COLERIDGE
INITIATIVE

Scaling Work-Based Learning in Arkansas

Applied Data Analytics Training
Summary Report

Prepared for the State of Arkansas

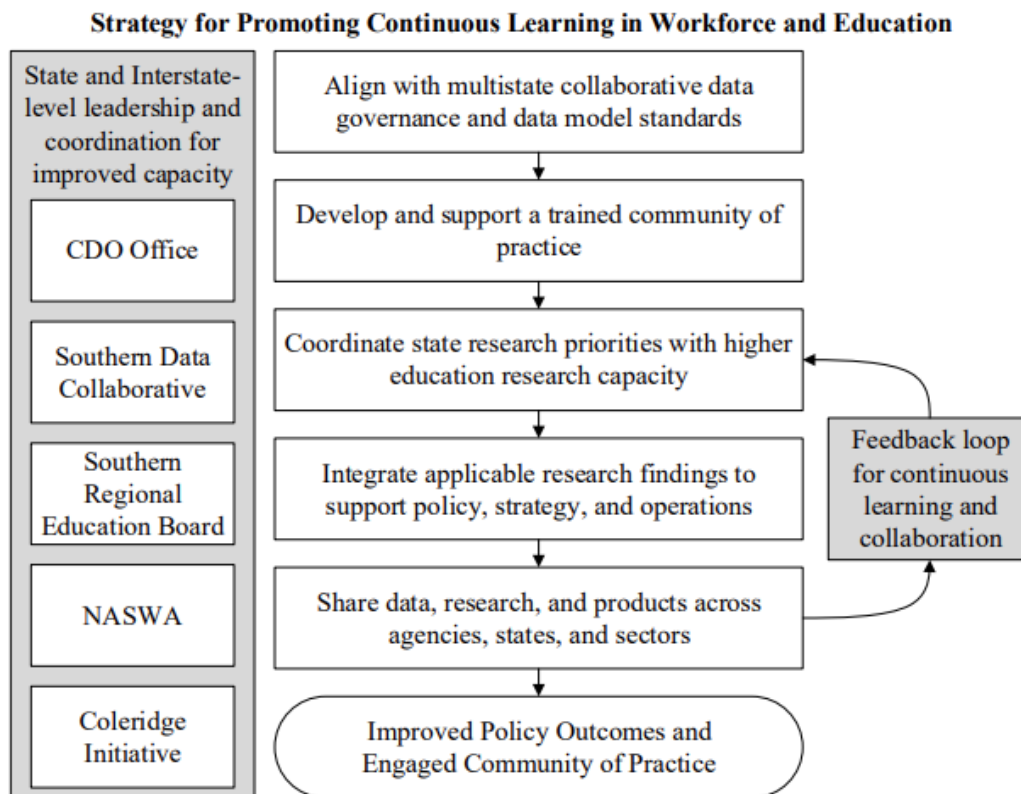January 2023

Contents

Summary

In 2015, the National Governors Association (NGA) Center for Best Practices, with support from the Siemens Foundation, embarked on a project to escalate work-based learning initiatives to help address the needs of the rapidly transforming state economies. The State of Arkansas has been involved in this project since 2020 when NGA selected Arkansas to participate in the Policy Academy on Scaling Work-Based Learning. Since then, Arkansas has developed a comprehensive, state-wide team consisting of government, education, industry, and economic development leaders involved in work-based learning. This group has identified a learning agenda consisting of key questions of value to support expansion of work-based learning in Arkansas.

The Arkansas Division of Workforce Services (ADWS) and the ARData team within the Arkansas Division of Information Systems (DIS) are developing capacity for secure analysis of linked administrative data on workforce development programs (including work-based learning) under Workforce Data Quality Initiative (WDQI) funding awarded by the U.S. Department of Labor (DOL) Employment and Training Administration (ETA).

One of the two key strategies supported by the Arkansas WDQI project is to facilitate continuous learning and collaboration through shared standards and governance, analytic capacity building, coordinated research and data product development, and interagency, interstate, and cross-sector collaboration to support improved policy outcomes and an engaged community of practice.

Strategy for Promoting Continuous Learning in Workforce and Education

State and Interstate-level leadership and coordination for improved capacity	
CDO Office	Align with multistate collaborative data governance and data model standards
Southern Data Collaborative	Develop and support a trained community of practice
Southern Regional Education Board	Coordinate state research priorities with higher education research capacity
NASWA	Integrate applicable research findings to support policy, strategy, and operations
Coleridge Initiative	Share data, research, and products across agencies, states, and sectors
	Improved Policy Outcomes and Engaged Community of Practice

Feedback loop for continuous learning and collaboration

To support the WDQI continuous learning strategy, Arkansas partnered with the Coleridge Initiative on the development and delivery of an Applied Data Analytics (ADA) training course. The course was delivered in the Summer of 2022 using the Administrative Data Research Facility (ADRF) to facilitate secure research on administrative data.

To align the course with current state policy priorities, the curriculum and team projects focused on answering key learning agenda questions identified by the Arkansas work-based learning team trained during the NGA Policy Academy On Scaling Work-Based Learning.

Participants from government agencies in Arkansas, Missouri, and Wisconsin, academic institutions in Arkansas and Wisconsin, and Arkansas and California-based nonprofit organizations collaborated in teams to learn and apply modern data analytics techniques to linked interagency and to build peer relationships among and between state agencies, academic institutions, and nonprofits.

This summary report describes the Arkansas Work-Based Learning ADA training course process and products. The report illustrates the value generated to states by using linked interagency data to:

- Inform effective work-based learning policies
- Enhance understanding of work-based learning program participation and outcomes
- Develop products to support informed strategies and consumers

Introduction and Context

The focus of this ADA training course was to introduce and demonstrate the applications of modern data analysis methods to research questions related to work-based learning. At their best, work-based learning programs can provide a suite of benefits for all three parties involved—the participant, sponsoring business, and the state[1]. Research suggests that work-based learning opportunities may result in increased output and improved outlook for employees of businesses investing in such programs[2][3] and amplification in lifetime earnings for participants[4], providing a potential pathway for states to upskill their workforce to meet labor demands. As a result, there has been an emphasis on scaling work-based learning programs at the local, state, and national levels.

This work must be done strategically, though. States have the opportunity to leverage administrative data sources and develop linked data assets to identify high-quality and high-need training. However, legal and technology hurdles have historically limited this data use.

Work-based learning studies in Arkansas represent a relatively nascent field. Arkansas' internal task force identified the need for descriptive statistics presenting current work-based learning uptake. In addition, the group emphasized the possible utility of analyses focused on various aspects of work-based learning—studies assessing value to the individual, employer, and state, both in isolation and in tandem.

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[1] K.Hauge and B.Parton. State Strategies to Scale Quality Work-Based Learning (Washington, D.C.: National Governors Association Center for Best Practices, October 31, 2016).

[2] Kis, V. (2016), "Work, train, win: work-based learning design and management for productivity gains", *OECD Education Working Papers*, No. 135, OECD Publishing, Paris, https://doi.org/10.1787/5jlz6rbns1g1-en.

[3] Change the Equation, "Work-Based Learning: An Employer's Guide" (March 2015), 5.

[4] U.S. Department of Labor, "Apprenticeship Fact Sheet," https://www.dol.gov/sites/dolgov/files/WB/mib/WB-apprenticeships-factsheet.pdf (accessed December 19, 2022).

In this context, the Coleridge Initiative partnered with the Arkansas Division of Information Systems to develop curricula and deliver an ADA training class. Through this training, new data assets were brought together and a collaborative community for shared knowledge expanded—empowering Arkansas agencies to sustainably build a more robust data infrastructure, measures, and research products to inform evidence-based policymaking.

Some of the overarching research questions of the training course were:

- *What are the employment outcomes for work-based learning participants?*
- *Who is participating in work-based learning?*
- *In which industries are work-based learning programs most successful?*
- *Does participation in work-based learning programs lead to better postsecondary outcomes?*

Course Design and Methods

The training course included thirty participants divided into five distinct teams, with careful thought given to the composition of each. Teams were strategically assembled with a mix of backgrounds, including individuals with policy and program knowledge, coding and technical skills, and data and domain expertise. The intention of the blended team composition was to build interagency, multistate, and cross-sector communities of practice. Participants were able to learn hands-on through project-based work using administrative data, analytical methods, and new technologies to answer the identified questions of value. Class participants were provided secure access to data from registered apprenticeship and career and technical education programs as well as postsecondary completions and employment data to conduct their analyses.

Most participants were staff from Arkansas state agencies—Arkansas' Division of Information Systems, Department of Education, Division of Higher Education, Division of Workforce Services, Department of Corrections, and Office of Skills Development—with other agency staff from Kentucky's Center for Statistics, Wisconsin's Department of Workforce Development, Missouri's Department of Economic Development, and Los Angeles' Homeless Services Authority. Additional participants came from academic institutions, such as the University of Arkansas, the University of Arkansas at Little Rock, and Madison College, and the Arkansas Center for Data Sciences, a nonprofit in Arkansas working to augment the state's information technologies pipeline. Teams were assembled based on a mix of participants' professional roles, in terms of type and seniority, and each team was assigned a lead—from the Arkansas Division of Information Systems, the University of Arkansas, or the Coleridge Initiative—to instruct, guide, and facilitate the training and research process.

The Applied Data Analytics course followed a module-based approach. Participants first learned basic coding principles in Module 1 to equip them for working with the data. Modules 2 and 3 built on this foundation and exposed participants to the data generating and research processes. Beginning by formulating questions unique to each team, Module 2 lectures covered topics related to data collection and coverage and cohort analysis, and Module 3 lectures explored alternative approaches to working with the data to maximize computing efficiency and expand analyses. Participants ended with a final presentation of their work to share what they had learned about work-based learning efforts in Arkansas—and in working together with new partners—reinforcing the importance of communicating data and results to various audiences. See Figure 1 for more information about the structure of the training.

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Figure 1. A Model-based approach to the Applied Data Analytics training covers the conceptual framework that underlies the research process
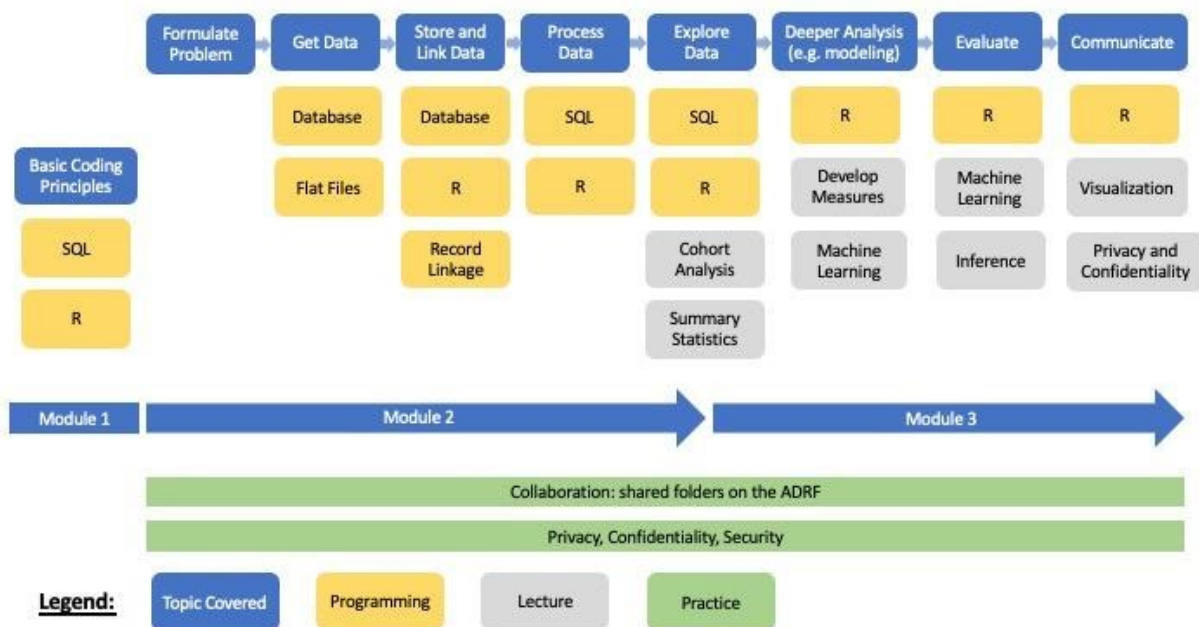

Topics covered in the training were developed in partnership with the State of Arkansas to include the areas considered most relevant. These topics were guided by the textbook *Big Data and Social Science: A Practical Guide to Methods and Tools, Volume 2*; the textbook is a well-recognized resource, ranked in the top 15 of the 100 best data science books.[5] The full scope of topics covered in the ADA course is described in the Appendix (Course Materials). In brief, the course covered working with various administrative data sets to prepare participants for Arkansas work-based learning and employment data, linking records across datasets, generating summary statistics and more complex statistical analysis, and communicating data through visualizations. Additionally, influenced by previous work conducted by the Arkansas Division of Information Systems, the class introduced dimensional data modeling concepts and demonstrated a use case, as the class instructors developed a dimensional data model from the class data assets. The model drastically reduced computing time and allowed for larger, expanded analyses of work-based learning participants across the various data sources.

Teams formulated their unique project and research questions on the field of work-based learning based on broad research topics developed by Arkansas' team on work-based learning. Through unique datasets, participants were able to formulate more narrowly—and in some cases reformulate—their questions based on their continuous understanding of the data available. A unique benefit of this training course is the ability for participants to draw on de-identified datasets historically unavailable to researchers but directly relevant to agency staff—often as owners of the data themselves. In other words, participants are trained through the direct use of their data, enabling them to both examine a more granular view of work-based learning experiences on the individual level (providing unique insights

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[5] http://www.bigdatasocialscience.com/

on small subgroups within the covered population) and to be exposed to the exact challenges of working with messy, administrative data which will remain relevant to staff after the end of the training course.

Figure 2. Visual depiction of the data available to class participants
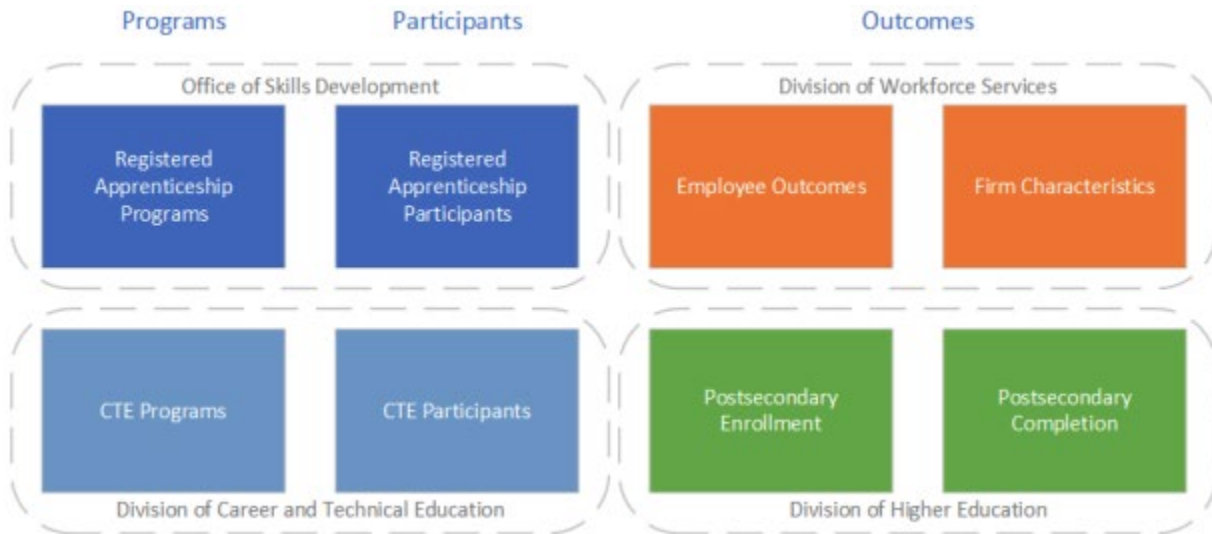
The specific data sets used in this training course were data on registered apprenticeships from the US Department of Labor, a restricted-use crosswalk from the Arkansas Office of Skills Development, postsecondary completions data at all levels that are reported to the US Department of Education's Integrated Postsecondary Education System Completion Survey courtesy of the Arkansas Department of Higher Education, career and technical education data from the Arkansas Division of Career and Technical Information, and Arkansas Division of Workforce Services data on wage records and employers, which covered all individuals employed by businesses in Arkansas that participate, as required by law, in the Unemployment Insurance program and its trust fund. Figure 2 displays the range of data used in the training.

Participants were uniquely able to integrate the different data sources for their analysis through the award-winning ADRF, a secure cloud-based computing platform designed to promote collaboration among government agencies and facilitate documentation for more consistent and quality data use. Through this collaborative platform, the ADA training participants can generate new insights previously not possible. Data dictionaries were provided to participants to assist in their analysis.

A project template (see Appendix: Course Materials) was provided to participants to guide each step of the training by prompting participants to apply the topics covered in each module to their specific research questions.

Project Summaries

Table 1 includes an overview of each team's specific research question within the overarching theme of the course. While the broader questions of the course theme were developed in partnership between the State of Arkansas and Coleridge staff, each team developed its specific question based on the relevance to their interests.

Table 1. Participants sought to answer specific questions within the overarching theme of work-based learning in Arkansas.

Team Number	Project Question	High-level Results
Team 1	What is the existing work-based learning landscape in Arkansas? Do all Arkansans have equitable access to WBL opportunities? If not, for what subpopulations and/or regions are there disparities?	Arkansas' Central and Northwest regions have more Registered Apprenticeship (RA) opportunities than other regions. The Delta region and high-poverty counties are underrepresented. Women, as well as racial minorities, are underrepresented in RAs.
Team 2	What are the employer retention outcomes for Arkansas Registered Apprenticeship Program (RAP) completers? What, if any, demographic variables are associated with higher retention rates?	Fewer individuals remain with the same employer post-RAP completion. There was no visible impact of race or veteran status on retention. Lastly, construction jobs have the least retention in the 3 years post-RAP completion.
Team 3	Do apprenticeship programs help justice-involved individuals achieve success in the free-world labor market in Arkansas?	Justice-involved individuals in apprenticeship programs have lower educational attainment and minimal wage attainment. Even though completion rates for justice-involved individuals are higher than for free-world individuals, access to high-paying opportunities is lacking.

Team 4	What are the retention trends within the Arkansas work-based learning workforce pipeline exclusively for those who complete work-based learning apprenticeships? Additional related questions include: • How does employer-level retention compare to industry retention, • How does retention relate to wages? • How does retention differ by demographic groups, particularly geographic groups?	Individuals who complete an apprenticeship program are likely to be retained by their apprenticeship employers and earn more money than non-completers.
Team 5	Does RA completion impact wages? What is the impact of RA programs on individual wages? What role does program completion, gender, race/ethnicity, age, education, and location of work have on wage?	Individuals who complete apprenticeship programs in Arkansas do not experience an immediate increase in wages upon completion. However, being an apprentice who completes the program is associated with higher wage outcomes over time.

Team 1 - Work-Based Learning: What is the Current Reality in Arkansas?

Team 1 asked the following questions: "What is the existing work-based learning landscape in Arkansas? Do all Arkansans have equitable access to WBL opportunities? If not, for what subpopulations and/or regions are there disparities?" Team 1 sought to create a dashboard allowing users to view and understand the level of apprenticeship participation and completion at the state and county level. To answer their question, Team 1 used the following data sources: Registered Apprenticeship Partners Information Database System (RAPIDS), US Census data, and the North American Industry Classification (NAICS) Descriptors.

Through descriptive analysis, Team 1 found that Arkansas' Central and Northwest regions have more RA opportunities than other regions. Furthermore, they found that the Delta region and high-poverty counties have disproportionately low RA opportunities. Delving into sub-groups, Team 1 compared RA participation to national trends and found that women are underrepresented in RA opportunities compared to their representation in the state (5% vs. 51%). White participants were overrepresented in RA opportunities, whereas black and multi-race participants were underrepresented.

– Team 1 Presentation
– Team 1 Report

Team 2 - From Trained to Retained: An Analysis of Retention Outcomes for RAP Completers

Team 2 researched the following questions: "What are the employer retention outcomes for Arkansas Registered Apprenticeship Program (RAP) completers? What, if any, demographic variables are associated with higher retention rates?" They were specifically interested in calculating the number of quarters an employee remained with the same employer immediately (maximum time of 3 years/12 quarters) post-apprenticeship. To answer their question, Team 2 utilized the RAPIDS data to develop their cohort, and employment data from the Arkansas Division of Workforce Services (DWS) Quarterly Census of Employment and Wages and the Unemployment Insurance Quarterly Wage LEHD dataset to build their measures.

Team 2 found that fewer individuals (43%) across all groups remained with the same employer for the years post-RAP completion than not. They found no significant impact of race and veteran status on retention rate. Regarding job sectors, Team 2 found that construction jobs had lower retention rates than jobs in other sectors, at approximately 41% relative to other sectors, which came in at roughly 78 percent. For individuals with multiple jobs, Team 2 found that they were less likely to remain with their initial employer than those with a single employer.

– Team 2 Presentation
– Team 2 Report

Team 3 - Apprenticeship Experience of Justice-Involved Individuals in Arkansas: Barriers to Success

Team 3's research focused on the barriers to success for incarcerated individuals, asking the question, "Do apprenticeship programs help justice-involved individuals achieve success in the free-world labor market in Arkansas?" By barriers of success, the team evaluated education attainment, wages, and occupational choice, using the RAPIDS data to approach their question.

Team 3 found that justice-Involved individuals had lower educational attainment. They also found that justice-involved individuals had minimal to non-existent wages and fewer higher-paying job opportunities. Regarding apprenticeship, though, Team 3 found that justice-involved individuals have a higher completion rate than free-world individuals.

– Team 3 Presentation
– Team 3 Report

Team 4 - Retention Trends within Arkansas' WBL-to-Workforce Pipeline

Team 4 focused on retention trends within the Arkansas work-based learning workforce pipeline for individuals who have completed work-based learning apprenticeships—specifically retention comparisons between different levels of employers and industries, the relationship of retention and wages, and differences across demographic groups, particularly geographic groups. In carrying out their project, the team worked with RAPIDS, Unemployment Insurance Quarterly Wage Data, and the Quarterly Census of Employment and Wages data.

The team discovered that individuals who complete an apprenticeship program are more likely to be retained by their apprenticeship employers and earn more money than non-completers. Specifically, the group found that close to 70% of apprentices are retained by specialty trade companies two years after completing their apprenticeships and that completers earn $100 more per week than non-completers. Additionally, from a regional aspect, Team 4's results indicated that employers in rural parts of the Arkansas Delta region were more likely to retain apprenticeship completers than those in other regions.

– Team 4 Presentation
– Team 4 Report

Team 5 - Registered Apprenticeship Programs: Does Completion Matter?

Team 5 explored employment outcomes for RA graduates, evaluating wage outcomes across employers, completion status, gender, and race. The group developed their cohort using the RAPIDS data and supplemented it with Unemployment Insurance Quarterly Wage data and the Quarterly Census of Employment and Wages data.

The team found a high concentration of enrollees in a few traditional apprenticeship programs in Arkansas, such as electrician and plumber programs. In addition, they discovered that apprenticeship programs have high attrition rates, with the majority of individuals not completing the program, and is particularly pronounced in electrician apprenticeships. Furthermore, their selected cohort was overwhelmingly male, with only a small percentage (about 2%) being female, and had an underrepresentation of Hispanic and non-white individuals compared to their share of the population in Arkansas. Non-white and Hispanic individuals also had lower completion rates than their white non-Hispanic counterparts completing programs at only half the rate. From a wages standpoint, individuals who completed apprenticeship programs in Arkansas did not experience an immediate increase in wages upon completion. However, over time, they had higher wages. Within these findings, their results indicate a divergence of wage outcomes between completers and non-completers as time progresses, but the rate of wage growth is similar in both groups.

– Team 5 Presentation
– Team 5 Report

Course Outcomes

Throughout the ADA training course, participants gained an understanding of the research process, new data products, and the type of impact that well-designed data and analyses can generate. Each participant brought a unique perspective that helped build the class into a network that can serve as a valuable resource for future collaboration.

Teams considered important and thoughtful questions. For example, Team 3 concentrated on a small, yet significant portion of work-based learners and developed insights into data coverage in doing so. Over a short period, participants were able to distinctly articulate their interests, identify the analyses that might help them get at those interests, and clearly communicate through spoken, written, and visual mechanisms as the result of their hard work and exploration.

The analyses pursued by participants should be taken in the context that data are not without flaws and participants' research was preliminary as learning exercises. As one example of a data limitation, not all employers within Arkansas report data into the system for which they would be captured in these analyses; certain exempt services and occupations covered under alternative unemployment compensation programs are not included. Still, the work of individuals in this training course serves as a valuable foundation for future research and collaborations.

Concluding Thoughts / Highlights: Building a Community of Practice

A major highlight of the course was the discourse established between participants employed by government agencies, academic institutions, and nonprofits. Inspired by the Midwest Collaborative generated through previous ADA trainings, participants from these organizations have now come together to facilitate greater partnerships, whereby data products and measures can be created to inform policy.

The inherent benefit of expanding the perspectives of those interested in effective policymaking is both tangible and necessary to bridge gaps between theory and practice. For hard-working government agency staff—who may themselves devote effort to collecting and processing data through program administration—gaining a deeper understanding of how data can inform decisions generates clarity around what empirical evidence exists in support of (or against) various policies and programs meant to promote successful work-based policy initiatives. For researchers and academics, on-the-ground input as to what research, products, and outcomes are most useful to government staff can help re-align incentives toward producing for the public good.

For agency staff—in Arkansas and elsewhere—lack of data makes their jobs more difficult. But data do not have value in their own right.[6] Rather, data have value when those staff can draw on them through technical skills, strong networks of expertise, and the understanding of what is needed to answer pressing questions for how to best serve constituents.

The goals of this ADA training were to help participants develop a foundation of technical skills, build a community of practice among leaders invested in societal well-being, and demonstrate the value of using state and federal agency data to inform policy decisions. The output produced makes clear this goal was met, paving the way for subsequent impact.

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[6] https://mitpress.mit.edu/books/democratizing-our-data

Appendix

Participant List

The details in this table reflect a participant's information at the time they were selected to participate.

Name	Title	Employer
James Weese	Research Associate	University of Arkansas
Lydia McDonald	Perkins & Accountability Program Coordinator	Arkansas Department of Education
Mark Baillie	Director of STRIVE, Assistant Professor of Chemistry	University of Arkansas at Little Rock
Maryanne Caldwell	Statewide Transition Manager	Arkansas Rehabilitation Services
Tina Moore	Director of STEM/Computer Science Continuum	Arkansas Department of Education
Clara Knox	Data Engineer	Arkansas Department of Information Systems
Carlos Silva	Economist	University of Arkansas at Little Rock
Julie Saperstein	Economic and Data Analyst	Missouri Department of Economic Development
Shenaye Johns	Business Services/Discretionary Grants Manager	Arkansas Division of Workforce Services
Carrie Anderson	Chief Policy Officer	Arkansas Division of Information Systems
Bryan Rodgers	Software Support Analyst	Arkansas Department of Corrections
Kristen Shryock	Talent Program Manager, Work Based Learning	Arkansas Center for Data Sciences
Mason Campbell	Assistant Director for Policy and Student Success	Arkansas Division of Higher Education
Blake Cannon	Chief Analytics Officer	Arkansas Division of Higher Education
Veronika Gudipati	Graduate Research Assistant	University of Arkansas at Little Rock
Eric Gaither	Systems Coordination Analyst	Arkansas Department of Corrections
Dylan Self	Software Support Analyst	Arkansas Department of Corrections
Robert Hilderbrand	Project Manager	Arkansas Division of Information Systems
Nagaraj Bettadapura	Information Systems Manager	Arkansas Division of Workforce Services
Nagashri Nagaraj	Data Analyst	Arkansas Division of Workforce Services
Samuel Keathley	Workforce Research Analyst	Kentucky Center for Statistics
Molly Sir	Research Analyst	Kentucky Center for Statistics

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Eric Schroer	Senior Analyst	Los Angeles Homeless Services Authority
Serpil Tokdemir Yuce	State System Administrator	Arkansas Department of Medical Services
Priyanka Bejugam	Business Intelligence Specialist	Arkansas Division of Information Systems
Aimee Jahnke	Project Manager and Business Analyst	Wisconsin Department of Workforce Development
Dominic Robinson	Registered Apprenticeship Program and Policy Staff	Wisconsin Department of Workforce Development
Corey Goodrich	Research Analyst	Wisconsin Department of Workforce Development
Lesia Edwards	Program Manager	Arkansas Office of Skills Development
Daniel Sharp	Senior Research Analyst	Madison College

Instructor List

Name	Title	Employer
Instructors		
Nathan Barrett	Vice President, Programs and Development	Coleridge Initiative
Robert McGough	Chief Analytics Officer	Arkansas Division of Information Systems
Benjamin Feder	Research Statistician	Coleridge Initiative
Maryah Garner	Research Scientist	Coleridge Initiative
Rukhshan Mian	Associate Research Scientist	Coleridge Initiative
Josh Edelmann	Assistant Data Scientist	Coleridge Initiative
Allison Nunez	Research Scientist	Coleridge Initiative
Teja Pristavec	Research Scientist	Coleridge Initiative
Ekaterina Levitskaya	Information and Analytics Scientist	Coleridge Initiative
Team Leads		
Denise Airola	Director	Office of Innovation for Education at the University of Arkansas
Josh Edelmann	Assistant Data Scientist	Coleridge Initiative
Ekaterina Levitskaya	Information and Analytics Scientist	Coleridge Initiative
Nishav Mainali	Business Intelligence Specialist	Arkansas Division of Information Systems
Heather Saco	Program Manager	Arkansas Division of Information Systems

Course Schedule

Module 1	
Asynchronous self-paced learning with instructor-led review sessions.	
Thursday, May 5	11:00 AM – 12:00 PM CT
Thursday, May 12	11:00 AM – 12:00 PM CT
Thursday, May 19	11:00 AM – 12:00 PM CT
Thursday, May 26	11:00 AM – 12:00 PM CT

Module 2	
Two hours of live class, consisting of lecture and group work, introducing data science concepts such as project scoping, constructing data sets and measurements, and data exploration and analysis.	
Thursday, June 2	10:00 AM – 12:00 PM CT
Friday, June 3	10:00 AM – 12:00 PM CT
Thursday, June 9	10:00 AM – 12:00 PM CT
Friday, June 10	10:00 AM – 12:00 PM CT
Thursday, June 16	10:00 AM – 12:00 PM CT
Friday, June 17	10:00 AM – 12:00 PM CT
Thursday, June 23	10:00 AM – 12:00 PM CT
Friday, June 24	10:00 AM – 12:00 PM CT

Module 3	
Two hours of live class, consisting of lecture and group work, introducing concepts of machine learning, inference and imputation, privacy, confidentiality, and ethics, and exporting data.	
Thursday, August 4	10:00 AM – 12:00 PM CT
Friday, August 5	10:00 AM – 12:00 PM CT
Thursday, August 11	10:00 AM – 12:00 PM CT
Friday, August 12	10:00 AM – 12:00 PM CT

Final Presentations	
Presentations via Zoom on Friday, September 30 (10:00 AM – 1:00 PM CT)	
Team 2	10:00 AM – 10:30 AM
Team 3	10:30 AM – 11:00 AM
Team 1	11:00 AM – 11:30 AM
Break	11:30 AM – 11:45 AM
Team 4	11:45 AM – 12:15 PM
Team 5	12:15 PM - 12:45 PM
Closing Remarks	12:45 PM - 1:00 PM

Course Materials

Course materials are provided to participants on a separate password-protected webpage. Those materials can be accessed at: AR Resources — Applied Data Analytics (password: adrf)

AR Resources

Home   Module 1   Pre-Module 2 Work   Module 2   Pre-Module 3 Work   Module 3

Presentation/Report   Resources   Contacts

Direct link to each section: Class Materials | Data Documentation | Recommended Readings

QUICK LINKS

- ADRF Login (Okta sign-in required)
  - Setting up your ADRF Account
- ADRF User Guide

CLASS MATERIALS

- Project Template (PDF)
- Project Template (Word Document)
- ADRF Do's and Don'ts
- JupyterLab Tips

DATA DOCUMENTATION

Subject Area Model

Logical Data Model

Database Diagram with Linkages

Inference Space Diagram

Data Sharing Agreement

During- and Post-Course Feedback

During-Course Feedback

Conducting a course online can be challenging. Accordingly, participants were asked to provide feedback daily so that instructors and team leads could customize content, delivery, and logistics to improve the experience of the participants. Below is a summary of the daily feedback:

What did you like about today's program?

- Very informative to understand the scope of the project and what we are getting ready to work on
- The team time was valuable for more detailed and direct communication
- I enjoyed meeting and working with my project team
- Finding resources that we can use to put our programs in the bigger state- and nation-wide context
- Grounding the work we are doing in the bigger context
- Slides were easy to follow and not too wordy, and the speaker was very knowledgeable and made the content interesting
- Great examples of common statistical concepts
- I liked that there was a worked example towards the end to show how the data would be brought together, what values would be excluded at each step, and how the final data could look (for one cohort)
- I liked the subject matter around missingness and the discussion of how to think about this and approach it
- Missingness was a great topic and aspect that we have discovered is very relevant to our research and question
- Learning more specifics about the RAPIDS and employment data
- I think the more we get into the data, the more impactful these sessions are. Today's was especially valuable since it was something we've experienced in the data
- Both the lectures and breakouts are always great - I only have positive things to say about the content
- The topic and presentation of the unsupervised machine learning was really interesting

What about today's program would you have changed or done differently?

- I think more information on the final project report template and the questions in there would be better but that can be obtained by going through it in more detail
- I would have liked to discuss the resource links more
- More time with our teams
- I wish we would have had access to the class materials earlier
- I know we did some of the contextualization of the program during the first intro session, but the introductions and discussion about how we are integrating all of our expertise to answer some questions could have been very valuable at the start for framing the whole effort
- The detailed presentation of the datasets. Since we have the information about the datasets, this seemed redundant to me. Within our breakout group, we talked about what data are available that would be relevant to what we believe we'll be focusing on. My preference would

be to do a condensed 30-minute overview of the datasets and extend the breakout session by 30 minutes

- Interaction is always a bit tricky with large zoom groups. Might help to pause and put up a "checkpoint" type slide up with the question you are asking of the group. It can be hard to quickly switch from listen mode to interact mode without a signal that we are switching

- I would have liked to have examples of probabilistic matching provided

- Several methods for dealing with missingness were discussed broadly but I would prefer more hands-on learning of these methods rather than links to other resources. Something like additional, optional jupyter notebooks or brief discussion of specific methods during lecture

- Provide specific deliverables for the breakout sessions, because our team tends to get hung up on tiny details and we want to make sure we're making the best use of the time

- I appreciate the transparency re: feedback, but 10 minutes is a pretty long time to recap the previous day's comments

- Between the optional workbooks and the team research projects, Module 3 is starting off feeling a little jam-packed, while recognizing the formally required workload is very manageable. Perhaps it would have been better to take an extra week or session to review the optional workbooks or reorient team research projects before new lessons

Post-Course Feedback

The Coleridge team is actively preparing a post-class survey that is expected to be delivered to the participants at the end of March, roughly six months from the final presentations. The survey is expected to be focused on the use of the material used in the class, product development, and collaborative efforts with other participants. The survey results will be shared with the Arkansas Division of Information Systems.