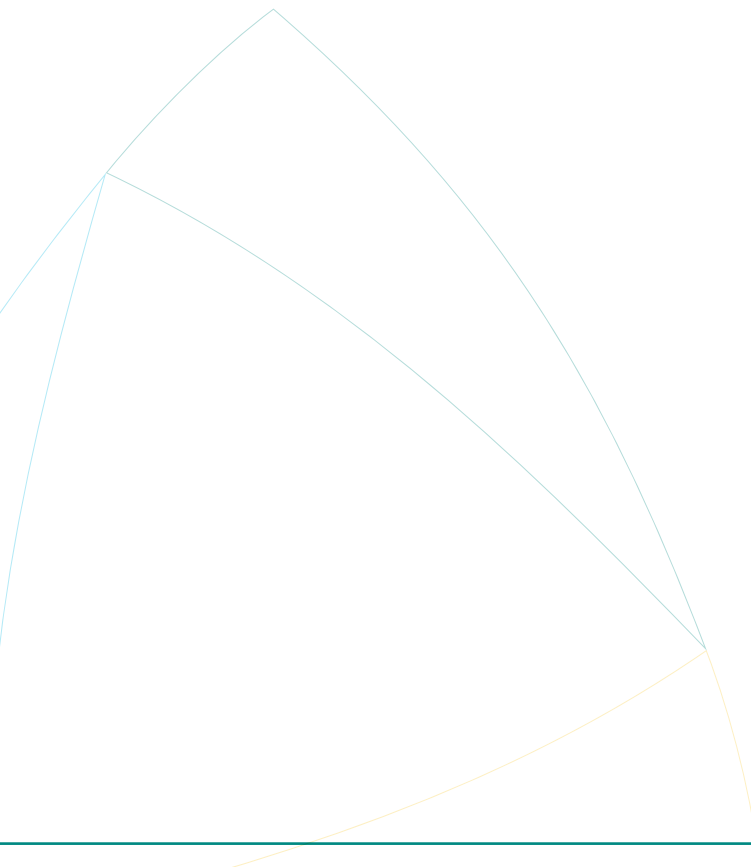




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## INTRODUCTION

Analysis of student-level data to inform policy and promote student success is a core function of executive higher education agencies. Postsecondary data systems have expanded their collection of data elements for use by policymakers, institutional staff, and the general public. State coordinating and governing boards use these data systems for strategic planning, to allocate funding, establish performance metrics, evaluate academic programs, and inform students and their families. The State Higher Education Executive Officers association (SHEEO), as part of a project funded by the Bill & Melinda Gates Foundation (BMGF), surveyed state coordinating and governing boards on their collection and use of postsecondary student-level data. Following this, SHEEO identified seven states whose survey responses indicated an exemplary use of data in specific subject areas. In-person interviews were conducted by SHEEO agency staff in seven states selected for follow-up. Washington was selected for its coordination efforts between multiple agencies contributing to a single data warehouse. Washington's coordination efforts between agencies have been recognized by other scholars in the field. According to the Illinois Collaborative for Education Policy Research, "Washington exemplifies how collecting data and making data available to researchers can aid policymakers in pursuing pressing questions related to educational outcomes".<sup>1</sup>

In late 2015, SHEEO staff visited three postsecondary agencies in Washington State to discuss the Education Research and Data Center (ERDC). ERDC researchers have built a data warehouse which functions as the state's longitudinal data system. ERDC was established in 2007 by the Washington legislature and designated to be administered by the Office of Financial Management (OFM), which conducts budget forecasting. After data sharing agreements between state education agencies and public institutions of higher education were established, the Washington legislature passed a bill in 2009 requiring ERDC to identify critical research and policy questions, lead P-20W data governance, and make recommendations to the legislature. To accomplish these objectives, Washington applied for and received grants from the U.S. Departments of Education and Labor to increase access to information and expand ERDC's data to include workforce programs.

OFM staff host quarterly meetings<sup>2</sup> with a number of government agencies in Washington to collaborate and discuss potential, current and upcoming longitudinal research projects in the state. SHEEO staff attended one of these quarterly meetings during the visit. After meeting with OFM staff and attending the research coordination committee meeting, SHEEO also conducted interviews with members of the State Board of Community and Technical Colleges (SBCTC), which coordinates two-year institutions in the state, as well as the Washington Student Achievement Council, which coordinates public higher education.

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1. Witt, A., Linick, M. & Brewer, J. (2013). *State Longitudinal Data System (SLDS) Research Agendas: National Context and Instructive Models*. University of Illinois at Urbana-Champaign. Champaign, IL.
  2. See <http://www.erdca.gov/about-us/data-governance/research-and-reporting-coordination-committee> for additional information about ERDC's research and reporting coordination committee.

## DATA GOVERNANCE WITH MULTIPLE STAKEHOLDERS

Joining unit record data from multiple sources can present a host of technical, procedural and sometimes political challenges to data administrators. After data sharing agreements and memoranda of understanding are signed between agencies, the data administrators must determine how to prepare longitudinal datasets. Some states accomplish this by building custom data marts from multiple sources, commonly referred to as a federated model.

A P-20W warehouse, on the other hand, is a dedicated student data repository that is continually updated by multiple agencies. One advantage of the P-20W warehouse model is that because each agency replicates, cleans, and transforms data that is submitted to the warehouse, the data tends to be of high quality<sup>3</sup>.

However, maintaining a P-20W warehouse requires a significant investment of technological infrastructure, considerable coordination between agencies, and a large amount of staff time to prepare data to submit to these warehouses, in addition to any time required to research student outcomes and report findings<sup>4</sup>. The U.S. Department of Education's Statewide Longitudinal Data System (SLDS) grants provided funds to many states to meet this challenge.

Since the advent of these warehouses in the early 2000s, guidelines for their establishment have been written by staff from a variety of sources, including the federal government and nonprofit education research agencies. The Workforce Data Quality Campaign offered the following guidelines: Legislation authorizing data sharing between government agencies should discuss which data can be shared, who must share it, who can receive it, purposes for which the data can be used, and related privacy and security procedures.<sup>5</sup>

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3. Condelli, L. et al. (2012). *NRS Guide to State Longitudinal Data Systems*. American Institutes for Research. Washington. D.C.

4. Ibid.

5. Workforce Data Quality Campaign: Building on the Blueprint, Improving State Workforce Data webinar  
<http://www.workforcedqc.org/resources-events/events/webinar-building-blueprint-improve-state-workforce-data>

# WASHINGTON'S P-20W WAREHOUSE MODEL AND ADMINISTRATION

Washington is an example of a state which has followed these guidelines and advice. Washington's SLDS grant funds were leveraged to establish the ERDC. According to an analysis of education research agendas, Washington prioritized a number of longitudinal research questions in their state strategic agenda<sup>6</sup>. Questions included:

1. To what extent are Washington's bachelor's degree holders going on to graduate/professional school?
2. How do the performance profiles of high mobility students compare to those of other students, e.g., attendance, proficiency, graduation, postsecondary enrollment?
3. How are students from specific high schools performing at the postsecondary level, and what are the strongest predictors of postsecondary success?
4. To what extent does swirling (transferring between institutions) occur among Washington baccalaureate and community and technical colleges?
5. What are the education and workforce outcomes of foster youth?

Answering each of these questions requires information from multiple government agencies. In 2005, Governor Christine Gregoire convened a committee (Washington Learns) to look at the broad education situation in the state and what reforms should be pursued across the board. Some of the questions developed in the research agenda were influenced by this committee. In addition, according to Jim Schmidt, Senior Forecasting Coordinator of OFM, one of the committee's recommendations was to create an education data center where data across the education spectrum could be made available for research and program analysis.

Washington is different than most states in the scope of administration of P-20W warehouses in that a non-education or workforce agency administers the warehouse and coordinates its efforts. According to Schmidt, OFM is a broad-based government budget and accountability agency that oversees taxes and revenues for health care and social services, in addition to educational allocations, in the state. Policymakers viewed OFM as "agnostic" when it came to data. It was assigned the task of administering the ERDC for this reason.

The challenge that OFM had to navigate was managing a large collection of data they were not as familiar with as the agencies who supplied the data, while lending each educational agency in the state the ability to answer their research questions.

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6. Witt, A., Linick, M. & Brewer, J. (2013). *State Longitudinal Data System (SLDS) Research Agendas: National Context and Instructive Models*. University of Illinois at Urbana-Champaign. Champaign, IL. <http://ocrl.illinois.edu/docs/librariesprovider4/news/update/fall-2013.pdf?sfvrsn=6>

# ACCOMMODATING THE NEEDS OF MULTIPLE CONSTITUENTS

Eleven Washington State government agencies participate in the ERDC (see Table 1).

**TABLE 1: LIST OF ORGANIZATIONS THAT PARTICIPATE IN THE ERDC**

Name of Organization	Data Submitted to ERDC
Department of Early Learning (DEL)	Early learning/Child Care providers
Office of Superintendent of Public Instruction (OSPI)	K-12 student information
Washington Student Achievement Council (WSAC)	Financial aid information
Council of Presidents (COP)	Postsecondary student information at six public universities
State Board for Community and Technical Colleges (SBCTC)	Postsecondary student information for public two-year institutions
Workforce Training and Education Coordination Board	Private career college student information
Employment Security Department (ESD)	Workforce Outcomes, Unemployment information
Legislative Evaluation and Accountability Program (LEAP)	State budget information

Because of the vast amount of data collected and number of contributing agencies with different interests, OFM had to develop a process for ensuring that each contributing organization had the ability to generate data files for their own research and analysis use.

Representatives from each of the agencies in Table 1 participate in the P-20W Research Coordination Committee, which meets quarterly. Participants at these meetings discuss potential changes to the ERDC, new data submissions, and opportunities for future research; and offer feedback on reports when agencies use ERDC data for their own research projects. In addition, there is a process for determining which projects the ERDC will devote staff analytical resources toward. Members of the Research Coordination Committee have the opportunity to submit research ideas to a repository of potential research questions. According to Melissa Beard of OFM, it is not unusual for there to be hundreds of potential questions in this list for longitudinal research projects at any given time. Examples of cross-sector research questions discussed by the Research Coordination Committee include:

- How do the performance profiles of high mobility students compare to those of other students?
- What are the education and workforce outcomes of low-income students?
- What are their postsecondary financial aid profiles, and
- What are the common characteristics of teachers who leave the teaching workforce?<sup>7</sup>

7. More examples of research questions are available at <http://erdc.wa.gov/about-us/research-priorities>

Once participating organizations have submitted questions, ERDC staff discuss how to prioritize the questions and discuss potential benefits of devoting staff time to the research.

Beard explained during SHEEO's visit that many of these questions are influenced by what is being asked of the agencies when the state legislature is in session. The committee members are then able to determine which legislative questions can easily be answered using ERDC or other agency data, and which questions require a longer-term research project. This coordination is valuable during the legislative session when participating organizations can get a sense of what legislative requests are potentially coming to their agencies. In interim periods, agencies often prepare research and reports for other constituencies that benefit from longer-term research projects, answering questions such as, "What are the characteristics of graduate or professional school students?"<sup>8</sup>

According to Jim Schmidt, governor and legislator requests generally go to the top of the queue in terms of priorities and most of the time these requests are short-term projects that require little staff time and resources to answer. However, sometimes key constituencies will demonstrate interest toward longer-term projects that may also be identified as high priority. After research questions are selected for further study, agency staff or external researchers are provided with a longitudinal dataset from ERDC. Preliminary findings of longitudinal research are shared with the Research Coordination Committee in order to solicit feedback from multiple stakeholders before the information is made public. During SHEEO's visit to Washington, a preliminary analysis of the economic benefits of veterans services programs was shared with committee members for feedback.<sup>9</sup>

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8. Witt, A., Linick, M. & Brewer, J. (2013). *State Longitudinal Data System (SLDS) Research Agendas: National Context and Instructive Models*. University of Illinois at Urbana-Champaign. Champaign, IL.

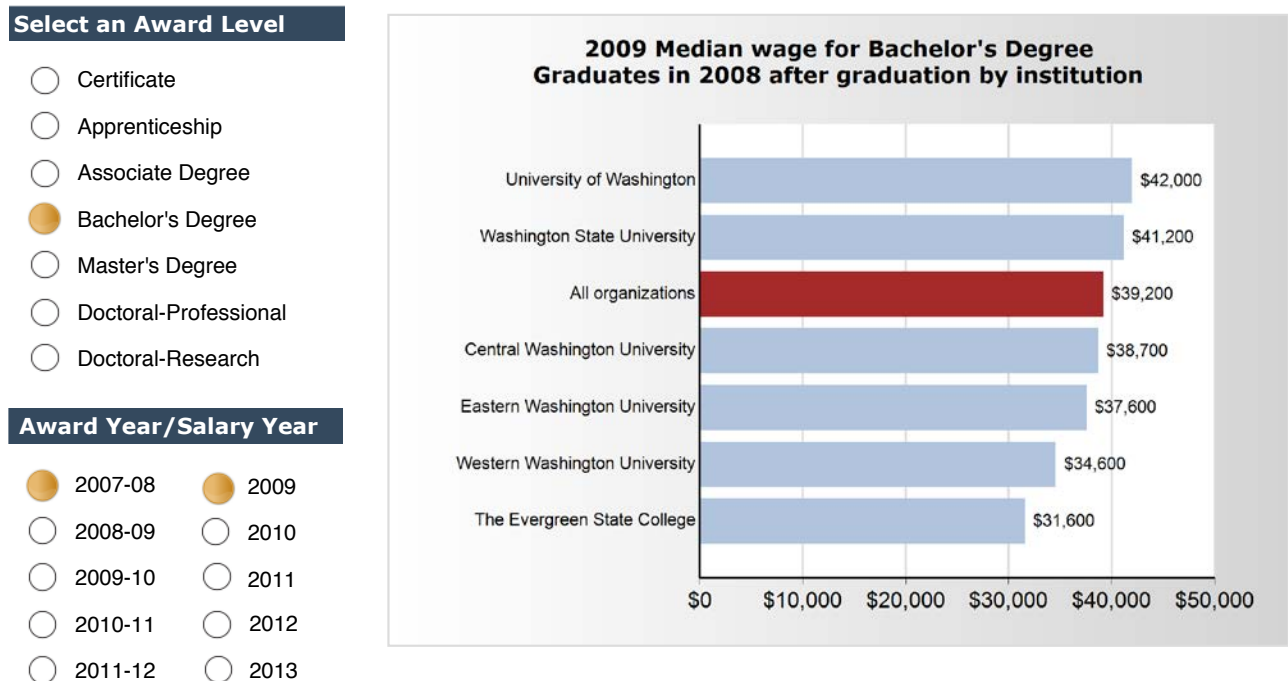
9. Findings from that study are available by download, under "Transitioning Veterans Study," at this link: <http://www.erd.wa.gov/about-us/data-governance/research-and-reporting-coordination-committee>



## EXAMPLES OF DELIVERABLES USING ERDC DATA

Washington has some examples of data dashboards and other reports. ERDC’s “Earnings For Graduates” report allows the public to see wage outcomes for public universities and community and technical outcomes by discipline. Five years of data are available for degree types from certificates through doctorates (see Figure 1).

**FIGURE 1: EARNINGS FOR GRADUATES DASHBOARD**

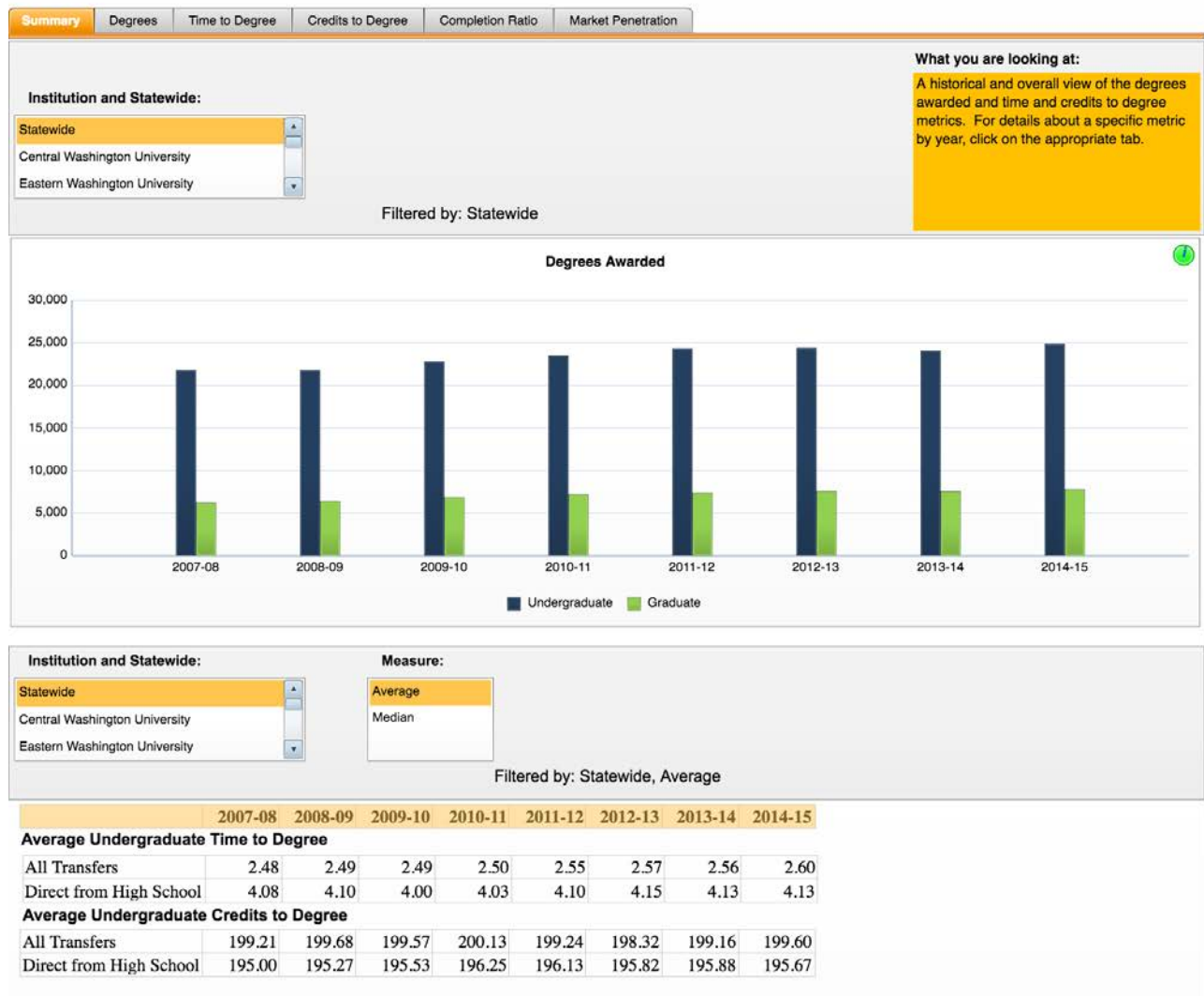


Washington’s landing page for this information is a good example of communicating—to policymakers and the general public—the scope and limitations of this data. It mentions that these data are only available for students who are employed in Washington and do not include students who are employed by the federal government or in another state, among other caveats. It prepares the viewer for variations in earnings among Washington institution graduates while mentioning that regional economies in the state may be a driving factor in such variations. In addition, it encourages the viewer to look at typical earnings as an aid for decision-making, while acknowledging that “personal interest and skills are the most important factors in education and career planning.” This landing page was crafted with input from multiple agencies before release<sup>10</sup>.

10. <http://www.erd.wa.gov/data-dashboards/earnings-graduates>

In another dashboard, users are able to view a variety of metrics for student progress and completion in Washington’s public universities. The degrees information includes metrics not available in many states, such as time to degree (see Figure 2). In addition to demographic breakouts by age, gender and race/ethnicity, the dashboards show differences between state grant recipients and those who did not receive a state grant award. This allows policymakers and university administrators to see differences in performance between grant recipients and those who did not receive aid.

**FIGURE 2: PUBLIC FOUR-YEAR DASHBOARD**



Other dashboards include a high school feedback report and a finance report for institutions which allow users to see changes to the percentage of total revenue that comes from tuition and how state appropriations to institutions have changed over a five-year period.

While many other states have produced similar longitudinal research projects and reporting, Washington stands out as leveraging other data sources that participate in its warehouse beyond the K-12, postsecondary, and workforce agencies. Many states do not have the capability to link education data systems with correctional data.<sup>11</sup> A series of reports on postsecondary and workforce outcomes for prison inmates was recently produced from ERDC.

Specifically, the implications of contact with the juvenile justice system and how it relates to outcomes for young incarcerated adults in Washington state was identified as a “topic of interest” among policymakers, educators and researchers in Washington.<sup>12</sup> Individuals incarcerated in Washington State have an ID number in the ERDC and many of these individuals can be matched with datasets from the Office of the Superintendent of Public Instruction (OSPI) and student records from the State Board of Community and Technical Colleges or the Washington Student Achievement Council. These research studies were funded with a grant from the U.S. Institute for Education Statistics (IES). Members of ERDC’s Research and Reporting Coordination Committee were kept apprised of progress on the grant and were consulted when records were matched between the various government agencies’ databases.

The studies found that individuals who had contact with the juvenile justice system were often disrupted in their forward progression toward successful education and workforce outcomes. For the cohorts examined, Washington’s graduation rate among individuals who had no contact with the juvenile justice system had a 66% high school graduation rate<sup>13</sup>. Only 28% of juvenile offenders graduated from high school in the same cohort, nearly a 40% difference. Juvenile offenders were more likely to pursue a GED certificate than non-offenders, with 21% of offenders earning a GED compared with 4.3% of students in the same cohort who had no contact with the juvenile justice system. However, across all cohorts (juvenile justice records and no contact), high school graduates experienced better wage outcomes when compared with those students who earned a GED. Those students who had no contact with the juvenile justice system made, on average, \$4,245 more than juvenile offenders when both cohorts were beyond high school age (18-24).

Young adults (18-24) who were incarcerated in Washington State had participated in Free and Reduced Meal Services (FRMS) at high rates while they had been enrolled in school between the 7th and 12th grades. Seventy-six percent of incarcerated young adults had participated in FRMS at some point. Academic performance among the young incarcerated was poor overall. The average grade point average for young adults in the Washington State Department of Corrections cohort was 1.25. While incarcerated, inmates between 18-24 years old earned a median annual wage of \$3,096<sup>14</sup>. These two reports allowed policymakers to see the effects of juvenile offender status and incarceration on an individual’s high school, college and employment outcomes. They also come on the heels of renewed interest from the federal government and national higher education foundations in improving outcomes for the incarcerated.<sup>15</sup> The conclusions drawn from these ERDC-enabled reports open critical avenues for understanding the postsecondary attainment of a traditionally overlooked population.

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11. Armstrong, J. & Whitfield, C. (2016). *The State of State Postsecondary Data Systems: Strong Foundations 2016*. SHEEO. Boulder, CO.

12. Cross, S. (2016). Juvenile Justice Standardized Report: *Education and Workforce Outcomes of Juvenile Justice Participants in Washington State*. Washington State Statistical Analysis Center. Olympia, WA. Retrieved from: <http://erdc.wa.gov/publications/justice-program-outcomes/juvenile-justice-standardized-report>

13. Ibid.

14. Hough, G. (2016) Education and Employment Characteristics of Incarcerated Young Adults. Washington State Statistical Analysis Center. Olympia, WA. Retrieved from: <http://erdc.wa.gov/publications/justice-program-outcomes/education-and-employment-characteristics-incarcerated-young>

15. Lumina Foundation. *Focus* (Fall 2016). Indianapolis, IN. Retrieved from: [www.luminafoundation.org](http://www.luminafoundation.org)

## CONCLUSION

States considering establishing or improving a P-20W warehouse or linking datasets via a federated model can look to Washington as a model for ensuring that multiple constituents are involved in all aspects of longitudinal research. The regular meetings and collaboration of ERDC's Research and Reporting Coordination Committee allow analysts and researchers across agencies to discuss which projects to prioritize and how to resolve technical issues involved when matching longitudinal records from multiple datasets. The dashboards that ERDC's participating agencies make available to the general public contain multitudes of pertinent education data with appropriate context, and the inclusion of datasets from non-educational and workforce agencies, such as corrections, allow for research that is not possible in many states. Data governance and engaging multiple stakeholders are major strengths of the ERDC.



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