-researchers,” who “often are not recognized as researchers. They certainly do not have the traditional image of the researcher, and they may not always be in a position to conduct their research in a most satisfactory way, nor do they necessarily meet the stringent demands of some members of the traditional research community.”⁸

Schon writes in *The Reflective Practitioner, How Professionals Think in Action*, “The dilemma of rigor or relevance may be dissolved if we can develop an epistemology of practice which places technical problem solving within a broader context of reflective inquiry, shows how reflection-in-action can be rigorous in its own right, and links the art of practice in uncertainty and uniqueness to the scientist’s art of research.”⁹ Following Schon’s articulation of “epistemology of practice,” we explored models of deriving knowledge via experience and action.

Participatory Action Research

According to Renée Jefferson's review of action research literature, the term is commonly attributed to Kurt Lewin whose approach includes “reflection and inquiry with an emphasis on improving one’s work environment.”¹⁰ Lewin identified four action research approaches: (1) diagnostic action research, which produces a needed plan of action; (2) participant action research, in which participants are involved in the research process from the beginning; (3) empirical action research that involves record keeping and the accumulation of day-to-day work for a group; and (4) experimental action research that requires a controlled study of the relative effectiveness of various techniques in nearly identical social

⁷ Paul T. Jaeger and John Carlo Bertot, “Research and Practice, Research in Practice: Library Quarterly in the Twenty-First Century, Part 3,” *The Library Quarterly* 83, no. 2 (2013): 91–93, accessed October 6, 2017, <https://doi.org/10.1086/669553>.

⁸ Peter Jarvis, *The Practitioner-Researcher: Developing Theory from Practice* (San Francisco, CA: Jossey-Bass, 1999), 9.

⁹ Donald A. Schon, *The Reflective Practitioner: How Professionals Think In Action* (New York: Basic Books, 2008), 31.

¹⁰ Renée Jefferson, “Action Research and the Academic Library Practitioner: Theories and Applications,” *New Review of Academic Librarianship* 20, no.2 (2014): 93, <http://dx.doi.org/10.1080/13614533.2014.921536>.

situations.¹¹ According to Jefferson, participatory action research (PAR) is the most common approach in academic library settings and is considered to be “emancipatory, critical, and transformational.”¹² Participants become empowered and aligned around the truths created or discovered in the action research, so that desirable change results.¹³ The basic assumption of participatory action research is that individuals can learn to create knowledge on the basis of their concrete experiences, observing and reflecting on those experiences in order to derive abstract concepts and generalizations. Individuals then test the implications of the derived concepts in new situations, which leads to new concrete experiences, and in turn, initiates a new cycle of discovery and actionable knowledge creation.¹⁴ Participatory action research seeks to contribute to the professional research landscape while also addressing an immediate practical need or problematic situation.¹⁵

Research and Development

The third theory of research and practice we examined to contextualize our work was research and development (R&D). Within economics and management studies, the concept of R&D gained traction in the mid-twentieth century, as pure research was applied to innovation, development, and production. The Organisation for Economic Co-operation and Development defines R&D as “creative and systematic work undertaken in order to increase the stock of knowledge—including knowledge of humankind, culture and society—and to devise new applications of

¹¹ Kurt Lewin, “Action Research and Minority Problems,” *Journal of Social Issues* 2, no. 4 (1946): 34-46, <http://dx.doi.org/10.1111/j.1540-4560.1946.tb02295.x>.

¹² Renée Jefferson, “Action Research and the Academic Library Practitioner: Theories and Applications,” *New Review of Academic Librarianship* 20, no. 2 (2014): 98, <http://dx.doi.org/10.1080/13614533.2014.921536>.

¹³ Eric M. Anderman and Lynley Hicks Anderman, “Action Research,” in *Psychology of Classroom Learning: An Encyclopedia* Vol. 1, ed. Eric M. Anderman and Lynley Hicks Anderman (Detroit: Macmillan Reference USA, 2009), 17-19.

¹⁴ Mary M. Somerville and Margaret Brown-Sica, “Library space planning: A participatory action research approach,” *The Electronic Library* 29, no. 5 (2011): 669-681, doi:<http://dx.doi.org/10.1108/02640471111177099>.

¹⁵ David Avison, Richard Baskerville, and Michael Myers, “Controlling action research projects,” *Information Technology & People* 14, no. 1 (2001): 28-45, <http://dx.doi.org/10.1108/09593840110384762>.

available knowledge.”¹⁶ Many studies examine links between R&D and measures of productivity, return on investment, and risk.¹⁷ Management scholars have analyzed the application of R&D methods to the development not just of products, but of services,¹⁸ and traced the expansion of traditional R&D into “open R&D and innovation” models.¹⁹

Within library and information science, Erjia Yan’s 2015 study “Disciplinary Knowledge Production and Diffusion in Science” provides some evidence for the idea that investment in scholarly R&D leads to knowledge production.²⁰ Bethany Nowviskie’s 2013 article “Skunks in the Library: A Path to Production for Scholarly R&D” outlines a model of skunkworks within libraries, where scholar-practitioners are empowered with the freedom to engage in R&D.²¹ Nowviskie distinguishes between pure research and R&D:

¹⁶ OECD (Organisation for Economic Co-operation and Development), *Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development, The Measurement of Scientific, Technological and Innovation Activities*, (Paris: OECD Publishing, 2015), <http://dx.doi.org/10.1787/9789264239012-en>.

¹⁷ A 2005 background paper by the Congressional Budget Office posits, “Given that innovation is a fundamental source of technological change and therefore of productivity growth, there is little doubt that research and development—especially if defined broadly to include the invention of new products, the discovery of new ideas, and the improvement of business processes—is the root of all increases in productivity”. Congressional Budget Office, “R&D and Productivity Growth: A Background Paper” (2005): 30-31, <https://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/64xx/doc6482/06-17-r-d.pdf>.

¹⁸ Stefan Thomke, “R&D Comes to Services: Bank of America's Pathbreaking Experiments,” *Harvard Business Review*, April 2003, <https://hbr.org/2003/04/rd-comes-to-services-bank-of-americas-pathbreaking-experiments>.

¹⁹ Oliver Gassmann, Ellen Enkel, and Henry Chesbrough, “The future of open innovation,” *R&D Management* 40, no. 3 (2010): 213-221, <https://doi.org/10.1111/j.1467-9310.2010.00605.x>.

²⁰ Erjia Yan, “Disciplinary Knowledge Production and Diffusion in Science,” *Journal of the Association for Information Science and Technology* 67, no. 9 (2015): 2223-2245, <http://dx.doi.org/10.1002/asi.23541>.

²¹ Ben Vershbow examines another skunkworks model in his 2013 article on NYPL Labs, an in-house startup where curators were empowered “to think more like technologists and interaction designers, and vice versa.” Ben Vershbow, “NYPL Labs: Hacking the Library,” *Journal of Library Administration* 53, no. 1 (2013): 79-96. <https://doi.org/10.1080/01930826.2013.756701>.

a skunkworks operation is not about pure research, or innovation for innovation's sake. Good work is meant to come from this team, and to be available for application by others. An enviable measure of liberty in scope and freedom from day-to-day distraction is earned by the skunks, through meaningful innovations that can be folded into wider operations and larger communities within and beyond their host organization.²²

Since 2007, the Society of American Archivists Research Forum, co-founded by Nancy McGovern and Helen Tibbo, has provided an essential venue for the sharing of research findings related to archives, “from ‘pure’ research to applied research to innovative practice.”²³ At the 2014 Forum, Lee encouraged archivists to “embrace the D-word,” positing that “in order to empirically test ideas in a new context, one often has to build something.”²⁴ Lee focuses on a fairly narrow definition of development as software development—but what if archivists were to construct a broader model of development, involving all streams of practice implicated in digital archives work?

The United States' National Endowment for the Humanities Research & Development grants program offers a first step towards providing infrastructure to fuel R&D within the cultural heritage sector and outlining how a model of cross-institutional archives R&D might look.²⁵ Thomas Padilla echoes this need for investment

²² Bethany Nowviskie, “Skunks in the Library: a Path to Production for Scholarly R&D,” *Journal of Library Administration* 53, no. 1 (2013), 56.
<http://libra.virginia.edu/catalog/libra-oa:2745>.

²³ “SAA Research Forum.” Society of American Archivists, December 6, 2019,
<https://www2.archivists.org/publications/research-forum>.

²⁴ Cal Lee, “Embracing the D Word - Placing Archives Development in the R&D Landscape,” Society of American Archivists Annual Meeting Research Forum, August 12, 2014,
<http://files.archivists.org/pubs/proceedings/ResearchForum/2014/slides/Lee-ResearchForumSlides2014.pdf>.

²⁵ NEH Division of Preservation and Access, “Research and Development,” National Endowment for the Humanities, accessed April 21, 2017,
<http://www.neh.gov/grants/preservation/research-and-development> and
<https://www.neh.gov/divisions/odh/grant-news/neh-research-development-grants>.

in experimentation in “Collections as Data: Conditions of Possibility,” calling for collection curators “to embrace experimentation that accommodates and even embraces the value of failure as equally as success.” It “is often the case,” Padilla says, “that there is an expectation that new ground is broken but little is done administratively to free up individual time to contribute to new projects.”²⁶

In their *Preliminary Report*, the MIT Task Force on the Future of Libraries identifies R&D as a key pillar of the library of the future and calls for the establishment of an R&D enterprise based in the library—modeled on Harvard’s Berkman Klein Center for Internet and Society—that would tackle information science and digital curation challenges.

Libraries and publishers across the globe are experimenting with new ways of disseminating scholarship and are increasingly seeking rigorous interdisciplinary research to inform the development and deployment of these new models, services, and tools. Although research and development was not originally an area of focus for the Task Force, it became clear through the course of our work that progress toward our vision of the Libraries as an open global platform requires significant investment in research, development, and experimentation.²⁷

Many questions remain. How might the current infrastructure for research and scholarly communication within the archives field need to evolve to sustain and nurture a culture of R&D? How can R&D models of work be built into practice as a matter of course, both at the institutional level and at the level of the individual (in terms of job descriptions and expectations or freedoms)? Libraries

²⁶ Thomas Padilla, “Collections as Data: Conditions of Possibility,” Talk given at *Collections as Data: Stewardship and Use Models to Enhance Access* symposium at the Library of Congress in September 2016, <http://www.thomaspadilla.org/2016/09/29/possibility/>.

²⁷ MIT Ad Hoc Task Force on the Future of Libraries, “Institute-wide Task Force on the Future of Libraries—Preliminary Report,” (2016), <https://future-of-libraries.mit.edu/sites/default/files/FutureLibraries-PrelimReport-Final.pdf>.

and archives have some experience exploring models of scholarly R&D, but how might archives benefit from adopting models of corporate R&D from the fields of economics and management? After briefly outlining our study and the initiatives it inspired, we will circle back to these questions in the discussion portion of this paper.

Part I: Survey and Interviews

Our study was exploratory in nature—because there had been no empirical research on existing born-digital access practices across the archives landscape, our goal was to understand the state of the field and identify common challenges and concerns, as well as bootstrapped, innovative solutions that practitioners were experimenting with but had not yet documented in workflows or conference presentations. In order to map the current landscape of born-digital access, we designed an iterative, participatory, IRB-approved, mixed-methods study. Part I of the study, conducted from summer 2014 through spring 2015, included 1) a survey of cultural heritage practitioners and 2) in-depth follow-up interviews. The qualitative and quantitative survey data were examined to pinpoint significant findings, including aspects of born-digital access that participants classified as important gaps: gaps in tools and systems, in resource allocation and advocacy, in archivist skillsets, in understanding users, and in research and policy. We also identified several areas in which extensive planning was already being undertaken, including: reading room, remote, and online access; metadata for access and processing; and methods for the creation of copies and images. We encourage others to explore our anonymized survey and interview data and extend the research. The preliminary report we published in August 2015 provides a detailed examination of our methods and findings from Part I of our Born-Digital Access Initiative.²⁸

Part II: Hackfest

We used our findings from Part I to design a hands-on Born-Digital Access Hackfest session at the Society of American Archivists (SAA) Annual Meeting in August 2015

²⁸ Rachel Appel, Alison Clemens, Wendy Hagenmaier, and Jessica Meyerson, “Participatory Archival Research and Development: The Born-Digital Access Initiative Dataset,” November 13, 2017, <http://hdl.handle.net/1853/58923>.

(<http://sched.co/2y9i>). Prior to the Hackfest, the Preliminary Report received 2,046 hits; the vast majority of these hits occurred in the six days between our announcement about the Report and the event. Our goal in hosting the Hackfest was to get a large group (in this case, 50 session attendees) involved in analyzing our data and tackling access challenges head-on by developing practical proposals for access solutions.

We derived the Hackfest topics from our data using several methods. First, we extracted excerpts from the qualitative data to which we had applied the codes “SAA Hackathon Ideas,” “Great Quotes,” “Gaps,” or “Plans.”²⁹ Each of us did a close reading of the excerpts, leaving comments about trends we noticed. After that, we had several rounds of live and asynchronous discussion about our comments, resulting in a document that further distilled the topics and translated them into a list of specific, actionable Hackfest ideas. We then voted on the top four Hackfest topics we had developed, and these became the foundation of our Hackfest.

During the Hackfest, we gave each of the four teams one of these topics: understanding users, advocacy, agile methods, and an archivist training bootcamp. We tasked the Hackfest teams with working on a project proposal that outlined possible solutions and strategies for their assigned topic.

We established the following criteria for the collaborative projects the teams would propose:

- external funding could be made available for the project;
- the project goal would be to produce a tangible deliverable (e.g., a publication or report, tool, website, database, data set, conference or event) that could help a wide range of practitioners to provide better access to born-digital material;
- the project would focus on ways to improve the practical, day-to-day access process for practitioners (rather than theoretical explorations); and
- the project should involve practitioners from multiple institutions.

²⁹ Ibid.

Each team had the following roles.

- One Researcher: a Born-Digital Access Initiative research team member who assisted in starting the Hackfest Team and collaborated with the Leader to complete a proposal after the SAA Annual Meeting.
- One Leader: a member of the Hackfest team who volunteered to lead the discussion and to complete a proposal after the Annual Meeting. The Leader's primary responsibility was to ensure that the group completed their goals in the time allotted for each portion of the Hackfest. We asked the Leader to be comfortable dedicating at least six hours between August and December to polishing their team's proposal and writing a short blog post for the SAA Electronic Records Section (ERS) blog.³⁰
- One or two Notetakers: one or two members of the Hackfest team who volunteered to take notes during the SAA Hackfest session. These notes were the primary documentation from the in-person Hackfest session and served as the basis from which the group continued its work to complete their proposal.

During the in-person session, the teams had 45 minutes to sketch out a framework for their proposal. We provided each team with anonymized excerpts from our research data, as well as a list of additional resources that could be helpful for their topic. While the initial creation of the proposals was done during the SAA session, from August 2015 through January 2016, the Hackfest Teams used their notes from the SAA session to develop polished, two-page executive summary style proposals (similar to what one might create for a grant proposal) for collaborative projects that would confront current obstacles and have significant practical impact on archivists who were working to provide access to born-digital materials.

Desired Outcome

Essentially, the aim of the Hackfest was to prototype an innovative model of using research results to kickstart collaborative

³⁰ See BLOGGERS: The Blog of SAA's Electronic Records Section, accessed December 28, 2019, <https://saaers.wordpress.com/>.

progress towards the future of archival practice. We tried to outline straightforward objectives for each team, with clear structures for achieving those objectives. Our hope was that the teams' proposals could be used to organize actual collaborative projects in the near future, led by team members or by others in the archival community. Because there was overlap between the community that participated in Part I of our study and the community that participated in Part II's Hackfest, we envisioned that the proposal-creation process would result in participatory design, broadening awareness and community engagement on actionable next steps for addressing the challenges of born-digital access. We also aimed to extend our research group's own reflective practice into collective community reflection.

Actual Outcome

The Hackfest was an experiment—we were asking volunteers to dedicate valuable time to ad hoc teams—so we expected that momentum would necessarily decrease for some of the team members. We initially tried using Google Groups to facilitate the work of the teams, but a combination of email and Google Docs ended up being more convenient for everyone. We provided templates for the proposals and blog posts,³¹ but attempted to stay in the background of the teams' proposal generation as much as possible. In cases where team members were unable to invest time in the proposals, however, we stepped in to help the teams complete their objectives. Although some of the Hackfest teams were able to maintain more consistent momentum and engagement than others, all four of the Hackfest teams succeeded in publishing their proposals on the SAA Electronic Records Section (ERS) Blog.³² The proposals formed the cornerstone of an ERS Blog series on Born-Digital Access and garnered heavy traffic for the blog. As of October 2016, the proposals had been viewed a total of 2,455 times and the Born-Digital Access blog series had received 7,586 views. These figures,

³¹ Jessica Meyerson, Alison Clemens, and Wendy Hagenmaier, "Born Digital Access." Open Science Framework, September 21, 2017, <https://osf.io/yxyy5/>.

³² Born-Digital Access Blog Series, SAA Electronic Records Section Blog, accessed 2017-09-17, https://web.archive.org/web/20170917195207/https://saaers.wordpress.com/tag/born-digital_access/ and https://web.archive.org/web/20170917195559/https://saaers.wordpress.com/tag/born-digital_access/page/2/.

along with the 2,046 views of our Preliminary Report over a six-day period, suggest significant engagement on the part of the archives community.

From the Preliminary Report to the Hackfest proposals, Part II of the study suggested that it is worthwhile to transform research into practical developments and to share works in progress. Our experience suggests that the engagement and vulnerability involved in sharing works in progress resonates with people, particularly practitioners who are working to determine and achieve best practices in still-developing areas of digital archives and user services.

Significantly, one of the Hackfest teams has carried their proposal forward after sharing it with the SAA ERS blog, accomplishing not just the objective we set out for them, but also moving towards our broader goal of kickstarting practical developments (i.e., the “D” in “R&D”). The Bootcamp for Born-Digital Access Team, led by Dan Johnson of the University of Iowa, met nearly monthly following the Hackfest, conducted an environmental scan of born-digital access educational opportunities, and created a curriculum structure for training opportunities. The Team piloted the bootcamp in a regional archival conference in New England and a professional organization meeting in Philadelphia and created a flexible, extensible framework for informal educational opportunities centering around developing areas of digital archives work.³³ Parts of this work later evolved into the Digital Library Federation Born-Digital Access Working Group that focuses on researching and advancing the practice of providing access to born-digital material.

Despite the initiative of the Bootcamp for Born-Digital Access Team, group members encountered obstacles in their effort to create and pilot the bootcamp. These issues centered around limited—and in this case, insufficient—educational models for professional organizations. The team found that experimentation within the professional continuing education sector tends to be disincentivized by existing educational cost structures (i.e., the desire for professional organizations to make a profit from course

³³ Alison Clemens, Jessica Farrell, and Daniel Johnson. 2018. “Born Digital Access Bootcamps.” OSF. June 13, <https://osf.io/mrw9a/>.

registrations). Although the team was able to locate a venue to pilot the bootcamp, doing so required extensive research and vetting, as well as flexibility from the selected regional organization.

Because the bootcamp curriculum addresses user research, agility, and advocacy, it offers an opportunity to address all four of the original Hackfest team topics and the significant gaps and plans we extracted from Part I of our study. The exceptional commitment of this Hackfest Team demonstrates that the team topics, gaps, and plans we derived resonate with a core group of archivists, lending credence to our findings. As we moved through Part II of our study, we began to define our work not just as an exploration of born-digital access, but also as an investigation of participatory research models; an exploration of R&D for archives; and a deconstruction and critique of existing education, research, and scholarly communication infrastructures in the archives field.

Discussion and Conclusions

Adding Research in Practice to the Archival Repertoire

The unique and uncertain situation comes to be understood through the attempt to change it, and changed through the attempt to understand it.³⁴

Schon uses the concept of repertoire to explain the resources that practitioners draw from when they attempt to address a unique challenge or situation. According to Schon, “The practitioner has built up a repertoire of ideas, examples, situations and actions. [...] A practitioner’s repertoire includes the whole of [their] experience insofar as it is accessible to [them] for understanding and action.”³⁵ Based on this description, the “archival repertoire” can be described as consisting of three layers: professional (drawing on a shared body of theory, literature, and formal standards, e.g., foundational concepts such as respect des fonds or encoding standards such as EAD); institutional (drawing on local standards, norms, rationales, and attitudes regarding collection development, risk and experimentation, system implementation, professional development,

³⁴ Donald A. Schon, *The Reflective Practitioner: How Professionals Think In Action* (New York: Basic Books, 2008), 132.

³⁵ *Ibid.*, 138.

etc.); and individual (drawing on a single archivist's position within their professional network, breadth of experience working with collections of different sizes and types, attitude towards risk and experimentation, etc.).

Gilliam, Gounts, and Garstka found that while formal structures, such as policy mandates, are positively correlated to the likelihood of collaboration, informal relationships also influence collaboration.³⁶ We note that the four research team members behind the Born-Digital Access Initiative attended the University of Texas at Austin School of Information between 2010 and 2012. Our success collaborating in group projects and student activities allowed us to remain in contact and seek each other out for professional support. We have shaped and inspired each other's individual repertoires. However, unless research in practice is formally integrated into daily job responsibilities and supported on a much wider scale, archival research will continue to be an unfeasible challenge for many librarians and archivists. We conducted this research largely on our own time, without grant funding—a situation that requires significant privilege. We were fortunate to be able to invest evening and weekend time; we had easy access to e-journals and online databases through our workplaces; we were not responsible for caring for dependents; and we had strong personal support systems. We agreed to make this commitment, but we acknowledge that this aspect of our work is not sustainable or a model to be lauded. One of the key components of research in practice is collaboration, however, collaboration takes time.³⁷ We believe that any formal commitment to research-in-practice demands an explicit acknowledgement of the time required to do the work, which could mean revising job descriptions to reflect realistic expectations about staff capacity while prioritizing activities that yield long-term benefits for organizations and the field at-large.

We argue that research in practice must be formally

³⁶ Rebecca J. Gillam, Jacqueline M. Counts, and Teri A. Garstka, "Collective impact facilitators: how contextual and procedural factors influence collaboration," *Community Development* 47, no. 2 (2016): 209-224, <http://dx.doi.org/10.1080/15575330.2015.1133684>.

³⁷ Nancy Y. McGovern, "Radical Collaboration: An Archival View," *Research Library Issues*, no. 296 (2018): 53-61, <https://doi.org/10.29242/rli.296.8>.

acknowledged and supported as a critical component of the archival repertoire in order to be available and accessible to the archivist for facilitating understanding and action. The challenges of curating, preserving, and providing access to emerging born-digital material present innumerable unanswered questions that require research, data gathering, and solution-building. If archivists are to meet those challenges, we must engage in research on a much broader scale. Beyond that, we need to reframe and perhaps redefine what we mean by research in our field. Digital archiving demands practitioner (not just academic) involvement in research on a day-to-day basis, and that research must lead to development and knowledge production. Inherent in this is the need for practitioners to be granted time and resources to conduct research and translate it into practical progress and for administrators and institutions to see that investment as the most fiscally efficient and ethically sound means of increasing productivity and meeting organizational and professional missions.

Indeed, the nature of digital archives work blurs the line between practice and research—much of digital practice itself *is* research, as archivists test new methods and gather information about emerging areas of the field. This research activity must be supported at the individual level, but it also demands community. In the face of many unknowns about stewarding digital materials, archivists can no longer work in silos but must collaborate via participatory networks. The knowledge production of those networks should take place in the open, with access to drafts of works-in-progress; the flexibility to support agile, organic solution building; and stakeholder involvement. Simultaneously, the mechanisms currently available to share insights resulting from research in practice in the archives field must evolve into a flexible ecosystem that nurtures transparent, participatory research and yields practical knowledge production. Static publications locked behind paywalls cannot do enough to move the field forward at the pace required to keep up with digital change. There is an urgent need for archival practitioner-researchers to adopt existing models of open, participatory research production and publication that inspire reuse and concrete progress.³⁸ At the

³⁸With the phrase “models of open,” we refer to tools and infrastructure as well as communities that are using open infrastructure effectively. Current tools that facilitate knowledge production in the open include, among others: Open Science Framework, a “free open platform to support your research and enable

same time, the bootcamp experience has shown that there is unmet demand in the field for more flexible models of continuing education that foster learning, discussion, and communities of practice around emerging research.

Participatory Archival Research and Development

Towards the goal of adding research in practice to the archival repertoire, we offer this outline of a high-level framework called Participatory Archival Research & Development (PAR&D). PAR&D is not a revolutionary model or approach, but rather an abstraction of our personal experiences that pulls from existing models and our aims and hopes for the future of research in our field.

In this section, we outline PAR&D in each of its component parts and sketch out associated themes and strategies.

Participatory

- Themes: collaboration, openness, inclusivity, transparency
- Strategies:
 - Create open data for access and reuse
 - Support research approaches, methods, publications, and platforms that facilitate frequent and informal sharing and lower the barrier of entry into research participation
 - Include and encourage diverse PAR&D participants, including new professionals and members of underrepresented communities
 - Foster a culture of documentation
 - Participate in professional alliances within and beyond libraries, archives, and museums
 - Create and foster clear, just expectations for professional conduct and inter-personal and -professional work

collaboration” (<https://osf.io/>) and PubPub, a platform that enables communities to “collaboratively draft, review, and publish in an integrated, iterative process” (<https://www.pubpub.org/>). Participatory networks that serve as exemplars for open knowledge production include, among others, the Digital Library Federation (DLF) Groups, (<https://www.diglib.org/groups/>, <https://osf.io/qa8kc/>).

Archival

- Themes: trust, context, education, temporality
- Strategies:
 - Reflect throughout the research, development, and practice process in order to reinforce key archival values of trust and integrity
 - Acknowledge and embrace that changes in archival repertoires (skillsets, tools, education) do not follow a linear trajectory; the practice is temporally mixed, reflecting the intergenerationality of practitioner groups, archival collections, and user communities

Research

- Themes: reflection, questioning, methods
- Strategies:
 - Commit formally to invest time in research at the organizational and professional level
 - Emphasize iterative reflection and questioning of status quo perspectives and practices
 - Diversify ways of knowing (e.g., traditional research methods such as surveys and interviews as well as experiential methods such as hackfests) to deepen our understanding of archival practice
 - Create shared, participatory professional research agendas set and informed by communities beyond the boundaries of any single professional organization
 - Ensure that the evolving skills required for PAR&D, including reflective practice, are addressed in graduate and professional education programs

Development

- Themes: action, change, practice
- Strategies:
 - Focus on translating research results directly and quickly into practice; fail forward
 - Invest in R&D not just because it yields new knowledge (taking a cue from scholarly R&D), but because it is efficient (taking a cue from corporate R&D) and will enable archives to be seen as vital

producers within the knowledge economy,³⁹ yielding longer-term access to cultural heritage

- Acknowledge the value of cultural heritage professionals as maintainers of collections and professional communities as well as discoverers of concrete insights that fuel practical progress
- Nurture agile professional organizations that facilitate ad hoc groups and communities of practice

PAR&D represents the way we have grown to conceptualize research in practice through our experience and reflection over the course of our study. Its individual themes are not unique, and many of its strategies are already being implemented in the field. But taken together, PAR&D offers a high-level framework that might inspire individuals, institutions, and organizations to question the underlying assumptions shaping the archival community and to enact practical change based on research findings. The challenges archives face in the digital landscape demand that we grow our repertoires and embrace sustained engagement in honest reflection on our professional space, our institutions, and ourselves. We call for colleagues to root that process of honest reflection in our professional ethics of inclusive and meaningful long-term access to cultural heritage. Reflection empowers us to maintain trust with our user communities and to sustain the archival field itself because it encourages transparency, rigor, collaboration, and iterative innovation.

By sharing and reflecting on our personal experiences of research in practice, we aim to extend our gratitude to colleagues who challenge themselves and those around them to embody and formally support the themes and strategies of PAR&D, and to extend a broader net of support to colleagues who may be striving to make space for reflection, research, and development in order to advance

³⁹ As discussed by Drucker, the “knowledge economy” refers to how “the systematic and purposeful acquisition of information and its systematic application...are emerging as the new foundation for work, productivity, and effort throughout the world” (266) and “the idea that knowledge, systematically acquired, could be applied systematically to work.” Peter F. Drucker, *The Age of Discontinuity : Guidelines to Our Changing Society*, (New Brunswick: Transaction Publishers, 2000), 269.

the archives profession.

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