Your Question:
You asked about state approaches to establishing a statewide longitudinal data system as well as the challenges and opportunities related to the ongoing success these systems.

Our Response:
Statewide longitudinal data systems (SLDS) have evolved into an essential tool for state education systems and education policy leaders. Data linkages allow policymakers, administrators, teachers and other stakeholders to measure student outcomes, observe transitions and evaluate state education policy goals.

Currently, 40 states and the District of Columbia have an SLDS (which Education Commission of the States defines as a system that connects education data between at least two of four sectors: early learning, K-12, postsecondary and/or workforce). Sixteen states and the District of Columbia have full P20W systems, connecting data across all four education sectors.

With most states now operating an SLDS, the conversation has shifted from "who has a system" or "how can a state establish a system" to "how are states effectively using their SLDS?". States may use their SLDS to create school or district report cards, provide information about student preparedness from postsecondary institutions back to high schools, or to measure state progress in meeting workforce needs.

System Establishment
Of the 40 states and the District of Columbia with an SLDS, 20 created their system primarily through federal SLDS grants, 15 and D.C. created their system through statute or legislation, three created their system through memorandums of understanding between state agencies and two established their SLDS through executive order.

While compiling resources for this information request, we were unable to locate any research suggesting that one approach of establishing a system is more effective than another. In speaking with education data and state policy leaders, Education Commission of the States found that maintenance of an SLDS over time tends to be more crucial to its longevity, regardless of how the system was established.

State leaders commonly identified leadership, staffing and funding as necessary pieces to maintaining an SLDS over time. Legislation or statute can be useful in ensuring that SLDS receive consistent annual funding to help provide for the maintenance and staffing of data systems. Memoranda of understanding can be effective in ensuring that all necessary agencies are included and are committed to providing and connecting data.

System Structures and Use
States use federated, centralized or hybrid approaches for their SLDS. State data systems that collect, retain and maintain data from multiple agencies in a centralized warehouse are designated as centralized systems and state data systems where data from participating agencies were linked either temporarily or on an as-needed basis are federated systems. In practice, however, it may be difficult to attribute a system to one distinct style. A state's SLDS may have some centralized features (such as governance and data collection) and some federated features (such as

data connections) — these are designated as hybrid systems. State leaders have found SLDS success across the spectrum of structures.

Data Privacy

One roadblock for education data, especially longitudinal data, is a concern about data privacy and security. As the collection and use of individual data expands, both generally and in education, the public continues to voice more questions and concerns about data privacy. The chief concerns coming from parents, students, educators and administrators revolve around information technology security and the inappropriate sharing or use of data. Parents and other individuals want to know that the collected student information is secure. Public concerns also exist around the idea that companies might misuse and profit from data by selling certain information to advertisers for targeted marketing.

States have attempted to address these concerns both through enacted legislation related to data collection more broadly and in data security measures within their SLDS. States using both centralized and federated SLDS commonly use de-identified data, where any personally identifiable information is scrubbed from a students' record before the data is analyzed or linked. Some states, such as **Missouri**, have adopted role-based or managed access to data collected for their SLDS. With role-based access, individuals at different levels in the education system have varied access to student data. For instance, a school principal is allowed to see individual student records for students in their school but only aggregate data for students in other schools.

Several states require a log-in to access data within the SLDS. **Wisconsin**, for example, features an Application Security Manager that allows only authorized personnel to view confidential student-level records. Additionally, Wisconsin's SLDS features both publicly accessible data on the WISEdash Public Portal and secure data access on the WISEdash for districts system.

State Examples

Education and data leaders have reported to Education Commission of the States that cost, staffing or training, leadership and transparent use of data have all been obstacles in maintaining an SLDS over time. **Connecticut**, **Georgia**, **Maryland** and **Rhode Island** all serve as examples of states that have succeeded in each of those challenge areas, respectfully.

Connecticut

Connecticut received federal SLDS funding in 2006 and 2009 to support its P20WIN system. The state has since depleted its federal funds but has found cost-effective ways to keep its SLDS running over time. For one, the state uses a federated system rather than a central warehouse. State leaders have found cost-savings in having each agency maintain its own data. P20WIN also relies on a third-party tool for data matching. The system now runs on in-kind support from each of the participating agencies.

Georgia

An SLDS is only as effective as what it is used for. Challenges some states have faced include getting those at the ground-level to understand which data they are collecting and getting end users to engage with the reports produced. Georgia has used a bottom-up approach to increase SLDS usage and engagement throughout the state. The Georgia Department of Education established a Statewide Longitudinal Data System Training Team that provides comprehensive training for all of the state's 120,000 teachers. Once teachers had a better understanding of the SLDS,

they used it more frequently. The number of unique requests educators made of the system increased from roughly 250,000 in 2013 to 94,000,000 in 2018.

Maryland
The establishment of Maryland's SLDS serves as an example of top-down leadership paving the way for a strong data culture. As one of his key initiatives, former Governor Martin O'Malley publicly supported an improved education information system. Governor O'Malley rallied education, workforce and legislative leaders around a plan for the Maryland Longitudinal Data System, with their efforts resulting in legislation that created a data governing board representing a diverse array of agencies from around the state.

Rhode Island
Rhode Island also serves as an example of a state making the most of its data connections. Rhode Island's RI DataHUB collects much more than education data. In addition to data from the department of education and the Rhode Island Board of Governors for Higher Education, the system also collects data from state sources including the Rhode Island Department of Health and the Rhode Island Department of Children, Youth, and Families, as well as from federal sources like the U.S. Census and the Centers for Disease Control. As a result, the state produces comprehensive reports and data stories that provide a more holistic view of the state's education landscape. Featured on the RI DataHUB website are reports on employment outcomes of Rhode Island graduates in specific sectors, postsecondary outcomes for individuals who participated in the state's workforce training programs, and impacts of health and housing on Rhode Island students, to name a few.