

In a world with data,  
the hero is data literate.

# Be The Hero



**State**

Texas

**Agency**

Texas Department of Information Resources

**Award Category**

Data Management, Analytics, and Visualization

**Project Title**

Be the Hero: The Texas Data Literacy Program

**Project Dates**

January 2022 – April 2024

**Contact**

Neil Cooke, State of Texas Chief Data Officer  
Texas Department of Information Resources  
neil.cooke@dir.texas.gov

### What problem or opportunity does the project address?

In a world inundated with information, where every click, like, and share leaves a digital footprint and every person generates terabytes of data per day, one skill can come to the rescue: data literacy.

It was a challenging scene in Texas as many state agencies and institutions of higher education lacked a formal data governance program. Then, in 2021, a visionary Texas State Legislature mandated Texas state agencies and institutions of higher education to designate a Data Management Officer (DMO) and tasked this DMO with establishing the agency's data governance program. Many designated DMOs were new to the role and Texas Chief Data Officer, housed within the Texas Department of Information Resources (DIR), determined a data literacy program would help the DMOs with that task.

Launched in January 2022 and the first phase completed in April 2024, the Texas Data Literacy Program provides guidance, training, and education on topics related to data management, open data, and data sharing. It provides eLearning courses on a learning management system platform that are available to staff working on their organization's data management programs. To make data literacy course content available to a wider audience, video-only versions of the courses are published to the DIR YouTube channel. The Texas Data Literacy Program ensures consistency across agency data governance programs which ultimately will improve the control and security of information collected by state agencies, promote sharing of information, including customer information, and reduce information collection costs.

Through the Texas Data Literacy Program, Texas has embarked on a journey to embolden a new class of heroes who will take on the vastness of the data world with governance, ethics, security, and privacy. In this world of data, the hero is data literate.

### Why does it matter?

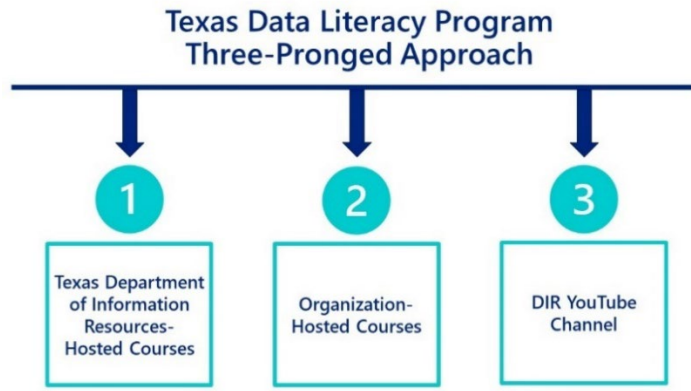
Data literacy matters more than ever in this increasingly digital world. And for public sector organizations, data literacy helps ensure the transparency and accountability of the government to those they serve. State agencies have a legal and ethical responsibility to protect the private and sensitive information of employees, customers, business partners, and the public.

Additionally, data governance programs support data sharing initiatives, both within and between organizations, to improve decision-making; enhance the ability to provide more efficient and effective services; aid in the detection and prevention of fraud, waste, and abuse; increase cost savings; and increase transparency and constituent trust.

There are currently 102 Texas state agencies and institutions of higher education with identified Data Management Officers, all tasked with establishing their organization's data governance program. Data governance programs help organizations improve the control and security of information, promote sharing of information, and reduce information collection costs. Consistency across organizations is key to meeting the data governance mandates outlined by the Texas Legislature.

### What makes it different?

The Texas Data Literacy Program is a homegrown program. All course development, script development, graphic design, video production, and eLearning course development, is done in-house by one full-time staff member in collaboration with individuals from state agencies and institutions of higher education. The Data Literacy Foundations level consists of nine introductory-level courses covering topics such as the history of data management in Texas, data quality, data privacy, data security, data ethics, and data governance roles and responsibilities.



*Figure 1: Texas Data Literacy Program Three-Pronged Approach to Distribution*

The Texas Data Literacy Program takes a three-pronged approach in providing course content. In prong one, the Texas Data Literacy Program hosts courses on a learning management system and participants who complete each level earn a certificate of completion from DIR. Access to Texas Data Literacy Program courses hosted on the learning management system is made available to Texas DMOs and their designees free of charge.

Courses are designed to be general and therefore relevant across all Texas organizations. Each organization is encouraged to develop their own organization-specific program that can provide more granular information to meet their own specific needs. In prong two, Texas Data Literacy Program products are made available to organizations to jumpstart development of their programs. This allows DIR organizations to provide foundational level information to their employees quickly, while they develop organization-specific products. All course files and supporting documentation are provided to organizations free of charge.

In prong three, the Texas Data Literacy Program provides video versions of the course contents on the DIR YouTube channel to make data literacy courses available to a wider audience, who may not be interested in earning the certificate of completion. [Texas Data Literacy Program - YouTube](#)

### What makes it universal?

The Texas Chief Data Office follows the internationally recognized data management principles endorsed by the Data Management Association (DAMA) International, making the information provided in the Texas Data Literacy Program widely appropriate and relevant. Additionally, the Texas Data Literacy Program relates directly to State CIO Top Priority number six (6) – Data Management/Data Analytics and was mentioned in a recent NASCIO article on promoting data literacy within state government. While some Texas Data Literacy Program courses may have Texas-specific information, such as descriptions of Texas legislation and laws, the content and format are easily adaptable for other states, especially those that also follow the DAMA data management principles.

[State CIO Top Ten Policy and Technology Priorities for 2024 - NASCIO](#)

[Data Literacy Within State Government: Building a Knowledgeable Workforce That Knows How to Use Data for Better Decisions - NASCIO](#)

Further, while the program aims to assist DMOs establish their data governance programs, the Data Literacy Foundations courses are designed to be appropriate for all data users, regardless of their role, including program leadership, executive leadership, and other stakeholders.

# Implementation (25%)

## What was the roadmap?

Cultivating a data literate workforce is a goal set for the state in the [Texas State Strategic Plan for Information Resources Management](#): mature data management and privacy practices. Development of the Texas Data Literacy Program began in the beginning of 2022. An interagency data literacy workgroup was formed representing 21 state agencies and institutions of higher education. The workgroup met monthly the first year to determine the proposed format of the program, design an organizational data literacy assessment to determine priority topics and intended audience, design an individual data literacy assessment to help measure impact of the program, and work on course content development. The first course, Introduction to Data Literacy, was published in October 2022. The ninth and final course of the Data Literacy Foundations level was published in April 2024. There are currently 24 organizations with representation in the workgroup.

### 2022 Data Literacy Roadmap

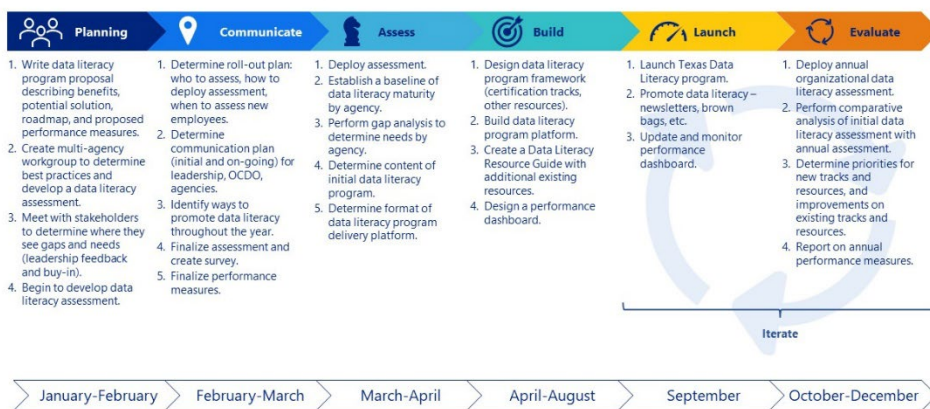


Figure 2: 2022 Data Literacy Roadmap

The organizational data literacy assessment is sent out to DMOs and others in the Texas data community each February to identify new and changing priorities and to plan for course development for the year.

The individual data literacy assessment is presented at the beginning of the Introduction to Data Literacy course. The assessment is a Likert scale survey to assess the individual's perceived level of data literacy in each of six core areas of competency. Individuals completing all nine courses at the Foundations level will receive the individual data literacy assessment again in an attempt to gauge the effectiveness or impact of the courses. Data for this measure is not yet available.

Additionally, each course hosted on the DIR learning management system provides the participants with an opportunity to evaluate the course.

Metrics currently monitored by the Texas Data Literacy Program: number of organizations participating in DIR-hosted courses, number of individuals participating, number of individuals completing Data Literacy Foundations level, number of organizations hosting DIR-created courses.

Future impact measures may also include data collected on biennial data maturity assessments now mandated in the Texas Government Code.

## Who was involved?

An interagency data literacy workgroup, representing 21 Texas state agencies and institutions of higher education, met monthly in 2022 to determine the proposed format of the program, design an organizational

data literacy assessment to determine priority topics and intended audience, and design an individual data literacy assessment to help measure impact of the program.

The Texas Data Literacy Program administrator wrote a program proposal and presented the proposal to the DIR Executive Director in March 2022 for buy-in and approval. Course content is developed by the Texas Data Literacy Program administrator in collaboration with members of the data literacy workgroup, DMOs, and other subject matter experts such as Information Security and General Counsel personnel.

Additional input and feedback on both program format and course content development are solicited from the designated DMOs, and updates on the program are provided to the DMOs and the DIR Board of Directors at quarterly meetings. Finally, course evaluation responses are reviewed, and any issues are addressed directly with the participant who provided the feedback.

The Texas Data Literacy Program administrator also works with the DIR Chief Experience Office for design and accessibility expertise, and with the DIR People and Culture Office for human resources and training expertise.

The Texas Data Literacy Program was rolled out in a three-month pilot phase with participation limited to DMOs and members of the data literacy workgroup. Early course evaluation responses and workgroup discussions allowed the Texas Data Literacy Program administrator to make improvements to the courses. Updates and improvements were made, and access was opened up to a wider audience.

Outreach and marketing activities are done through program updates at the aforementioned quarterly meetings, and through presentations at conferences and stakeholder meetings.

## How did you do it?

All course development for the Texas Data Literacy Program is produced by the Chief Data Office in collaboration with subject matter experts from state agencies and institutions of higher education. Initial program development took eight months from conception to publication of the first course, and courses are published on a cadence of approximately every one to two months.

The Texas Data Literacy Program is administered by one full-time employee. Course development is accomplished using Microsoft products licensed by DIR. Additional licenses for video editing and course development software are also utilized.

Information provided by the Texas Data Literacy Program is delivered in multiple formats. DIR-hosted courses are provided on a learning management system with licenses required for access. However, transcripts of each course are also made available upon request. PowerPoint slide decks for courses are also available upon request for DMOs to use in developing presentations on their proposed data governance programs. Finally, course files and supporting documentation, including course videos and knowledge check question answer keys, are provided to organizations utilizing courses for their own data literacy programs. These course files and documentation are considered building blocks and therefore appropriate for a variety of learning opportunity formats.

## Impact (50%)

### What did the project make better?

When the Texas Data Literacy Program first started in 2022, the primary focus was to provide foundational information on data management to assist newly designated DMOs in establishing their organization's data governance program. There were 28 organizations who participated in the pilot phase. There are now 42 organizations participating in the DIR-hosted courses, including one local governmental entity. Some DMOs have started recommending the program to members of their data governance councils and executive leadership teams so the program has started to reach a wider audience beyond technical and analytics staff.

Additionally, DIR is working with 15 organizations who wish to use the Texas Data Literacy Program materials in the development of their own organization-specific data literacy programs.

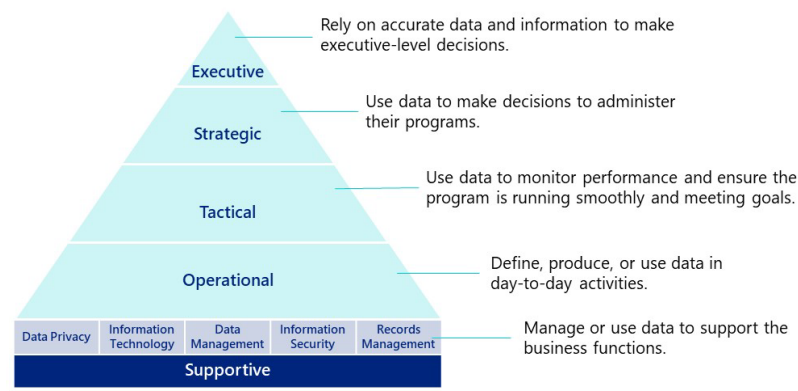


Figure 3: Levels of Data Usage

## How do you know?

Initial feedback on the Texas Data Literacy Program has been overwhelmingly positive and demand has been high. Data Management Officers are starting to get buy-in from their leadership and stakeholders as evidenced by the data governance council members starting to take the courses available on the Texas Data Literacy Program and by the increasing number of organizations interested in using courses and information developed by the OCDO and the Texas Data Literacy Program as part of their own data literacy programs.

When work on the Texas Data Literacy Program began at the beginning of 2022, only one other agency was identified that had plans to develop a data literacy program. In February 2024, eighteen organizations were identified as developing, or planning to develop, an organization-specific data literacy program. Fourteen of those organizations are actively working with DIR and the Texas Data Literacy Program administrator on those efforts.

As of May 2024, there are 42 organizations participating in the Texas Data Literacy Program, including 23 state agencies, 18 institutions of higher education, and one local government. As of May 2024, 18 individuals, representing 12 organizations have completed the first level Data Literacy Foundations of the program, and 15 organizations are in the process of hosting the Texas Data Literacy Courses on their own platforms. Additionally, users are leveraging the Texas Data Literacy Program videos on DIR's YouTube channel with over 2,400 views of the videos in the program's playlist.



Figure 4: Texas Data Literacy Metrics as of May 2024.

Participants have provided the following testimonials on the Texas Data Literacy Program:

"Very well done. High quality. I would definitely recommend to anyone in my organization." – Sam Houston State University

"Very helpful and concise. I stopped in the middle of the course to note how what I learned will be applied to a current job project." – Texas Library and Archives Commission

"For individuals who are trying to get a handle on Data Literacy, this is an excellent start." – Office of the Attorney General

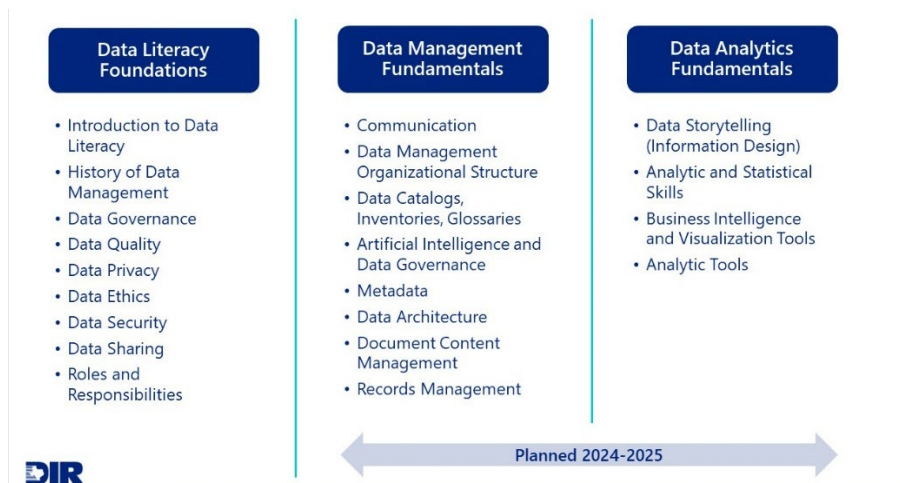
"Data literacy is an absolute requirement across the board, and I am SO thankful that this program came along to help educate us ALL. Regardless of the literacy level there is something for everyone here! Thank you very much!" – Texas Juvenile Justice Department

"The quality of the Texas Data Literacy Program is excellent, and I look forward to more training. I am still struggling to operationalize data governance at our agency—I have been tasked with creating a data management program but don't really know that that's supposed to look like. Thank you for doing this survey." – University of Texas System

Course evaluation responses have been encouraging. On a scale between one and five, with five being the highest score, users rate overall satisfaction with the Texas Data Literacy Program at 4.0, and participants have indicated they would recommend the courses to their colleagues with a score of 4.7.

## What now?

The Data Literacy Foundations level of courses is complete, and work has begun on a more advanced level, Data Management Fundamentals. Courses for another level, Data Analytics Fundamentals, are in the planning stages. The annual organizational data literacy assessment each February will provide information on changing needs and priorities and determine future development of the program.



In this world where the data landscape is constantly evolving, and data will continue to be used in new and innovative ways, the rise of new heroes is needed. With the increasing use of machine learning and artificial intelligence (AI), including large language models utilized by generative AI, data management has become more important than ever. The Texas Data Literacy Program aims to empower Texas state agencies and institutions of higher education to mature their data governance programs which ultimately will improve the control and security of information, promote the sharing of data and information, reduce information collection costs. Through data literacy, they can save the day.