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The Future of Education Data in New Mexico: An Update on STARS and Project Nova

For more than a decade, school districts and charter schools have reported student data to the Public Education Department (PED) using a labor-intensive process. Local school staff would export data from school districts' individual student information systems (SIS), manipulated to fit into state-mandated templates, and stored in the Student and Teacher Accountability Reporting System, or "STARS." This complicated process involved a great deal of manual labor from both school reporting officials and PED staff, adding to a list of state reporting requirements districts have called overly burdensome. The process also contributed to dubious, unreliable data, and sometimes, a complete absence of data necessary to take informed action on important legislation. New Mexico is in dire need of a high-quality data system capable of monitoring how the Legislature's investments help improve student outcomes, particularly for those students identified in the *Martinez-Yazzie* consolidated lawsuit.

In the 2023-2024 school year, PED will transition to a centralized real-time data system that will automate many of the repetitive processes of the past. Nicknamed "Project Nova," the new data system means adoption of the nationally recognized Ed-Fi data standard and represents nearly five years of work to coordinate and construct a streamlined student data warehouse. The new system has the potential to offer timelier, higher quality data, empowering the Legislature and other education stakeholders to make better-informed decisions. As New Mexico begins to transition to the new system, school districts should prepare to build a culture of data quality, and the state should consider whether statutory changes are necessary to change how data is collected, governed, and used.

Project Nova and the Transition to Ed-Fi

In June 2019, PED submitted a project charter to the Department of Information Technology, marking the beginning of Project Nova, the name given to New Mexico's transition to a real-time student data system. The original project charter anticipated the project would be complete in 2021, but challenges imposed by Covid-19 and turnover in department leadership delayed the project for several years. In October 2021, LESC received an [update from PED](#) on the status of the real-time data system, describing the 2022-2023 school year as a pilot year, with a number of

Key Takeaways

In the upcoming school year, New Mexico will transition away from STARS and begin using a new real-time data system.

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The new data system unifies all school data using a shared language, the Ed-Fi data standard.

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Transitioning to the new system will reduce manual labor associated with data collection and validation.

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A new data system will help streamline data reporting and access, but effective use of data to improve student outcomes remains the responsibility of the Legislature, PED, and schools themselves.

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Transitioning to a new data system is a significant undertaking with considerations for day-to-day operations.

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Understanding the Jargon

Data collection and standardization is a complicated undertaking that necessitates a language of its own. As New Mexico transitions to new data standards and systems, analysts and administrators may use the following terminology frequently:

- **Student information system (SIS):** A digital system designed to collect information on students, including attendance, achievement, and demographics. SISs are built by vendors like PowerSchool and Synergy, which contract directly with school districts to provide SIS services.
- **Ed-Fi:** A set of standards and rules that govern the collection, management, and organization of educational data. The rules ensure all educational data is organized using the same digital “language.”
- **Student Teacher Accountability Reporting System (STARS):** New Mexico’s long-standing data repository for student and teacher data. At the beginning of the 2023-2024 school year, PED will transition away from STARS.
- **Application programming interface (API):** A program created to serve a distinct function, often built to help two data systems talk to one another.
- **Operational data store (ODS):** A centralized database designed to integrate data from multiple sources and export datasets for various uses.

A Reduction in Manual Labor

With the adoption of Ed-Fi and the transition to a new operational data store, PED anticipates a significant reduction in the manual labor required to process, validate, and report data. A visual representation of the transition from STARS to Project Nova is shown on Page 3 of this report.

Prior to the adoption of standardized data formats, school districts and charter schools spent a significant amount of time exporting data via STARS templates. After exporting data from a student information system, school districts needed to convert the data into STARS templates and ensure the templates were formatted accurately before submitting them to PED. This process occurred three times per year on annual reporting dates, sometimes called “snapshot dates” or forty-day (40D), eighty-day (80D), and one-twenty-day (120D). Some data were collected on additional snapshot dates, like the first day of school and the last day of school. After STARS templates were submitted to PED, department staff were tasked with “validating” the data, a process meant to ensure the

school districts participating in testing of the new system. The upcoming 2023-2024 school year will mark the first full year of implementation of Project Nova.

Ed-Fi: A Shared Data Language

The transition to a centralized database necessitated the adoption of a unified data standard, allowing all school data to be processed in an identical format. Project Nova is built using the [Ed-Fi data standard](#), a set of nationally recognized rules and procedures that define how data should be formatted and exchanged between systems. For those unfamiliar with data systems, consider Ed-Fi as a “language,” enabling every school district’s SIS to communicate directly with the statewide operational data store (ODS).

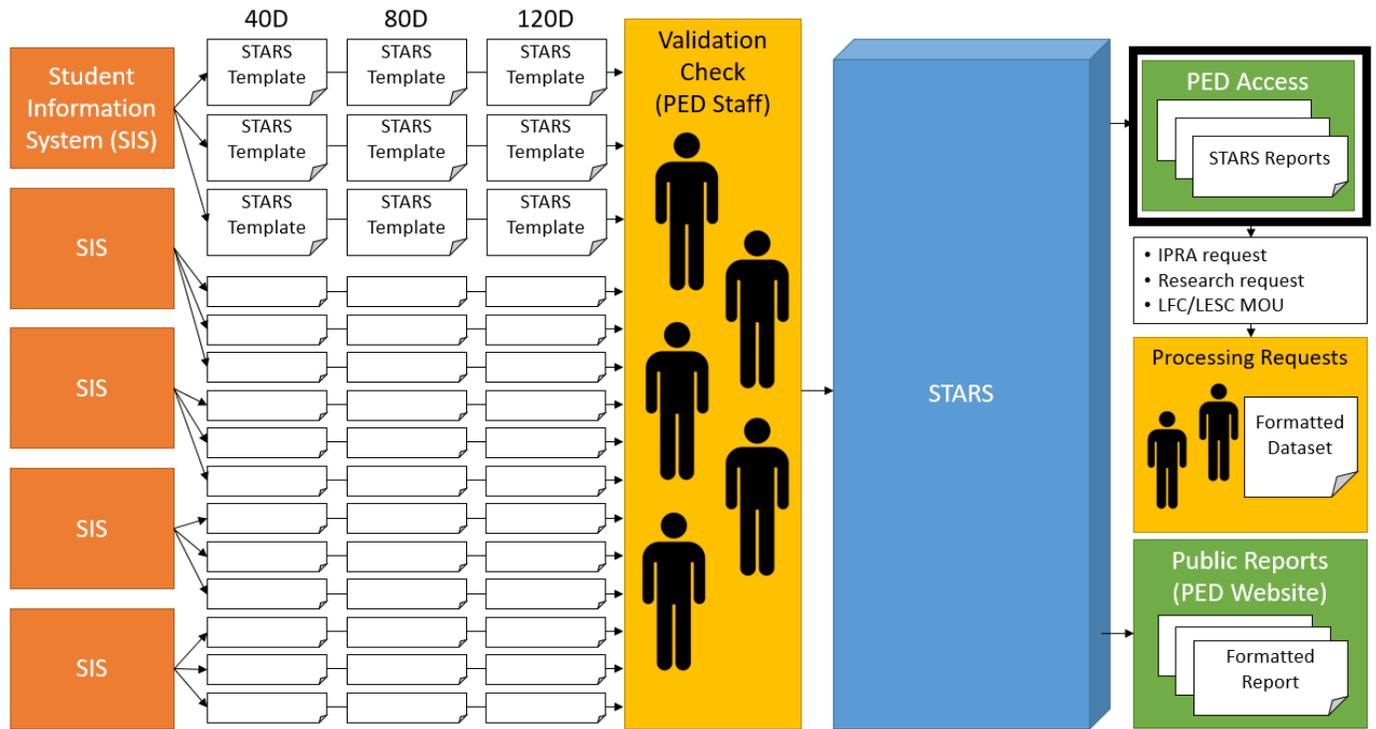
The Ed-Fi data standard is developed by the nonprofit Ed-Fi Alliance, a shared consortium of state education agencies, school districts, charter schools, nonprofits, and data system vendors. The standards are not considered proprietary. By adopting the Ed-Fi standard, New Mexico joins 19 other states and dozens of school districts, nonprofits, and vendors that have adopted the standard.

Adopting a shared data standard can result in greater efficiencies, both in terms of cost and time spent reporting data. On the Ed-Fi Alliance’s website, the organization estimates the adoption of the standards reduced the data collection burden of Nebraska by 25 percent, saved Michigan \$16.3 million in annual data submission costs, and helps Wisconsin process up to 30 million data transactions per day.



Before Project Nova: STARS Submission, Validation, and Reporting Process

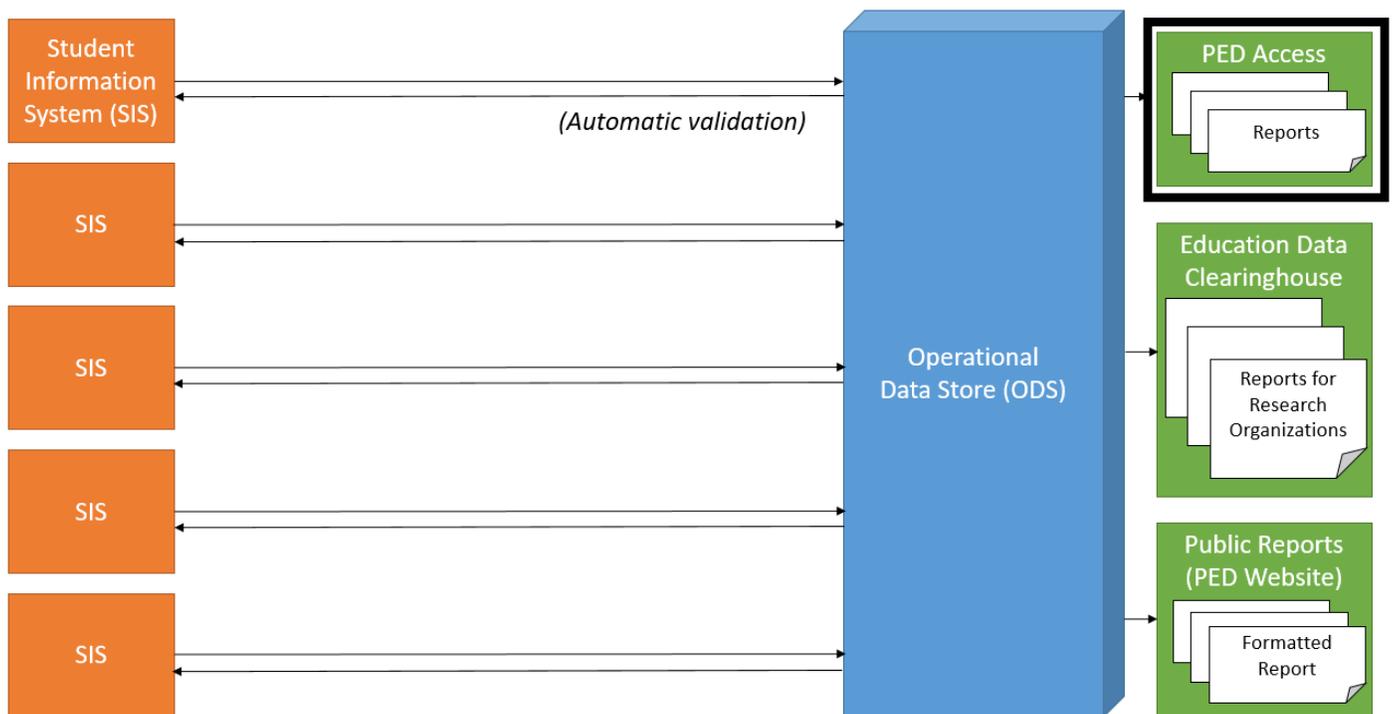
Prior to 2023-2024 School Year



Source: LESC Files

After Project Nova: New Submission, Validation, and Reporting Process

2023-2024 School Year and Future Years



Source: LESC Files

data was usable and accurate. If PED staff found issues during the validation process, they would flag those issues and return the STARS template to school districts for corrections. In some cases, school districts would simply fix the STARS template, without fixing the source data within their SIS, resulting in repeated validation errors on multiple snapshot dates. Moreover, some data submitted to STARS was never used to guide policy decisions, and for that reason was never validated. For instance, staff salary data submitted to STARS rarely matched salary data submitted to the department’s Operating Budget Management System (OBMS). These inaccuracies often resulted in confusion for policymakers attempting to build a budget and anticipate the costs of providing increases in compensation and changes in benefits.

After data were validated and certified by PED staff, the department used the data to create reports. Some reports were maintained for PED internal use to monitor school districts’ compliance with state law, such as the Bilingual Multicultural Education Act or the Fine Arts Education Act. Other reports have been used to monitor compliance with federal education laws, such as the Individuals with Disabilities Education Act (IDEA). Still others were compiled absent of students’ personally identifiable information and shared for public consumption on the PED website, including attendance, graduation, and proficiency datasets. Some publically available information was made available to legislative staff when requested, or to members of the public who submit an Inspection of Public Records Act (IPRA) request. Compiling reports to be shared with stakeholders often required manual data transformation on the part of PED staff, placing unnecessary strain on department staff and resources.

With the transition to Project Nova, the manual entry of data into STARS templates and the manual validation of those templates is no longer necessary. Instead, each school district’s SIS will automatically upload data to the state’s ODS. Using a set of standards and rules, the ODS will either accept the data submissions, or automatically reject the submissions and notify school district staff of issues in formatting. In addition, PED plans to construct an education data clearinghouse, a public-facing set of reports for research organizations further reducing the administrative burden of manually filling requests for research organizations and legislative staff. While the new system will not *completely* eliminate manual labor for school districts and PED, automating many of the state’s data collection processes will allow education policymakers to invest more time using the data, rather than collecting it.

**Appropriations for
Real-Time Data System Upgrades**
(dollars in thousands)

Fiscal Year	Amount	Purpose
FY20	\$651.5	To implement a real-time data system
FY21	\$500.0	For data system upgrades
FY22	\$1,500.0	For data system upgrades
FY23		No appropriation
FY24		No appropriation
TOTAL	\$2,651.5	

Source: LESC Files

Investments in Real-Time Data

From FY20 through FY22, the Legislature invested a total of \$2.7 million to fund both “a real-time data system” and “data system upgrades.” The appropriations support Project Nova and other data projects at PED, like the creation of a financial transparency dashboard. In FY23 and FY24, the Legislature did not appropriate dedicated

funding to Project Nova. PED may have utilized additional funds to finalize the transition to real-time data in those years, potentially including federal Covid relief funding, but the extent of the funding used is unknown. To operate the new real-time data system, PED will reallocate funding previously used to maintain STARS, but staff anticipate recurring funding will be needed to continue operating the system; PED may request additional funding for IT support within the department’s operational budget.



Research on Effective Data Collection and Use

The [Data Quality Campaign](#), a national nonprofit that advocates for effective use of data to inform education policy, lists several topics states should consider as they design their data systems. According to the Data Quality Campaign (DQC), states should focus on six major topics when collecting and using data:

- **Build data systems that work.** Each data system should be designed to meet the needs of all stakeholders using the system, from teachers to parents to policymakers.
- **Measure what matters.** States should develop indicators aligned with shared statewide goals, enabling measurement of progress toward meeting those goals.
- **From education to workforce.** If the culminating goal of education is to prepare students for their lives beyond school, data systems should enable linkages from early childhood, through public education, and into higher education and the workforce.
- **Centering privacy.** Data systems should prioritize the security of student information and prevent the dissemination of personally identifiable information.
- **Data for equity.** Policymakers and school leaders should use data to examine student outcomes and identify opportunities to improve student success, especially for students that have historically been underserved.
- **Make data publicly available.** Information collected on students’ challenges and successes can help guide decisions for teachers, parents, community organizations, school administrators, and policymakers alike.

Data Quality Campaign Recommendations and Project Nova

DQC Best Practice	Is it part of Project Nova?	Notes
Build data systems that work	Yes	A critical component of Project Nova is its ability to work seamlessly with existing systems, meaning school districts and charter schools will need to change little about the data they already collect and use.
Measure what matters	No	While PED has developed a strategic plan including proposed measures for student success, the plan does not reflect goals developed under a statewide vision shared by all education stakeholders. New Mexico would benefit from convening a dedicated group of statewide education stakeholders to develop a shared strategic vision for New Mexico.
From education to workforce	Maybe	Project Nova will better enable the state to track individual students as they move from district to district and school to school. PED should work closely with the Early Childhood Education and Care Department, the Higher Education Department, and the Department of Workforce Solutions to enable connections to a statewide longitudinal data system.
Centering privacy	Yes	The security of student data is a core component of Project Nova and the new database. Reports created for public consumption will not include information that could be used to identify students.
Data for equity	No	Project Nova will make data collection and access much easier, but it is the collective responsibility of the Legislature, PED, and schools themselves to use these data to create equitable opportunities and achievement for all students.
Make data publicly available	Yes	The construction of a public education data clearinghouse will improve the availability of information for the public and research organizations.

Source: Data Quality Campaign and LESC Files



Benchmarking Project Nova: What It Can Do, and What It Can't.

With the Data Quality Campaign's recommendations in mind, an examination of Project Nova suggests that New Mexico's transition to real-time data is aligned with a number of research-based best practices. Project Nova will streamline how data is collected and disseminated statewide, seamlessly integrating with existing district SISs. A public-facing data clearinghouse will vastly improve access to information, providing stakeholders with more timely and reliable data to make more informed decisions. In addition, PED has made safeguarding private student data a high priority as the system has been developed.

However, more work is needed in New Mexico to prepare its stakeholders and policymakers for effective use of data. For example, a centralized data warehouse will do little to set a strategic vision and goals for student achievement. Ultimately, the responsibility to use the streamlined data system to improve student outcomes, especially for those students identified in the *Martinez-Yazzie* lawsuit, lies with the Legislature, PED, and school districts and charter schools themselves.

Considerations for the Future of Data in New Mexico

Project Nova and the transition to real-time student data will change a great deal about data collection in New Mexico. As the state begins this transition, policymakers and other stakeholders should consider what real-time data means for the day-to-day operation of public schools.

"This will be a difficult year." One school district administrator explained school districts have had to learn a great deal about data systems this year. School district officials expect there may be difficulties adapting to the new system. Stakeholders should temper their expectations for real-time data with a dose of reality; the first year of the new system may have its fair share of bugs and errors. As with any system, these errors will grow less common over time as stakeholders adapt to the new system

Schools may need to report new data in their SIS. SISs have a variety of capabilities, and no two school districts are identical in the types of data they collect in the SIS. Typically, school districts use their SIS to collect demographic information, attendance, and student grades, but some districts also use their SIS to collect teacher salary and licensure data and other financial data. To meet certain state reporting requirements, some school districts may need to begin using their SIS in ways it may not have been used before.

Data in every school's SIS needs to be accurate. Rather than relying on STARS templates to "iron out" mistakes, the new system requires every school district to ensure source data within the SIS is accurate. The new system places a greater responsibility on school districts to ensure every-day data collection is accurate, and may require teachers and other end users to use SISs with greater fidelity. LESC staff spoke to school district stakeholders who recommended that districts establish a "culture of data quality," ensuring that every individual who uses the SIS understands the importance of accurate and timely data collection.

PED may need additional funding and expertise to maintain high data standards. Construction of the real-time data system is complete, but PED anticipates an annual recurring funding need to staff and maintain the new system. PED has historically struggled to maintain staff, especially for high-skill data architecture positions that carry high salaries in the

public sector. To improve PED's staffing capacity, PED may need the capability to offer highly competitive salaries, which may necessitate exempting the department from the provisions of the State Personnel Act.

SIS vendors must maintain compliance with Ed-Fi. School districts are primarily responsible for entering into a contract with an SIS vendor. Some small, rural school districts collaborate with their Regional Education Cooperative (REC) to procure a multi-district SIS. Common SIS vendors include Synergy and PowerSchool, but some school districts may be using smaller SIS companies. To interface with the statewide ODS, every SIS must comply with the Ed-Fi data standard. If small SIS companies cannot maintain compliance, school districts may be required to contract with a compliant vendor. Optionally, the Legislature could consider providing funding to allow PED to procure SIS services at the statewide level, providing school districts with a default high-quality SIS if they desire.

New Mexico needs data governance leadership to determine how student data will be used. Once data is collected in a central repository, the state has few guardrails to ensure it is used in a responsible manner. School district administrators recommended the Legislature statutorily create an education data governance council, including representation from school districts, charter schools, and PED, to guide data governance policies and act as stewards of sensitive student data. Developing data governance policies will require technical expertise to address a number of unanswered questions, including:

- How long should data be stored in the ODS?
- Who is responsible for maintaining sensitive information?
- Which elements of the database should the public have access to?
- For what purposes will student data be used?