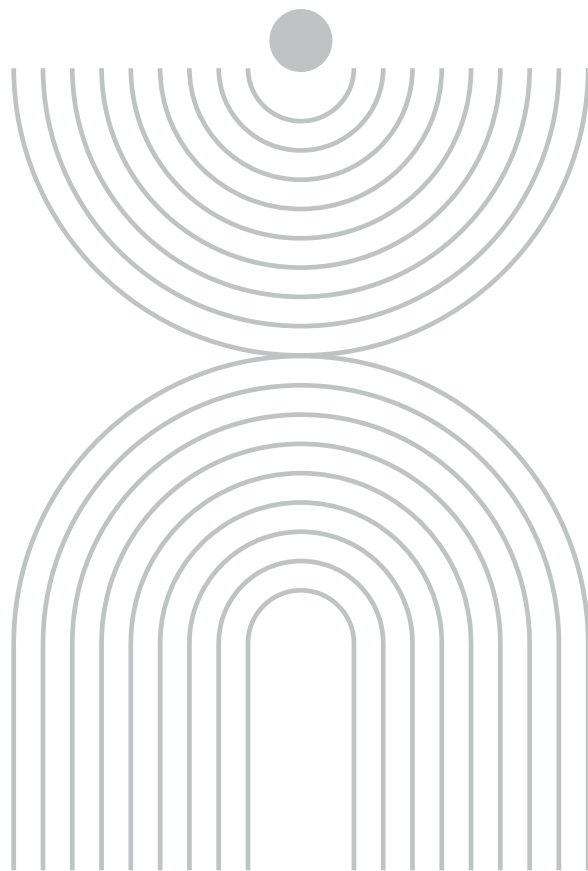


# NSWERS INFORMATION & RESEARCH AGENDA

Version 2.1



*Adopted by the NSWERS Executive Council on April 29, 2026*



# TABLE OF CONTENTS

|                                                |              |
|------------------------------------------------|--------------|
| <b>General Information</b> .....               | <b>1-2</b>   |
| <b>Roles and Responsibilities</b> .....        | <b>3-5</b>   |
| <b>Data Use Framework</b> .....                | <b>6-15</b>  |
| <b>Data Requests</b> .....                     | <b>16-17</b> |
| <b>Evaluation Requests</b> .....               | <b>18-19</b> |
| <b>Analytic Framework</b> .....                | <b>20-31</b> |
| <b>Data Dissemination</b> .....                | <b>32-35</b> |
| <b>Anticipated Public Data Products</b> .....  | <b>36-38</b> |
| <b>Special Topics</b> .....                    | <b>39-42</b> |
| <b>Financial Aid Data</b> .....                | <b>43-46</b> |
| <b>Review and Update Process</b> .....         | <b>47-48</b> |
| <b>Appendices</b> .....                        | <b>49-72</b> |
| Appendix A: Change Summary .....               | 50-52        |
| Appendix B: Research Construct Crosswalk ..... | 53-63        |
| Appendix C: Completed Research Questions.....  | 64-68        |
| Appendix D: Glossary .....                     | 69-72        |





# GENERAL INFORMATION



## Purpose

This document outlines the intended uses of data maintained within the NSWERS system. All analyses described herein are designed to support the evaluation of state and federally funded academic and workforce development programs. These analyses aim to inform decision-making at the program, agency, institution, system, and state levels by providing actionable insights grounded in integrated, longitudinal data. The purpose is to ensure that data use aligns with legal frameworks, including the evaluation exception to FERPA and applicable HEA restrictions, and supports continuous improvement of education and workforce outcomes across and within Nebraska.

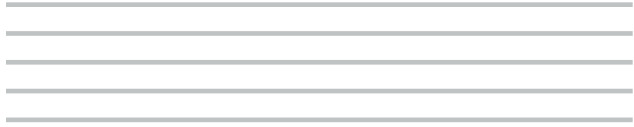
## Scope

This document applies to all analytic activities conducted using data maintained within the NSWERS data system. It defines cases that are generally allowable, as well as those explicitly disallowed, for reporting and evaluation efforts supported by NSWERS.

The scope includes:

- Analyses of education and workforce outcomes as defined by NSWERS.
- Research conducted to evaluate the effectiveness of state and federally supported programs and initiatives.
- Development of predictive models, forecasts, and simulations used to support strategic planning and continuous improvement.
- Reporting and dissemination of findings to inform decision-making at local, agency, institutional, system, and state levels.
- Development and improvement of data linking strategies and algorithms to enable the above.
- Responses to requests for data to enable performance of the above.

This scope does not include the operational use of NSWERS data for day-to-day administrative decision-making, nor does it authorize the use of data for purposes unrelated to evaluation, audit, or approved research. All data use must comply with applicable data governance policies, legal agreements, and ethical standards for privacy and responsible data use.



# ROLES & RESPONSIBILITIES



The successful development, maintenance, and implementation of the NSWERS Information and Research Agenda requires coordinated action across multiple governance, research, and operational teams. Clear delineation of roles ensures accountability, promotes efficiency, and sustains the rigor and relevance of NSWERS analytic activities.

The following groups are responsible for distinct aspects of the agenda's life cycle:

## **NSWERS Executive Council**

- Approve the overarching vision, scope, and annual updates to the Information and Research Agenda.
- Ensure alignment of research priorities with statutory obligations, FERPA compliance, and strategic workforce and education goals.
- Approve and recommend additions or changes to NSWERS supported outcomes, special topics, or research standards.

## **NSWERS Research and Evaluation Team**

- Lead the drafting, updating, and operationalization of the Information and Research Agenda.
- In consultation with NSWERS Management, Data & Technology, and Technical Advisory Committees, develop and maintain cohort definitions, outcome specifications, and data models.
- Conduct core research activities across all Stages of Analysis (Explore, Describe, Explain, Predict, Forecast, Simulate).
- Manage data validation processes and field-level documentation.
- Ensure appropriate data use compliance in study design, documentation, and reporting.
- Develop and maintain modern, flexible, and scalable research templates, dashboards, and insights products.

## **NSWERS Communications Team**

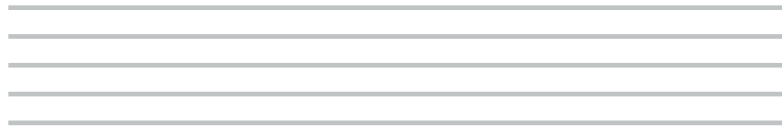
- Develop and execute a communications plan tailored to various stakeholder groups.
- Disseminate public-facing products (e.g., briefs, special reports, literature reviews).
- Coordinate stakeholder engagement activities such as webinars, workshops, and data user consultations.
- Gather and incorporate feedback from external and internal audiences to refine agenda priorities and dissemination strategies.

## **NSWERS Management, Data & Technology, and Advisory Committees**

- Provide timely, accurate, and complete data submissions aligned to NSWERS file specifications.
- Participate in research prioritization processes, including feedback on draft research questions and agenda updates.
- Engage in data validation activities and cohort verification exercises.
- Support interpretation and application of research findings within their agencies and institutions.

## **NSWERS Technical Advisory Committee (As Needed)**

- Support specialized analyses (e.g., predictive modeling, longitudinal causal studies) under NSWERS supervision.
- Contribute to special projects such as field validation studies, external validation audits, or evaluation design.
- Comply with all NSWERS data governance and confidentiality agreements.



# DATA USE FRAMEWORK



Wherever possible, NSWERS analyzes data utilizing a cohort-outcome model that standardizes the definition of focal groups and outcome achievements to provide metrics that are comparable year-over-year. The outcomes and cohort definitions described below are constructed to support evaluative functions by enabling longitudinal, cross-system analyses. Each definition is rooted in operational data submitted by participating institutions and agencies to NSWERS.

## Outcomes

This section defines each of the eight NSWERS outcomes, provides their operational definitions, and offers background and context on their significance for Nebraska’s education and workforce systems.

# EIGHT OUTCOMES

## EDUCATION OUTCOMES WORKFORCE OUTCOMES

|                                                                                                                                                                                                                              |                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p><b>High School Graduation</b></p> <p>The percentage of high school students who graduate within four years.</p>                       |  <p><b>Employment Gap</b></p> <p>The difference between the number of open jobs and the number of graduates prepared to fill those jobs.</p> |
|  <p><b>College Going</b></p> <p>The percentage of high school graduates who attend a two-year or four-year postsecondary institution.</p> |  <p><b>Time to Employment</b></p> <p>The amount of time it takes for graduates to obtain employment.</p>                                     |
|  <p><b>Postsecondary Persistence</b></p> <p>The percentage of postsecondary students who remain in a postsecondary institution.</p>       |  <p><b>Industry Placement</b></p> <p>The industries in which employees obtain employment.</p>                                                |
|  <p><b>Postsecondary Graduation</b></p> <p>The percentage of students who graduate from a postsecondary institution.</p>                  |  <p><b>Employment Location</b></p> <p>The location where employees obtain employment.</p>                                                    |



## HIGH SCHOOL GRADUATION

Graduating from high school on time is a key milestone that improves students' career options, future earnings, and health outcomes. On-time high school graduation is associated with greater economic self-sufficiency, increased civic engagement, and better long-term health regardless of income.

### *Definition*

*The percentage of Nebraska public high school students who graduate within four years of entering ninth grade for the first time.*

---



## COLLEGE GOING

Postsecondary educational attainment is increasingly necessary. Future Nebraska jobs are projected to require education beyond high school more than ever before. Despite this, college enrollment has slightly declined in recent years. Increasing college-going rates is critical for economic competitiveness and individual prosperity. Strategies to improve college enrollment include promoting advanced course-taking, summer counseling, coaching, and assistance programs.

### *Definition*

*The percentage of Nebraska public high school graduates who enroll in a two-year or four-year postsecondary institution within 16 months of graduating high school.*



## POSTSECONDARY PERSISTENCE

Persistence is a strong predictor of eventual degree attainment and economic success. Students who persist earn significantly higher lifetime wages than those who do not. Persistence rates vary across student demographics, with lower rates among first-generation, low-income, and part-time students. Effective strategies to increase persistence include rigorous high school preparation, first-year experience programs, fostering belonging and self-efficacy, and improving financial aid access.

### ***Definition***

*The percentage of Nebraska public postsecondary students who enroll in their second year of college.*

---



## POSTSECONDARY GRADUATION

Degree completion substantially boosts individual earnings, civic engagement, and health outcomes. Enhancing graduation rates requires efforts beginning in high school (e.g., GPA support, advanced coursework) and continuing in college through collaborative learning environments, efficient credit transfer policies, and expanded financial aid.

### ***Definition***

*The percentage of postsecondary students who complete a degree within 150% of the expected program time.*



## EMPLOYMENT GAP

Nebraska faces a growing skills gap as the demand for highly educated workers exceeds the supply. Sectors like healthcare, technology, and skilled trades experience acute shortages. Addressing the employment gap requires aligning educational output with labor market needs, supporting workforce participation, and attracting skilled workers from outside the state.

### *Definition*

*The mismatch between the number of job openings and the number of Nebraska students qualified to fill them.*

---



## TIME TO EMPLOYMENT

A quick transition to employment benefits graduates' financial, psychological, and social well-being. Delays in employment can increase risks of underemployment, job dissatisfaction, and reduced long-term earnings. Factors influencing time to employment include age, socioeconomic status, educational attainment, work experience during college, and institutional support for internships and career preparation.

### *Definition*

*The percentage of Nebraska students who secure stable employment within six months of exiting their educational institution.*



## INDUSTRY PLACEMENT

Industry placement data are critical for assessing the alignment of education programs with economic needs. In Nebraska, healthcare, education, and trades are key sectors for projected job growth. Students placed in high-wage, high-demand fields typically experience stronger long-term earnings, while mismatches can result in persistent underemployment. Career and technical education (CTE) pathways, credential attainment, and early work experience help improve placement outcomes.

### *Definition*

*The rates at which Nebraska students are employed are placed in each sector and industry after exiting their educational institution.*

---



## EMPLOYMENT LOCATION

Employment location is closely tied to talent retention and return on public investment in education. Nebraska has historically experienced “brain drain,” losing highly educated individuals to other states. Factors affecting graduates’ employment location include job opportunities, wages, community belonging, and amenities. Strategies to improve in-state retention include fostering community attachment, expanding career opportunities, and addressing wage competitiveness.

### *Definition*

*The percentage of Nebraska students who are employed within Nebraska after completing their education.*

## Cohorts

To ensure consistent analysis, NSWERS organizes individuals into a structured set of cohort types based on students' educational and workforce participation pathways. These cohort types are designed to align with federal reporting standards (such as IPEDS), accommodate enrollment and employment behaviors, and reflect Nebraska's specific longitudinal data capacity.

The use of standardized cohorts allows NSWERS to:

- Provide stable measurement across institutions, sectors, and years
- Estimate the effects of educational experiences on outcomes
- Support evaluation by clearly tying data usage to academic program participation event types (i.e. enrollments, exits, and graduations)

Each cohort type is aligned with one or more NSWERS outcomes. Below is a description of each cohort type, the outcomes associated with it, and the logic supporting its design.

### **EXPECTED HIGH SCHOOL GRADUATION YEAR COHORT**

This cohort mirrors national accountability models (e.g., ESSA) and allows clear tracking of four-year graduation rates while accounting for verified transfers, deaths, and other exclusions. This cohort is the maximum number of students that could have been expected to have graduated from a Nebraska public high school after adjusting for students that exited the system for reasons unrelated to high school graduation. It reflects an "expected" population against which graduation can be assessed.

#### ***Definition***

*Students from Nebraska public high schools are assigned an expected graduation date of four years after first entering the 9th grade.*

#### ***Associated Outcomes:***

- High School Graduation

## **HIGH SCHOOL GRADUATE (4-, 5-, AND 6-YEAR) COHORTS**

Students' postsecondary enrollment behavior is typically analyzed with respect to their observed graduation date. Including five- and six-year high school graduates recognizes that extended graduation pathways still lead to valuable postsecondary and workforce participation.

### ***Definition***

*Students who graduate within four, five, or six years of entering 9th grade, measured separately.*

### ***Associated Outcomes:***

- College Going
- Time to Employment
- Industry Placement
- Employment Location

## **FALL FIRST-TIME, FULL-TIME, DEGREE-SEEKING POSTSECONDARY COHORTS**

Aligning with IPEDS cohort definitions allows direct comparison to federal benchmarks while enabling analyses across both two- and four-year institutions. Using first-time, full-time students provides a standardized lens on traditional pathways into higher education.

### ***Definition***

*Students who enter a Nebraska two-year or four-year public institution in the fall as first-time, full-time, degree-seeking students.*

### ***Associated Outcomes:***

- Postsecondary Persistence
- Postsecondary Graduation

## **POSTSECONDARY EXITER (WITH/WITHOUT AWARD) COHORTS**

Workforce outcomes are shaped both by students who complete credentials and those who leave without one. Including both award earners and non-earners in exit cohorts allows NSWERS to accurately assess employment patterns, talent retention, and workforce gaps for the full range of educational experiences.

### ***Definition***

*Students who exited a Nebraska postsecondary institution after a period of degree-seeking enrollment, whether they earned an award (degree/certificate) or not.*

### ***Associated Outcomes:***

- Employment Location
- Employment Gap

## **WORKFORCE JOB HOLDER (2- AND 4-YEAR POSTSECONDARY, WITH/WITHOUT AWARD) COHORTS**

To study time to employment and industry placement meaningfully, NSWERS includes only those confirmed to have obtained a job. This eliminates ambiguity that would occur if non-employed individuals (or individuals employed out-of-state) were included without confirmation. Distinguishing between 2-year and 4-year exiters, and award status, further refines the analysis for workforce readiness and sector alignment.

### ***Definition***

Students who exited postsecondary education and secured documented employment in Nebraska, verified through administrative records.

### ***Associated Outcomes:***

- Time to Employment
- Industry Placement

## Research Constructs

Not all objects of research interest are directly measured or collected by NSWERS partner agencies or institutions. In education research, proxy variables have long been used to approximate something that is difficult to collect or measure, such as the use of GPA as a proxy for cognitive abilities or free/reduced lunch program participation as a proxy for economic status. Using data elements identified in the NSWERS File Specifications, NSWERS maps sets of variables into proxy/derived variables or constructs that can be used as units of analysis for various statistical procedures. For example, in the K-12 realm, a primary outcome of interest is On-Time High School Graduation. This construct is inferred from a set of enrollment codes and timestamps from a logging system, rather than directly measured. While relatively straightforward to calculate, it is not directly provided. As perhaps a more ambiguous example, we are interested in how Coursetaking Behavior affects certain education and workforce outcomes, such as employment gap, graduation rates, or industry placement. Coursetaking behavior does not have a single definition, but rather is a cluster of concepts that may be inferred from a transcript log, such as calculating the number of STEM courses, the number of failed courses, or an interaction between course subject areas and academic performance.

At the end of this document (see Appendix B – Research Construct Crosswalk), we provide a crosswalk of the NSWERS data elements or field names contained in each of the File Specification documents to the research constructs under investigation. The provided mappings include, but are not limited to, the bulk of the research constructs that NSWERS intends to utilize in its data products.

## Other Data Uses

In addition to these internal research activities, NSWERS will conduct research and development to strengthen data privacy and confidentiality within the NSWERS data system, including the evaluation and application of methods such as synthetic data generation, differential privacy, data masking, perturbation, and cell suppression, with emphasis on preserving analytical utility while minimizing disclosure risk.

NSWERS also fulfills external data requests or conducts evaluations on behalf of its partners, and, under controlled circumstances, affiliates, contributors and qualified third-party entities. The details of these data uses are provided in the following sections.



# DATA REQUESTS



The management and fulfillment of data requests are closely tied to NSWERS' mission, operating authority, and legal responsibilities, as detailed in the NSWERS Data Management Policies and Procedures.

## **Purpose**

Data requests play a key role in ensuring that the information maintained within the NSWERS data system can support broader evaluation activities and research initiatives that align with the purposes for which the data were originally collected: program evaluation, continuous improvement, and public benefit.

All requests are reviewed rigorously to ensure they remain consistent with the original educational, workforce development, and public policy purposes for which the data were shared with NSWERS.

## **Considerations for Fulfillment**

Data requests that expressly pertain to analyses covered within the NSWERS Information and Research Agenda will be fulfilled and processed in accordance with the standards outlined in the NSWERS Data Management Policies and Procedures. These requests are presumed to fall within the originally authorized purposes for which NSWERS data were collected.

Where a data request proposes analyses or uses that extend beyond the topics, constructs, or evaluation purposes defined in this Information and Research Agenda, additional safeguards are required. Such requests may only be authorized through the execution of supplementary agreements, such as an additional Data Sharing Agreement (DSA) or an amendment to existing agreements. This ensures that any expanded use of data maintains strict alignment with federal and state legal requirements, protects the confidentiality of individual records, and honors the conditions under which NSWERS data were originally shared by its Partners and Affiliates.

All requests, whether aligned to the Information and Research Agenda or requiring additional agreements, are subject to:

- Rigorous review by the NSWERS Executive Director and Research and Evaluation Team,
- Endorsement by the NSWERS Executive Council for Level 2 data requests and linked Level 2 records, as appropriate, and
- Compliance with NSWERS privacy, security, and disclosure protocols.



# EVALUATION REQUESTS



In addition to supporting program improvement through data requests, NSWERS also fulfills formal evaluation requests. Evaluation requests involve conducting analyses on behalf of NSWERS partners, or, under controlled conditions, third-party entities, to systematically examine the effectiveness of specific interventions, policies, or programs.

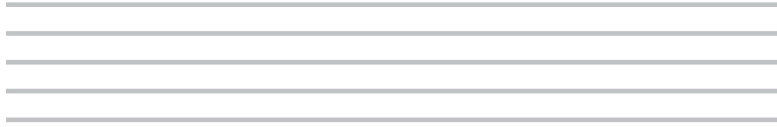
Evaluation activities are critical to NSWERS' mission of informing continuous improvement across Nebraska's education and workforce systems. The management and fulfillment of evaluation requests are governed by the same legal and privacy frameworks that underpin all NSWERS activities, as described in the NSWERS Data Management Policies and Procedures.

## **Purpose**

Evaluation requests ensure that NSWERS data are used to directly support program monitoring, system improvement, and evidence-based decision making. Evaluations must be framed to address interventions that target either education or workforce outcomes directly or evidence supported precursors to those outcomes.

## **Considerations for Fulfillment**

Evaluation requests that expressly fall within the topics, constructs, or intended purposes outlined in the NSWERS Information and Research Agenda will be considered and processed according to NSWERS protocols, as described in the NSWERS Data Management Policies and Procedures.



# ANALYTIC FRAMEWORK



## Stages of Analysis

The NSWERS Stages of Analysis framework provides a rigorous approach to understanding, describing, modeling, and forecasting outcomes for defined student populations. Each population-outcome pair, e.g., a specific population (e.g., 2022 high school graduates) measured against a specific outcome (e.g., college going) is moved systematically through six escalating stages of analysis: **Explore, Describe, Explain, Predict, Forecast, and Simulate**.



Each stage serves a distinct analytical purpose:

- **Explore** builds foundational understanding of the outcome and its importance.
- **Describe** quantifies the outcome overall and with respect to differences over time and geography.
- **Explain** identifies relationships between predictors and outcomes.
- **Predict** uses machine learning models to estimate individual outcome probabilities and identifies variables that are important for predicting the outcome.
- **Forecast** projects population-level outcome trends into the future.
- **Simulate** models the effects of potential interventions on future outcome rates.

This structure ensures that NSWERS analyses are:

- Contextualized for Nebraska’s educational and workforce realities,
- Transparent in assumptions, methodologies, and limitations, and
- Providing actionable information for program evaluation, system improvement, and decision making.

While not every analysis conducted by NSWERS goes through these steps, the stages of analysis provide a foundation for quickly responding to questions posed by partner entities against the NSWERS data system.

The following sections detail the specific analytic tasks undertaken at each stage of the population-outcome analysis.

## EXPLORE

The Explore stage is the foundation of NSWERS' analytic process. Before any outcome is quantified, it must first be carefully understood in context: educationally, empirically, and within Nebraska's specific environment. Later stages of analysis are built on the information gained from the explore stage.

At this stage, NSWERS research staff complete a series of systematic activities:

### ***Conduct a literature review***

Staff review national and state-level research to understand how the outcome can be defined, its relevance, potential predictors, and typical interventions or strategies intended to affect it.

Literature review activities prioritize peer-reviewed studies, major evaluation reports, meta-analyses, and recognized national datasets where applicable. Special attention is given to research methods that account for confounding variables, selection bias, and use causal inference methods.

### ***Identify Nebraska-specific context***

After reviewing broader research, NSWERS staff document the specific educational, workforce, or policy relevance of the outcome in Nebraska. This includes considering existing state programs, demographic trends, or legislation that may influence how the outcome is understood or prioritized locally. For example, early postsecondary graduation may have heightened relevance given legislative initiatives setting postsecondary attainment goals.

### ***Assemble supplementary resources***

In addition to academic literature, staff assemble a curated list of public reports, datasets, and policy documents that provide local or national context for interpreting the outcome. These resources are documented to ensure transparency and to aid partners who may wish to understand external benchmarks or comparison points.

### ***Define the focal population***

Using available NSWERS data, staff define the target population(s) for the outcome analysis. This requires reconciling data realities (e.g., available enrollment, demographic, and outcome records) with theoretical ideals. Definitional choices, such as whether to include only first-time students, how to handle students enrolled at multiple institutions, or how to assign individuals with missing data, are documented for consistency.

## EXPLORE STAGE CONSIDERATIONS

Completing the Explore stage properly requires attention to several important factors:

**Conceptual clarity:** The outcome must be clearly defined so stakeholders understand what it represents, why it matters, and how it connects to individual and system success.

**Respect for Nebraska-specific conditions:** National findings must be understood relative to the Nebraska context, avoiding generalization from other states with different demographic, economic, or policy environments.

**Transparency in assumptions:** Assumptions about population inclusion, cohort assignment, or outcome operationalization made during the Explore stage must be documented and carried forward into subsequent stages.

## DESCRIBE

The Describe stage quantifies the outcome for the defined population. This stage provides statistics that allow meaningful comparisons across time and geography-based subpopulations.

The Describe stage addresses fundamental questions:

- What proportion of the population achieves the outcome?
- How does this change longitudinally and geographically?

At this stage, NSWERS research staff complete the following analytic tasks:

**Express the outcome as a rate:** The primary descriptive statistic calculated is the outcome rate — the number of individuals achieving the outcome divided by the number of individuals in the defined population. Raw counts are provided in addition to percentages for ease of interpretation.

**Calculate longitudinal outcome rates:** Outcome rates are calculated across all available cohort years. This allows detection of temporal trends (e.g., is college-going increasing or decreasing among recent high school graduates?) and identifies potential cohort-specific factors (e.g., pandemic-related disruptions).

**Assign individuals to geographic units:** Each individual in the population is assigned to a geographic region, such as a community college service area, economic development district, or school district of origin. Ambiguities must be handled clearly. For example, should students be assigned to regions based on the location of the school or residential addresses? Generally, the method that minimizes missingness while maintaining interpretability is preferred.

**Disaggregate outcome rates by geography:** Staff produce outcome rates for each geographic unit. These are essential for understanding whether outcomes are distributed equitably across Nebraska and for informing regional workforce and education planning.

**Expand geographic definitions if necessary:** When needed, additional geographic breakdowns (e.g., rural vs. urban, legislative districts) are created to answer emerging policy questions or to align with reporting needs.

## DESCRIBE STAGE CONSIDERATIONS

Several key issues must be carefully managed during the Describe stage to ensure valid, interpretable results:

**Handling missing or incomplete data:** Staff use principled methods for addressing missing cohort or outcome records, or geographic assignments. These methods (e.g., exclusion rules, imputation strategies) must be transparent and consistently applied.

**Respect for population denominators:** Careful attention must be paid to defining the denominator for outcome rates. For example, rates of college-going must be restricted to students who graduated high school, i.e. those that would generally be eligible for enrollment at public postsecondary institutions.

**Attention to comparability across years:** Population inclusions and operational rules must remain stable across years to allow longitudinal comparisons. Changes in definition must be carefully flagged and documented.

**Geographic stability:** Staff must be aware of geographic boundary changes (e.g., school district consolidations) and adjust analyses accordingly to maintain longitudinal comparability.

## EXPLAIN

The Explain stage begins to investigate potential drivers of observed outcomes. Where the Describe stage answers “what is happening,” the Explain stage addresses “what is associated with the outcome”. This lays the groundwork for predictive modeling, program evaluation, and other system improvement efforts.

This stage focuses on investigating how student characteristics, educational experiences, and contextual factors are related to the likelihood of achieving the outcome. This stage identifies strong predictors or correlates of outcomes that may be useful in causal modeling, intervention design, or policy change.

NSWERS research staff complete the following analytic tasks during Explain:

### ***Select research constructs and predictors***

Based on the literature review and data exploration, staff select a set of theoretically informed and data-available predictor variables. These might include academic performance indicators, demographic characteristics, program participation flags, geographic variables, or other constructs known to relate to the outcome of interest.

### ***Calculate bivariate effect sizes***

For each selected predictor, NSWERS calculates standardized bivariate effect sizes (e.g., Tjur's D for binary outcomes) that quantify the strength of association between the predictor and the outcome. Predictors are ranked by effect size to identify which factors are most strongly related to outcome variation.

### ***Cross-tabulate outcomes by predictor levels:***

Staff generate contingency tables showing the proportion achieving the outcome at each level of the predictor variable. For example, college-going rates might be cross-tabulated by high school GPA bands, race/ethnicity, or participation in dual enrollment.

### ***Visualize predictor–outcome relationships***

To support interpretation, staff create bar plots showing the outcome rate at each level of categorical predictors, and by bins of continuous predictors. For example, plotting the rate of on-time graduation across bands of high school GPA.

### ***Examine changes over time***

Predictor–outcome relationships are analyzed longitudinally where possible. For each predictor, outcome rates are plotted over time to see whether the strength or direction of relationships shifts across cohorts. This is important for identifying emerging trends (e.g., widening gaps in college-going by GPA over time).

## **EXPLAIN STAGE CONSIDERATIONS**

Executing the Explain stage carefully requires attention to several methodological and interpretive challenges:

**Correlation is not causation:** Staff must be explicit that bivariate associations do not imply causal relationships. Observed relationships may be confounded by unmeasured factors (e.g., selection bias, omitted variables).

**Predictor operationalization matters:** The way predictor variables are coded and categorized can strongly influence observed effect sizes. Binning continuous variables should be done thoughtfully to preserve meaningful distinctions without overfitting random noise.

**Avoid over-interpretation of small effects:** Especially in large administrative datasets, very small effect sizes can be estimated precisely, but may be practically trivial.

**Check for stability across cohorts:** Relationships that appear strong in a single cohort may not generalize across years. Consistent associations across multiple cohorts are stronger evidence of robust relationships.

## PREDICT

The Predict stage models the outcome as a multivariate function of available predictor variables. Where the Explain stage identifies simple associations, the Predict stage integrates multiple predictors simultaneously to estimate each individual's probability of achieving the outcome. The goal of Predict is to create decision-support tools that can identify students most likely to succeed or need support, inform resource allocation, and provide actionable insights for interventions.

In this stage, NSWERS builds and evaluates predictive models using machine learning techniques, with a focus on balancing predictive performance, interpretability, and utility.

NSWERS research staff complete the following tasks during Predict:

### ***Construct a predictive model***

Staff fit a random forest model to the cohort-outcome data. Random forests are chosen because they accommodate non-linear relationships, complex interactions, and can handle large numbers of predictors without overfitting as easily as traditional models.

### ***Generate individual probability estimates***

The model outputs predicted probabilities of achieving the outcome for each individual in the population, based on their predictor values.

### ***Assess feature importance***

Staff extract and examine the relative importance of each predictor in the model, identifying which factors most strongly drive model predictions. Feature importance rankings are compared to the bivariate rankings from the Explain stage to assess consistency.

### ***Quadrant analysis of predictors***

Using model-derived variable importance metrics (impact) and external information about modifiability (influence), predictors are classified into quadrants:

- High importance, high modifiability
- High importance, low modifiability
- Low importance, high modifiability
- Low importance, low modifiability

This helps identify which factors are both predictive and actionable by decision-makers.

### ***Explore intervention thresholds***

For high-impact predictors, NSWERS plots model-predicted probabilities against predictor values to identify thresholds or regions where interventions may be especially effective. For example, if persistence probability sharply increases above a certain high school GPA threshold, that threshold can inform intervention targeting.

### ***Evaluate model performance***

Staff calculate and report model performance metrics including:

- Accuracy
- Sensitivity (true positive rate)
- Specificity (true negative rate)
- Confusion matrix

These metrics ensure that the model's predictions are meaningfully better than random assignment and suitable for operational use.

### ***Visualize model outputs***

Model performance is communicated through bar plots of predicted outcome probability conditional on the observed outcome and confusion matrices to aid interpretation and transparency.

## PREDICT STAGE CONSIDERATIONS

The Predict stage requires careful attention to several technical considerations:

**Generalizability:** Models should be trained and tested on separate data (cross validation or holdout methods) to avoid overfitting to historical idiosyncrasies.

**Interpretability vs. complexity:** While random forests are powerful, they are less interpretable than simpler models. NSWERS emphasizes clear reporting of feature importance and partial dependence relationships to support understanding.

**Use for decision support, not determinism:** Predictions are used to identify students at higher risk or likelihood, but never as deterministic judgments. Model probabilities are one input among many for decision-making.

## FORECAST

The Forecast stage attempts to model how outcomes are likely to evolve for entire populations looking 3-5 years into the future. Where Predict focuses on estimating probabilities for individuals, Forecast focuses on projecting population-level rates or counts into future years, assuming current trends.

Forecasting provides decision makers and institutional leaders with forward-looking insights:

- How many students are likely to graduate, enroll, persist, or attain workforce milestones in future years?
- Will achievement gaps widen or narrow under current trajectories?
- Where should resources be allocated to meet future needs?

NSWERS research staff complete the following analytic tasks during Forecast:

### ***Estimate multiple forecast models***

Staff build several forecasting models using historical outcome rates. These models may include:

- ETS Models
- Random Walk Models

### ***Combine forecast models***

To improve robustness and reduce the risk of relying on any single model's assumptions, NSWERS combines forecasts using an unweighted combination method. This ensemble approach smooths over model-specific biases and typically improves overall forecast accuracy compared to relying on a single best-fitting model.

### ***Visualize forecast trajectories***

Forecast results are presented as projections of outcome rates or counts over future years, typically 3–5 years beyond the last observed cohort.

Visualizations include:

- Line plots with forecasted trends and forecast intervals
- Comparative plots showing observed historical data alongside forecasted values
- Breakdowns by key subgroups if sufficient data exists (e.g., regional projections, demographic projections)

### ***Document assumptions***

All forecast models clearly document the stability of cohort definitions, existence of major external shocks, and continuity of policy environments. Staff note that forecasts are conditional on current trends and should be revisited regularly as new data emerges.

## **FORECAST STAGE CONSIDERATIONS**

Producing meaningful and responsible forecasts requires careful attention to several key considerations:

**Trend stability:** Forecasts assume that underlying patterns will persist. Major policy shifts, economic shocks, or systemic disruptions (e.g., pandemics) can invalidate projections.

**Length of forecast horizon:** Forecast accuracy typically decreases as the forecast horizon extends. NSWERS emphasizes near-term (1–5 year) forecasts as most actionable for planning.

**Sensitivity to model choice:** Staff check that combined forecasts are not unduly influenced by outlier models or spurious short-term fluctuations.

**Communicating uncertainty:** NSWERS always presents forecast intervals, not point estimates alone. Uncertainty is a fundamental feature of forecasting and must be transparently communicated.

**Limited use of forecasts:** Forecasts are presented as tools for planning and scenario analysis, not as certainties. Decision makers are encouraged to use forecasts to identify areas needing attention, not to assume inevitable outcomes.

## SIMULATE

The Simulate stage provides model derived projections of how hypothetical changes, such as expanding a program, adjusting a policy, or targeting new interventions might shift future outcomes attainment rates for the targeted populations. Simulation is valuable because it allows institutional leaders and decision makers to test intervention strategies before deploying them, estimate their likely impacts, and make evidence-based decisions about where and how to invest resources for the greatest return.

The current simulation models are designed to demonstrate the tool's capacity and may not fully reflect specific policy contexts. The usefulness of simulation outputs depends on how closely the model assumptions align with real-world conditions. Users are encouraged to consult with NSWERS to develop custom simulations that match their particular needs and decision-making environments. Information from NSWERS-conducted evaluations and studies can be included in future iterations.

In this stage, NSWERS research staff complete the following analytic tasks:

### ***Develop intervention scenarios***

Staff define one or more hypothetical changes to the system. Examples include:

- Increasing dual enrollment participation by a targeted percentage
- Raising high school GPA thresholds by specific margins
- Expanding FAFSA completion rates among high school graduates

### ***Select simulation targets***

Staff identify which subgroups or predictor variables the intervention is expected to affect. For example, a mentoring program might target students below a certain high school GPA, while a financial aid expansion might target lower-income students.

### ***Apply the predictive model***

Using the predictive models developed during the Predict stage, NSWERS re-estimates outcome probabilities under the hypothetical intervention conditions. Predictor values are modified accordingly (e.g., all students below a GPA threshold are lifted by 0.3 points) and new predicted probabilities are generated.

### ***Estimate outcome changes***

Staff aggregate the simulated individual probabilities to estimate changes in overall population outcome rates or counts. The difference between the baseline (forecasted) outcomes and the simulated outcomes represents the estimated impact of the intervention.

### ***Visualize intervention effects***

Results are presented through visualizations that illustrate the difference in outcome distribution between the status quo and the intervention conditions.

## **SIMULATE STAGE CONSIDERATIONS**

Simulation is powerful but must be conducted and interpreted carefully:

**Respect for model limitations:** Predictive models are calibrated on historical data. Simulations assume that modeled relationships remain stable under intervention. This may not hold true if interventions fundamentally alter the underlying dynamics.

**Feasibility and realism:** Interventions should be plausible within operational and policy constraints. Simulating unrealistic scenarios (e.g., 100% program participation with no cost) risks generating misleading conclusions.



# DATA DISSEMINATION



NSWERS has two avenues for providing its end users with access to analytic products. One that exists in a private, secured environment where access is only granted to NSWERS' partners and another in a public environment that contains equivalent information, safeguarded with privacy enhancing techniques that protect against possible re-identification. These two products and their features are described in the following sections.



## **insights+**

insights+ is NSWERS' integrated data submission, analytics, exploration, and visualization platform, designed to support NSWERS partners in examining Nebraska's educational and workforce outcomes. It is a secure login site, providing an interactive environment where authorized users can access standardized analyses, explore cohort trends, and visualize key indicators across the full education-to-workforce continuum. It also contains ad-hoc analysis tools that enable a limited set of supported analytics to partners on a role-restricted basis.

insights+ plays a critical role in implementing the NSWERS Information and Research Agenda by:

### **DOCUMENTING OPERATIONALIZATION OF CORE OUTCOMES**

insights+ transparently defines how NSWERS outcomes such as College Going, Postsecondary Persistence, and Employment Location are measured, ensuring consistent application across evaluations and institutions.

### **SUPPORTING EVALUATION PURPOSES**

insights+ enables authorized users to examine program, institutional, and statewide trends for evaluation purposes consistent with the Family Educational Rights and Privacy Act (FERPA) evaluation exception, as referenced in NSWERS Data Sharing Agreements. Analyses are designed to measure program effectiveness, identify areas for improvement, and support evidence-based planning. Furthermore, insights+ serves as a secure platform for sharing additionally authorized data to support specific program evaluation, in conjunction with existing data maintained by NSWERS.

## **DATA-INFORMED DECISIONS**

insights+ transforms data submitted by NSWERS Partners and Affiliates into information that supports decision-making. Through cohort filters, disaggregation tools, and standardized outcome measures, users can explore patterns that inform resource allocation, policy development, and institutional strategy.

## **TRANSPARENCY AND CONSISTENCY**

By providing access to cohort definitions, field logic, and calculation methods, insights+ promotes a common understanding of key metrics. All displayed metrics are generated from harmonized datasets and adhere to documented specifications, which enables comparability across time, institutions, and sectors.

insights+ is a continuously evolving platform, updated to reflect changes in the NSWERS Data File Specifications, improvements in construct definitions, and emerging analytic needs. Its ongoing development ensures that NSWERS evaluation activities remain rigorous, relevant, and accessible.

# > insights

## insights

While insights+ serves authorized internal partners, NSWERS also offers a public-facing platform, insights, designed to provide transparent, user-friendly access to Nebraska's education and workforce outcomes. Available at [insights.nswers.org](https://insights.nswers.org), the platform empowers educators, policymakers, families, and community leaders to explore key indicators across the state's learning-toearning continuum.

### PURPOSE AND AUDIENCE

insights serves as a resource for:

- Educators and administrators seeking to improve programs and student outcomes.
- Workforce development professionals aligning training initiatives with labor market needs.
- Policymakers and civic leaders making data-informed decisions.
- Students and families seeking general information about education and workforce outcomes for different career pathways.

### KEY FEATURES

- **Interactive Dashboards:** Visualize trends over time for NSWERS outcomes
- **Data Briefs:** Short, focused reports that examine a single NSWERS outcome, such as Postsecondary Persistence or College Going. These briefs offer a clear, accessible summary of outcome-specific trends and findings
- **Special Reports:** In-depth analysis that span multiple outcomes or investigate cross-system topics, such as dual enrollment
- **Stories:** Narrative accounts illustrating the real-world impact of educational and workforce trends
- **Literature Reviews:** Summaries of academic research that contextualize key findings and highlight evidence-based practices
- **Instant Insights:** Quickly accessible pre-built visualizations and key metrics for the most commonly requested outcomes and cohorts



ANTICIPATED  
PUBLIC DATA  
PRODUCTS



As part of its commitment to transparency, public value, and continuous system improvement, NSWERS regularly produces a series of public data products for dissemination through its insights platform. These products are intended to communicate key findings from NSWERS analyses in accessible formats, support data-driven decision-making by partners and decision makers, and advance public understanding of Nebraska’s education and workforce pipelines.

The production and release schedule for these products is **tentative**. Final release will depend on:

- Available NSWERS staff and technical capacity,
- Requests and priorities identified by NSWERS partners and the NSWERS Executive Council,
- Data availability and quality at the time of analysis, and
- The absence of major methodological concerns that would compromise the validity or reliability of reported findings.

An up-to-date version of this schedule, reflecting partner feedback and statewide priorities, will be maintained and published at [nswers.org](https://nswers.org).

## Planned Releases

### Q2 2026

- Workforce Outcomes for High School Graduates
- Employment Gap Story

### Q3 2026

- Health Sciences CTE Study
- Award Attainment Brief

### Q4 2026

- Teacher Preparation Pipeline
- Covid Recovery Brief
- Industry Placement Data Briefs

### Q1 2027

- Returning Talent Brief
- Dual Enrollment Update

## **Future Topics for Development**

As capacity allows and as priorities evolve, NSWERS may develop additional public products addressing the following topics:

- Post-College Earnings Trajectories
- Course-Taking and College Going Patterns
- Major-Switching and Postsecondary Graduation Outcomes
- Education and Workforce Outcomes for Career and Technical Student Organization (CTSO) Participants
- Kindergarten Redshirting and Future Education Outcomes
- Employee Tenure and Career Stability in Nebraska's Workforce



SPECIAL  
TOPICS



In addition to producing research and data products related to NSWERS core outcomes, NSWERS maintains a set of standalone research topics that are relevant across multiple outcomes, have cross-system impact, or align with the broader mission, vision, and legislative direction of the organization.

Special Topics represent areas where NSWERS can proactively investigate education and workforce topics, as well as respond flexibly to emerging policy needs, partner priorities, and evaluation opportunities.

Federal guidance under the Family Educational Rights and Privacy Act (FERPA) evaluation exception clarifies that data sharing to facilitate future evaluations is permissible even before the specific evaluation topics are fully defined. Specifically, disclosure of PII to an integrated data system (IDS) is allowed to enable *future* evaluations of federally- or state-supported education programs by establishing linked data in advance. This framework ensures that NSWERS can responsibly support long-term evaluation efforts while maintaining data governance compliance.

Special Topics also serve as a structured mechanism for NSWERS to address research needs that emerge through annual partner engagement, NSWERS Executive Council guidance, or legislative inquiry.

## **NSWERS Mission**

Integrate and organize Nebraska’s education and workforce data to inform decision making.

## **NSWERS Vision**

Create a data-informed decision culture that supports successful pathways of learning and earning for the people of Nebraska.

## **NSWERS Legislative Direction**

### **(LB1160, SECTION 2, SUBSECTION 3):**

“The Nebraska Statewide Workforce and Educational Reporting System is envisioned as a comprehensive, sustainable, and robust lifelong learning and workforce longitudinal data system to allow for the targeting of resources, and focus data analysis on assessing workforce development and employment success in order to enable the training of tomorrow’s workforce.”

# Examples of Special Topics

## CROSS-OUTCOME TOPICS

- K-12 Student Attendance and Long-Term Outcomes
- Academic Growth Trajectories Across Sectors
- Pre/Post Pandemic Comparisons of Educational and Workforce Outcomes
- Chronic Absenteeism and Postsecondary Outcomes
- Academic Recovery Following Disruptions
- Cumulative Disadvantage Trajectories (e.g. students facing multiple risk factors)

## CROSS-SYSTEM TOPICS

- Cradle-to-Career Pipeline Mapping
- Student Flow and Longitudinal Transfer Pathways
- Dual Enrollment Participation and Effects
- College Preparatory Coursework Completion Rates
- First-Year Credit Accumulation and Early Momentum Indicators
- Work-While-Enrolled Patterns and Workforce Readiness
- Credential Stacking and Career Outcomes

## WORKFORCE DEVELOPMENT AND EMPLOYMENT SUCCESS TOPICS

- Career Progression Following Postsecondary Exit
- Employment Tenure and Workforce Stability
- Underemployment and Skills Mismatch Analysis
- Earned Wages and Short-Term vs. Long-Term Growth Patterns
- Career Transition Outcomes Following High School
- Credential of Value and Minimum Economic Return Thresholds
- Economic Mobility and Wage Trajectories After Postsecondary Completion
- Industry Sector-Specific Talent Gaps (e.g., Education, Healthcare, Information Technology, Skilled Trades)

## **PRIORITIZATION OF SPECIAL TOPICS**

Special Topics will be prioritized based on:

- Alignment with NSWERS mission and legislative directives,
- Input from NSWERS Executive Council, Partner Representatives, and Advisory Committee,
- Availability and quality of required data elements,
- Analytic capacity and operational bandwidth at the time of request, and
- Potential policy relevance of the analysis.

NSWERS may also develop a formal Special Topics prioritization process during future agenda updates to systematically manage incoming research requests and partner needs.



# FINANCIAL AID DATA



This section outlines the planned usage of financial aid-related data. NSWERS analyses will focus strictly on its relationship with college going, postsecondary persistence, and postsecondary graduation outcomes due to restrictions placed on data use by the Higher Education Act (HEA).

## **Scope and Use of Financial Aid Data**

These elements serve as critical indicators of socioeconomic status and financial need in higher education. They represent the most reliable postsecondary source of such information, due to their derivation from both self-report and federal administrative data. All analyses are designed to support the administration and improvement of outcomes for participants of student aid programs by examining how financial aid and student need affects college going, persistence, and completion.

## **Expected Benefits**

Findings from these analyses will inform NSWERS' partners about opportunities to strengthen student aid strategies by targeting supports that reduce attrition, improve degree completion, and better serve students with demonstrated financial need. Incorporating these elements into the NSWERS system enables Nebraska's public institutions to coordinate improvements to postsecondary attainment that extend beyond their individual purviews.

## **Integration into NSWERS Products**

All use of financial aid data is governed by NSWERS' data management policies and procedures, ensuring data is never used beyond its allowable scope. All public analyses use only de-identified, aggregate data with appropriate suppression rules applied to minimize risk of individual identification or inference.

### **INSIGHTS PLATFORM**

Financial aid data will be incorporated into NSWERS' publicly available research products, including:

#### ***Research Briefs and Special Report topic coverage:***

- Analysis of student persistence and graduation rates disaggregated by Pell grant receipt and SES proxied via SAI/EFC.
- Examination of Pell Grant recipients' postsecondary outcomes across different demographic and institutional categories.

- Time-to-degree comparisons based on socioeconomic status, using Pell award status and SAI/EFC percentiles.
- Topics of above cross-referenced with other NSWERS data, such as ACT scores, high school preparation or advanced coursework (e.g. dual enrollment), student origin (e.g. in-state vs out-of-state).

After management committee review, these findings will be published on the insights platform, adhering to all NSWERS data governance protocols.

## INSIGHTS+ PLATFORM

Financial aid data will be leveraged in private analyses for more complex research needs:

- **insights+ Analyzer and Query Builder:** To align with federal guidance, financial aid data will not be exposed in unrestricted querying interfaces, ensuring that its use remains confined to pre-approved models that directly support the evaluation of aid-related outcomes.
- **insights+ Stages of Analysis (Outcomes):** Financial aid data will be integrated into predefined models, serving as a covariate in analyses designed to Explain, Predict, and Simulate dashboard for postsecondary outcomes.
- **Data Requests:**
  - Level 2 Data Requests:
    - Financial aid information will not be eligible for level 2 data requests.
  - Level 3 Data Requests:
    - Researchers may request Postsecondary outcome rates and counts disaggregated by financial aid data, along with other requested disaggregates, subject to NSWERS data management policies (e.g. cell suppression)

## **Schedule for Inclusion in Products**

The following timeline outlines when financial aid-related findings will be incorporated into NSWERS' public research agenda:

### **Q1 2026**

- Inclusion in insights+ stages for postsecondary persistence and postsecondary graduation outcomes.

### **Q2 2026**

- Report on postsecondary persistence including financial aid information.

### **Q3 2026**

- Report on postsecondary graduation including financial aid information.

Inclusion in products beyond this timeline will be covered by future updates to the information and research agenda.



# REVIEW AND UPDATE PROCESS



To ensure that the NSWERS Information and Research Agenda remains relevant, responsive, and reflective of evolving education and workforce needs, NSWERS intends to utilize a flexible review and update process. This process ensures that the agenda continues to align with statutory purposes, supports partner needs, and incorporates the latest developments in research and policy.

The agenda is kept current through a combination of structured annual review activities and ongoing environmental monitoring:

## **Inbound Communications Monitoring**

NSWERS staff continuously review partner communications and feedback, including conversations, inquiries, and data requests. Input from these channels may reveal emerging analytic needs, suggest refinements to cohort or outcome definitions, or highlight new opportunities for program evaluation.

## **Field Awareness and Literature Monitoring**

NSWERS staff maintain awareness of current research, national trends, and best practices in education and workforce policy. Although not a formal systematic review, this ongoing monitoring helps ensure that from time to time new and relevant topics are identified for inclusion.

## **Committee Engagements**

NSWERS will engage the Data and Technology Committee annually and the Management Committee as needed, to review the operationalization of cohorts and outcomes, assess warehouse data needs, and discuss potential additions to partner data collections. The NSWERS Advisory Committee will be engaged annually for updates to the communications and public data product portion of this document. These discussions provide structured feedback that shapes proposed updates to the Information and Research Agenda.

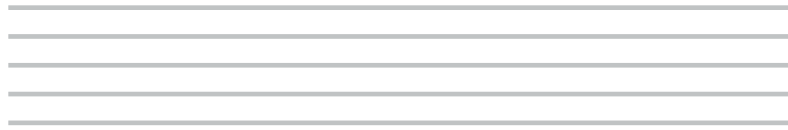
## **Executive Council Approval**

Proposed updates to the Information and Research Agenda are submitted annually to the NSWERS Executive Council for review and formal approval, although the Executive Council may consider ad-hoc revisions outside the regular cycle when warranted.



# APPENDICES





# APPENDIX A: CHANGE SUMMARY



## Version 2.1

April 29, 2026

- Inclusion of research to develop and evaluate Privacy Enhancing Technologies to support data use while minimizing disclosure risk.
- Update to tentative release schedule
- Inclusion of additional data elements in the Research Construct Crosswalk (Appendix B)

## Version 2.0

MAY 12, 2025

### *Major Changes:*

- Restructuring of the Information and Research Agenda document to reflect system capabilities, governance practices, and partner feedback.
- Addition of a fully detailed Roles and Responsibilities section, clarifying the duties of Executive Council, Research and Evaluation Team, Communications Team, Committees, and Technical Advisory Committee in the Information and Research Agenda.
- Expansion and formalization of the Data Use Framework, including the use of cohort-outcome models and new guidelines for consistent outcome measurement across time and geography.
- Addition of descriptions of cohort definitions, mapped explicitly to outcomes, aligned to IPEDS and SLDS best practices.
- Major update to the Analytic Framework (Stages of Analysis), detailing the specific analytic tasks and considerations for each of the six stages: Explore, Describe, Explain, Predict, Forecast, and Simulate.
- Inclusion of the role of the Information and Research Agenda in considering Data Requests and Evaluation Requests
- Addition of a **Dissemination** section, fully describing:
  - insights+,
  - insights,
  - Planned and tentative public research product schedule through 2026.

- Expansion of the **Special Topics** section:
  - Deepened list of topics under Cross-Outcome, Cross-System, and Workforce Development categories,
  - New explanation of the flexible role Special Topics serve in responding to emerging needs,
- Explicit statement of Special Topics prioritization criteria. Creation of a new **Financial Aid Special Section**, outlining:
  - Scope of financial aid data use within NSWERS,
  - Integration plan for insights and insights+ products,
  - Compliance with Higher Education Act (HEA) restrictions.
- Addition of an Annual Review and Update Process
- Addition of a Glossary of common terms

## Version 1.3.0

JULY 8, 2024

- Additions to the Special Topics Section

## Version 1.2.0

JULY 1, 2024

- Update to include additional data elements included in NSWERS File Specifications v1.3.0

## Version 1.1.0

MAY 30, 2023

- Update to include special topics section
- Update certain research questions, methods, and predictor variables

## Version 1.0.0

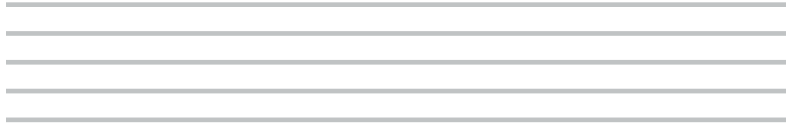
MAY 26, 2022

- Initial version publication

## Version 0.0.1

MAY 24, 2022

- Initial draft publication



APPENDIX B:  
RESEARCH  
CONSTRUCT  
CROSSWALK



## Postsecondary Data

| File Name                     | NSWERS Field Names(s)                                                                                                                                                      | Research Construct                      |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Postsecondary Academic Awards | Award Date, Award Code                                                                                                                                                     | Degree Completion                       |
| Postsecondary Academic Awards | Award CIP Code, Local Program Id                                                                                                                                           | Degree Subject Area                     |
| Postsecondary Academic Awards | Institution ID, Postsecondary Student ID                                                                                                                                   | Linking Variables                       |
| Postsecondary Courses         | Course Code Subject, Course Code Number, Course Section, Course Location, Course Name, Secondary Course Name, Course Description, Dual Credit Flag, Associated High School | Course Offerings/ Availability          |
| Postsecondary Courses         | Course Instruction Mode, Course Type, Course Weight/REU Factor                                                                                                             | Course Type                             |
| Postsecondary Courses         | Institution ID, Academic Year Ending, Postsecondary Term Code                                                                                                              | Linking Variables                       |
| Postsecondary Courses         | Instructor ID                                                                                                                                                              | Multi-Level/Cluster/ Grouping Variables |
| Postsecondary Enrollment      | Term Credit Hours Attempted                                                                                                                                                | Academic Load                           |
| Postsecondary Enrollment      | Term Credit Hours Earned, Term GPA                                                                                                                                         | Academic Performance/ Academic Distress |
| Postsecondary Enrollment      | High School Class Rank, High School Class Size, Cumulative High School GPA, GED Status                                                                                     | Academic Readiness                      |
| Postsecondary Enrollment      | Primary Program One (major), Primary Program Two (major), Secondary Program One (minor), Secondary Program Two (minor), Local Program Id                                   | Area of Study                           |
| Postsecondary Enrollment      | Primary Program One Level, Primary Program Two Level                                                                                                                       | Award Being Sought                      |
| Postsecondary Enrollment      | Census Flag, Full-Time Student Flag, First-Time Student Flag, Degree Seeking Flag, Education Level at Admission                                                            | Cohort Identification                   |
| Postsecondary Enrollment      | First Generation Student                                                                                                                                                   | First Generation Student                |
| Postsecondary Enrollment      | Gender                                                                                                                                                                     | Gender                                  |
| Postsecondary Enrollment      | Hispanic Indicator                                                                                                                                                         | Hispanic Ethnicity                      |

| <b>File Name</b>                  | <b>NSWERS Field Names(s)</b>                                                                                                                                                                                                                                      | <b>Research Construct</b>                  |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Postsecondary Enrollment          | Institution ID, NDE Student ID, SSN, Postsecondary Student ID, Term, Last Name, First Name, Middle Name, Last Name Alias, First Name Alias, Middle Name Alias, Birthdate                                                                                          | Linking Variables                          |
| Postsecondary Enrollment          | Marital Status                                                                                                                                                                                                                                                    | Marital Status                             |
| Postsecondary Enrollment          | State of High School Graduation                                                                                                                                                                                                                                   | Multi-Level/Cluster/<br>Grouping Variables |
| Postsecondary Enrollment          | Race 1 Code, Race 2 Code, Race 3 Code, Race 4 Code, Race 5 Code                                                                                                                                                                                                   | Race                                       |
| Postsecondary Enrollment          | State of High School Graduation                                                                                                                                                                                                                                   | Student Origin                             |
| Postsecondary Terms               | Institution ID, Postsecondary Student ID, Address Line 1, Address Line 2, Address City, Address State Abbreviation/Province, Address Postal Code, Address Country, Address Date, Address Type, Institution ID, Academic Year Ending, Postsecondary Term Code      | Linking Variables                          |
| Postsecondary Terms               | Start Date, End Date                                                                                                                                                                                                                                              | Spatiotemporal Location                    |
| Postsecondary Transcript          | Remedial Course Math Flag, Remedial Course English Flag, Course Credit Hours, Course Grade Points, Grade Mode, Course Completion                                                                                                                                  | Academic Success                           |
| Postsecondary Transcript          | Postsecondary Term Code, Course Code Subject, Course Code Number, Course Section                                                                                                                                                                                  | Course Taking Behavior                     |
| Postsecondary Transcript          | Institution ID, Postsecondary Student ID, Academic Year Ending                                                                                                                                                                                                    | Linking Variables                          |
| Postsecondary Transferred Courses | Articulation Term, Articulation Date, Academic Year Ending, External Source Name, External Source Id, Providing Course Subject, Providing Course Number, Receiving Category, Receiving Course Subject, Receiving Course Number, Credit Decision, Credits Accepted | Postsecondary Pathways                     |

# K12 Data

| File Name          | NSWERS Field Names(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Research Construct     |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| ACT State Contract | NAW Ed or Occ Plans, NAW Writing, NAW Reading, NAW Study Skills, NAW Math Skills, li Independent Study, li Honors Courses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Academic Self-Efficacy |
| ACT State Contract | HSG English, HSG Math, HSG Social Studies, HSG Natural Sciences, HS Average, State Rank English, State Rank Math, State Rank Reading, State Rank Science, English Score, Math Score, Reading Score, Science Score, Composite Score, US Rank English, US Rank Math, US Rank Reading, US Rank Science, US Rank Composite, Sum of Scale Scores, State Rank Composite, STEM Score, US Rank STEM, Writing Subject Score, US Rank Writing Subject Score, WDS Ideas and Analysis, WDS Development and Support, WDS Organization, WDS Language Use and Conventions, English Language Arts Score, US Rank ELA, Understanding Complex Text Indicator, SS English Date, SS English TP, SS English Score, OSEoHigh English td, SS English TCS, SS Math Date, SS Math TP, SS Math Score, OSEoHigh Math td, SS Math TCS, SS Reading Date, SS Reading TP, SS Reading Score, OSEoHigh Reading td, SS Reading TCS, SS Science Date, SS Science TP, SS Science Score, OSEoHigh Science td, SS Science TCS, SS Composite Score, SS STEM Score, SS Writing Date, SS Writing TP, SS Writing Subject Score, SS Writing TCS, State Rank STEM, State Rank ELA, Sum of SS Scale Scores, SuperScore ELA Score, State Rank Writing Subject Score, HSG English 9, HSG English 10, HSG English 11, HSG English 12, HSG Other English, HSG Algebra 1, HSG Algebra 2, HSG Geometry, HSG Trigonometry, HSG Beginning Calculus, HSG Other Advanced Math, HSG Computers, HSG General Science, HSG Biology, HSG Chemistry, HSG Physics, HSG US History, HSG World History, HSG Other History, HSG American Government, HSG Economics, HSG Geography, HSG Psychology, HSG Spanish, HSG French, HSG German, HSG Other Language, HSG Art, HSG Music, HSG Drama, Overall GPA, CR Progress, RCPE English POW, RCPP English POW, RCPC English POW, RCPRR English POW, | Academic Success       |

| File Name                    | NSWERS Field Names(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Research Construct         |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| ACT State Contract continued | RCPE English KOL, RCPP English KOL, RCPC English KOL, RCPRR English KOL, RCPE English CSE, RCPP English CSE, RCPC English CSE, RCPRR English CSE, RCPE Math PHM, RCPP Math PHM, RCPC Math PHM, RCPRR Math PHM, RCPE Math NQ, RCPP Math NQ, RCPC Math NQ, RCPRR Math NQ, RCPE Math A, RCPP Math A, RCPC Math A, RCPRR Math A, RCPE Math F, RCPP Math F, RCPC Math F, RCPRR Math F, RCPE Math G, RCPP Math G, RCPC Math G, RCPRR Math G, RCPE Math SP, RCPP Math SP, RCPC Math SP, RCPRR Math SP, RCPE Math ISE, RCPP Math ISE, RCPC Math ISE, RCPRR Math ISE, RCPE Math M, RCPP Math M, RCPC Math M, RCPRR Math M, RCPE Reading KID, RCPP Reading KID, RCPC Reading KID, RCPRR Reading KID, RCPE Reading CS, RCPP Reading CS, RCPC Reading CS, RCPRR Reading CS, RCPE Reading IKI, RCPP Reading IKI, RCPC Reading IKI, RCPRR Reading IKI, RCPE Science IoD, RCPP Science IoD, RCPC Science IoD, RCPRR Science IoD, RCPE Science SI, RCPP Science SI, RCPC Science SI, RCPRR Science SI, RCPE Science MIERS, RCPP Science MIERS, RCPC Science MIERS, RCPRR Science MIERS, HS Class Rank, HS GPA, HS Curriculum | Academic Success continued |
| ACT State Contract           | Barcode Indicator, Multiple Choice Score Indicator, Writing Score Indicator, Writing Condition Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Assessment Validation      |
| ACT State Contract           | Planned Occ, Certainty of Planned Occ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Career Intentions          |
| ACT State Contract           | Max Planned Ed Level, li ROTC, li Study Abroad, PtP PS Instrumental Music, PtP PS Vocal Music, PtP PS Student Government, PtP PS Publications, PtP PS Debate, PtP PS Theater, PtP PS Varsity Athletics, PtP PS Radio or TV, PtP PS Service Organizations, Expect to Work in PS, Est Weekly Work in PS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | College Activity Interests |

| <b>File Name</b>   | <b>NSWERS Field Names(s)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Research Construct</b>    |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| ACT State Contract | PS Choice 1, PS Choice 2, PS Choice 3, PS Choice 4, PS Choice 5, PS Choice 6, IISScience, IIPR Science, IISSArts, IIPR Arts, IISSSocial Service, IIPR Social Service, IISSBusiness Contact, IIPR Business Contact, IISSBusiness Operations, IIPR Business Operations, IISSTechnical, IIPR Technical, II Map Region 1, II Map Region 2, II Map Region 3, EOS Release, Attend PS Full or Part Time, Living Plans for PS, Planned Major, Certainty of Planned Major, EC FAFSA, Prox Home to PS, Institution Type Pref, Rank Institution Type Pref, MFComposition Pref, Rank MFComposition Pref, PS State Pref 1, PS State Pref 2, Rank Location Pref, Maximum Tuition Pref, Rank Cost Pref, PS Size Pref, Rank Size of Enrollment Pref, Rank Field of Study Pref, Rank Other Factor, Ranks Type | College Intentions           |
| ACT State Contract | HSC English 9, HSC English 10, HSC English 11, HSC English 12, HSC Other English, HSC Algebra 1, HSC Algebra 2, HSC Geometry, HSC Trigonometry, HSC Beginning Calculus, HSC Other Advanced Math, HSC Computers, HSC General Science, HSC Biology, HSC Chemistry, HSC Physics, HSC US History, HSC World History, HSC Other History, HSC American Government, HSC Economics, HSC Geography, HSC Psychology, HSC Spanish, HSC French, HSC German, HSC Other Language, HSC Art, HSC Music, HSC Drama, YS English, YS Math, YS Social Studies, YS Natural Sciences, YS Spanish, YS German, YS French, YS Other Lang, APEnglish, APMath, APSocial Studies, APNatural Sciences, APFor Lang                                                                                                         | Coursetaking Behavior        |
| ACT State Contract | Family Income Level, Mother or G1 Max Ed Level, Father or G2 Max Ed Level, HS Type, HS Size                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Demographic                  |
| ACT State Contract | Best Language, First Language, Access EL Services, Max EL Service Grade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | English Language Proficiency |
| ACT State Contract | Gender                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Gender                       |
| ACT State Contract | Instrumental Music HS, Vocal Music HS, Student Government HS, Publications HS, Debate HS, Theater HS, Varsity Athletics HS, Radio TV HS, Service Organizations HS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | High School Activities       |
| ACT State Contract | Hispanic or Latino                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Hispanic Ethnicity           |

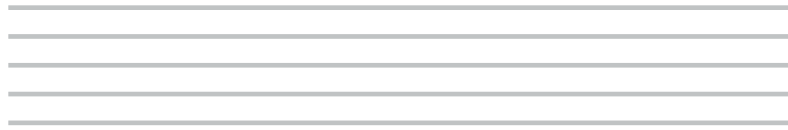
| File Name              | NSWERS Field Names(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Research Construct           |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| ACT State Contract     | NDE Student ID, First Name, Middle Initial, Last Name, Street Address 1, Street Address 2, City, State Abbreviation, Zip Code, Country Alpha code, Province, International Postal Code, Date of Birth, Grade Level, HS Code, HS Graduation Year, Test Date, TP, Reporting Year, Administration, Test Date CCYYMMDD, Contract Test Type, State Test Day Indicator, SoDS Student Last Name, SoDS Student First Name, SoDS Middle Initial, SoDS Gender, SoDS Date of Birth, Record ID | Linking Variables            |
| ACT State Contract     | American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, Prefer not to respond, Racial Ethnic Background                                                                                                                                                                                                                                                                                                              | Race                         |
| ACT State Contract     | State Use Question 01, State Use Question 02, State Use Question 03, State Use Question 04, State Use Question 05, State Use Question 06, State Use Question 07, State Use Question 08, State Use Question 09, State Use Question 10, State Use Question 11, State Use Question 12, State Use Question 13, State Use Question 14, State Use Question 15                                                                                                                            | State Specific               |
| ELPA21                 | Test, Overall Proficiency Determination, Listening Domain Performance Level, Reading Domain Performance Level, Speaking Domain Performance Level, Writing Domain Performance Level, Listening Domain Scale Score, Reading Domain Scale Score, Speaking Domain Scale Score, Writing Domain Scale Score, Overall Scale Score, Comprehension Scale Score                                                                                                                              | English Language Proficiency |
| ELPA21                 | NDE Student ID, Administration Year, Enrolled Grade                                                                                                                                                                                                                                                                                                                                                                                                                                | Linking Variables            |
| Educator Certification | Certificate Type, Certificate Rank, Certificate Limitations, Public/Non-Public, Effective Date, Original Issue Date, Issue Date, Expiration Date, Endorsement Code, Endorsement Description, Grade(s), Endorsement Issue Date, Endorsement Expiration Date                                                                                                                                                                                                                         | Educator Workforce Pipeline  |
| Educator Certification | NDE Staff ID, First Name, Middle Name, Last Name, Previous First Name, Previous Middle Name, Previous Last Name, Birthdate, Certificate ID                                                                                                                                                                                                                                                                                                                                         | Linking Variables            |
| K12 ACT                | English, Math, Reading, Science, Composite                                                                                                                                                                                                                                                                                                                                                                                                                                         | Academic Readiness           |
| K12 ACT                | NDE Student ID, Test Date                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Linking Variables            |

| File Name                     | NSWERS Field Names(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Research Construct                              |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| K12 Attendance                | Days Present, Days Absent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Academic Engagement/<br>On-Track Indicator      |
| K12 Attendance                | County District Number, School Number, School Year Ending, NDE Student ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Linking Variables                               |
| K12 Career Education Programs | Career Education Programs Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Career Education Program Content                |
| K12 Career Education Programs | Career Education Participation Info Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Depth of Career Education Program Participation |
| K12 Career Education Programs | County District Number, School Number, School Year Ending, NDE Student ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Linking Variables                               |
| K12 College Board             | Psat 8 9 Test Dt, Psat 8 9 Total, Psat 8 9 Erw, Psat 8 9 Math, Psat 8 9 Test Score Reading, Psat 8 9 Test Score Writing, Psat 8 9 Test Score Math, Psat 8 9 Subscore Evidence, Psat 8 9 Subscore Context, Psat 8 9 Subscore Expressideas, Psat 8 9 Subscore Conventions, Psat 8 9 Subscore Algebra, Psat 8 9 Subscore Problemsolving, Psat 8 9 Cross Test Score History Socialstudies, Psat 8 9 Cross Test Score Science, Psat Nmsqt Test Dt, Psat Nmsqt Total, Psat Nmsqt Erw, Psat Nmsqt Math, Psat Nmsqt Test Score Reading, Psat Nmsqt Test Score Writing, Psat Nmsqt Test Score Math, Psat Nmsqt Subscore Evidence, Psat Nmsqt Subscore Context, Psat Nmsqt Subscore Expressideas, Psat Nmsqt Subscore Conventions, Psat Nmsqt Subscore Algebra, Psat Nmsqt Subscore Problemsolving, Psat Nmsqt Subscore Advancedmath, Psat Nmsqt Cross Test Score History Socialstudies, Psat Nmsqt Cross Test Score Science, Psat 10 Test Dt, Psat 10 Total, Psat 10 Erw, Psat 10 Math, Psat 10 Test Score Reading, Psat 10 Test Score Writing, Psat 10 Test Score Math, Psat 10 Subscore Evidence, Psat 10 Subscore Context, Psat 10 Subscore Expressideas, Psat 10 Subscore Conventions, Psat 10 Subscore Algebra, Psat 10 Subscore Problemsolving, Psat 10 Subscore Advancedmath, Psat 10 Cross Test Score History Socialstudies, Psat 10 Cross Test Score Science, Sat Asmt Dt Mr, Sat Total Score Mr, Sat Erw Score Mr, Sat Math Score Mr, Sat Essay Reading Mr, | Academic Readiness                              |

| File Name                   | NSWERS Field Names(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Research Construct           |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| K12 College Board continued | Sat Essay Analysis Mr, Sat Essay Writing Mr, Sat Test Score Reading Mr, Sat Test Score Writing Mr, Sat Test Score Math Mr, Sat Subscore Evidence Mr, Sat Subscore Context Mr, Sat Subscore Expressideas Mr, Sat Subscore Conventions Mr, Sat Subscore Algebra Mr, Sat Subscore Problemsolving Mr, Sat Subscore Advancedmath Mr, Sat Cross Test Score History Socialstudies Mr, Sat Cross Test Score Science Mr, Sat Asmt Dt Hc, Sat Total Score Hc, Sat Erw Score Hc, Sat Math Score Hc, Sat Essay Reading Hc, Sat Essay Analysis Hc, Sat Essay Writing Hc, Sat Test Score Reading Hc, Sat Test Score Writing Hc, Sat Test Score Math Hc, Sat Subscore Evidence Hc, Sat Subscore Context Hc, Sat Subscore Expressideas Hc, Sat Subscore Conventions Hc, Sat Subscore Algebra Hc, Sat Subscore Problemsolving Hc, Sat Subscore Advancedmath Hc, Sat Cross Test Score History Socialstudies Hc, Sat Cross Test Score Science Hc, Arthisgr, Arthisyr, Artstdgr, Artstdyr, Artst2gr, Artst2yr, Art3dgr, Art3dyr, Biolgr, Biolyr, Calcabgr, Calcabyr, Calcbcgr, Calcbcyr, Chemgr, Chemyr, Chinesgr, Chinesyr, Comscagr, Comscayr, Econmagr, Econmayr, Econmigr, Econmiyr, Englangr, Englanyr, Engligr, Englityr, Envscigr, Envsciyr, Eurhisgr, Eurhisyr, Frnlangr, Frnlanyr, Gerlagr, Gerlayr, Govcomgr, Govcomyr, Govusgr, Govusyr, Humgeogr, Humgeoyr, Italgr, Italyr, Japangr, Japanyr, Latinvgr, Latinvyr, Musictgr, Musictyr, Physmgr, Physmyr, Physemgr, Physemyr, Psychgr, Psychyr, Spanlagr, Spanlayr, Spanltgr, Spanltyr, Statgr, Statyr, Ushistgr, Ushistyr, Wdhistgr, Wdhistyr, Phys1gr, Phys1yr, Phys2gr, Phys2yr, Cpstnsgr, Cpstnsyr, Cpstnrgr, Cpstnryr, Comscpgr, Comscpyr | Academic Readiness continued |
| K12 College Board           | Best Language                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | English Language Proficiency |
| K12 College Board           | Ethnic Responses, Ethnic Derived                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ethnicity                    |
| K12 College Board           | NDE Student ID, Last Name, First Name, Middle Initial, Student Identifier, Student Address Line 1, Student Address Line 2, Student City, Student State, Student Zip Code, Gender, Date of Birth, Graduation Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Linking Variables            |

| <b>File Name</b>         | <b>NSWERS Field Names(s)</b>                                                                       | <b>Research Construct</b>                |
|--------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------|
| K12 College Board        | AI Code, Institution Name, Date Of This Report                                                     | Spatiotemporal Location                  |
| K12 Courses              | Dual Credit Code                                                                                   | Earned/Attempted Dual Credit             |
| K12 Courses              | Course Grade, Failed Course Flag                                                                   | K12 Academic Success/ On-Track Indicator |
| K12 Courses              | Semester, Local Course Code, Local Section Code, State Course Code, Course Delivery Model          | K12 Coursetaking Behavior                |
| K12 Courses              | County District Number, School Number, School Year Ending, NDE Staff ID, NDE Student ID            | Linking Variables                        |
| K12 Detailed Attendance  | Attendance Event Date, Attendance Event Category, Attendance Event Duration                        | Academic Engagement                      |
| K12 Detailed Attendance  | NDE Student ID, School Year Ending                                                                 | Linking Variables                        |
| K12 Enrollment           | Enrollment Date, Enrollment Code, Grade Level                                                      | High School Progression                  |
| K12 Enrollment           | County District Number, School Number, School Year Ending, NDE Student ID                          | Linking Variables                        |
| K12 Enrollment           | Residence Status                                                                                   | Spatiotemporal Location                  |
| K12 Staff Assignments    | County District Number, School Number, NDE Staff ID, Controlling District Code, School Year Ending | Linking Variables                        |
| K12 Staff Assignments    | Full-Time Equivalency                                                                              | Staff Assignment Allocation              |
| K12 Staff Assignments    | Experience At This District                                                                        | Staff District Experience                |
| K12 Staff Assignments    | Assignment Date, Completion Date                                                                   | Staff Spatiotemporal Location            |
| K12 Staff Demographics   | NDE Staff ID, Local Staff ID, Gender, School Year Ending                                           | Linking Variables                        |
| K12 Staff Demographics   | Educational Attainment Code                                                                        | Staff Education Level                    |
| K12 Staff Demographics   | Hispanic Indicator                                                                                 | Staff Hispanic Ethnicity                 |
| K12 Staff Demographics   | Primary Subject Area                                                                               | Staff Primary Subject Area               |
| K12 Staff Demographics   | Race 1 Code, Race 2 Code, Race 3 Code, Race 4 Code, Race 5 Code                                    | Staff Race                               |
| K12 Staff Demographics   | Total Experience                                                                                   | Staff Total Experience                   |
| K12 Statewide Assessment | Assessment Score, Proficiency Level                                                                | Academic Readiness/ On-Track Indicator   |

| <b>File Name</b>         | <b>NSWERS Field Names(s)</b>                                                                                                                                                                                                                         | <b>Research Construct</b>               |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| K12 Statewide Assessment | County District Number, School Number, School Year Ending, NDE Student ID                                                                                                                                                                            | Linking Variables                       |
| K12 Statewide Assessment | Assessment Target Grade Level, Assessment Name, Subject Name, Reason Not Tested                                                                                                                                                                      | Multi-Level/Cluster/ Grouping Variables |
| K12 Statewide Assessment | Assessment Date                                                                                                                                                                                                                                      | Natural Experiment Indicator            |
| K12 Student              | EL Eligibility, EL Participation, EL Duration, Redesignated as English Fluent, Home Language Code                                                                                                                                                    | English Language Proficiency            |
| K12 Student              | Foreign Exchange Student                                                                                                                                                                                                                             | Foreign Exchange Status                 |
| K12 Student              | Gender                                                                                                                                                                                                                                               | Gender                                  |
| K12 Student              | High Ability Learner Eligibility, High Ability Learner Participant                                                                                                                                                                                   | Gifted and Talented Status              |
| K12 Student              | Hispanic Indicator                                                                                                                                                                                                                                   | Hispanic Ethnicity                      |
| K12 Student              | NDE Student ID, SSN, First Name, Middle Name, Last Name, Generation Code, First Name Alias, Middle Name Alias, Last Name Alias, Generation Code Alias, Birthdate, Grade Level                                                                        | Linking Variables                       |
| K12 Student              | Military Family Code                                                                                                                                                                                                                                 | Military Family Status                  |
| K12 Student              | Expected Graduation Year                                                                                                                                                                                                                             | On-Time High School Graduation          |
| K12 Student              | Attended Preschool                                                                                                                                                                                                                                   | Preschool Attendance                    |
| K12 Student              | Race 1 Code, Race 2 Code, Race 3 Code, Race 4 Code, Race 5 Code                                                                                                                                                                                      | Race                                    |
| K12 Student              | District of Residence, School of Residence                                                                                                                                                                                                           | Residence Status                        |
| K12 Student              | Single Parent, Homeless Youth Indicator, Highly Mobile Indicator                                                                                                                                                                                     | Risk Factors                            |
| K12 Student              | Full-Time Equivalency                                                                                                                                                                                                                                | School Assignment Allocation            |
| K12 Student              | County District Number, School Number, School Year, Student Address: Street Number Name, Student Address: Apartment Room Suite Number, Student Address: City, Student Address: State Abbreviation, Student Address: Postal Code, Immigrant Indicator | Spatiotemporal Location                 |
| K12 Student              | SPED Participation                                                                                                                                                                                                                                   | Special Education Participation         |



APPENDIX C:  
COMPLETED  
RESEARCH  
QUESTIONS



While it is not possible to enumerate a strict list of research questions that NSWERS will investigate via allowable data uses described within this report, the following are a list of questions that have been addressed within NSWERS public data products, hosted on the insights platform.

## **2025 Dual Enrollment Report**

- How many Nebraska students take one or more dual enrollment courses?
- What percent of Nebraska students earn dual enrollment credit?
- Through what colleges do Nebraska students access dual enrollment courses?
- Where do students within each high school cohort participate in dual enrollment?
- How does dual enrollment participation differ geographically?
- From which districts and schools do Nebraska students access dual enrollment?
- Which districts have the highest dual enrollment student participation?
- In which grades do Nebraska students take dual enrollment courses?
- How many dual enrollment credits do Nebraska students earn?
- What dual enrollment courses and subjects do Nebraska students take?
- How do Nebraska dual enrollment students perform academically in high school? (High School GPA)
- How do Nebraska dual enrollment students perform academically in college? (Postsecondary GPA)
- How many Career and Technical Education (CTE) dual enrollment courses are offered to Nebraska students?
- What are the top CTE subjects that dual enrollment students take?
- What are the demographic characteristics of dual enrollment students in Nebraska? (Race/Ethnicity and Gender)
- Do Nebraska public high school students graduate within four years of starting high school?
- Do high school graduates enroll in college within 16 months of their high school graduation?
- Do Nebraska two-year college students re-enroll for the fall term one year following their college start date?
- Do Nebraska four-year college students re-enroll for the fall term one year following their college start date?

- Do out-of-state four-year college students re-enroll for the fall term one year following their college start date?
- Do students earn a postsecondary certificate or degree after high school graduation?
- Do college students at Nebraska two-year postsecondary institutions earn a certificate or degree within six years of high school graduation?
- Do college students at Nebraska four-year postsecondary institutions earn a certificate or degree within six years of high school graduation?
- Do college students at out-of-state four-year postsecondary institutions earn a certificate or degree within six years of high school graduation?

## **Early Reading Brief**

- How does third grade reading proficiency relate to later high school graduation rates?
- How does third grade reading proficiency relate to later college-going rates?
- How do differences in third grade reading scores (even within proficiency categories) impact high school graduation and college enrollment?
- How stable is reading proficiency from third grade to seventh grade?
- Does improving reading proficiency by seventh grade improve chances of high school graduation and college enrollment?
- Is consistent high reading proficiency (both third and seventh grade) associated with better postsecondary outcomes than temporary or partial proficiency?

## Timely Employment Brief

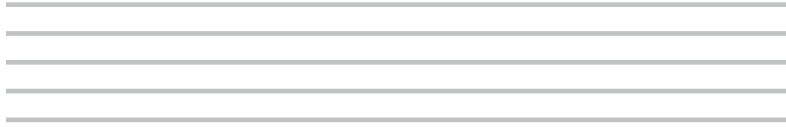
- How does college graduation affect the likelihood of timely employment?
- How does the type of institution (two-year vs. four-year college) influence the likelihood of timely employment?
- How does a student's college major (career cluster) relate to timely employment rates?
- What is the difference in timely employment rates between graduates and non-graduates within each career cluster?
- How does work experience (earnings during college) relate to the likelihood of achieving timely employment after college?
- How do earnings trajectories after college differ between those who achieved timely employment and those who did not?
- What is the long-term earnings premium associated with securing timely employment shortly after college exit?

## Employment Gap Brief

- What are the high-demand occupations (H3 occupations) in Nebraska with significant annual job openings?
- For high-demand occupations, how does the in-state workforce supply (graduates) compare to the projected annual workforce demand?
- Which occupations in Nebraska have the highest rates of unmet workforce demand?
- How much of the demand for each occupation is driven by economic growth versus replacement needs?
- What proportion of the workforce supply for these occupations comes from public versus private postsecondary institutions?
- What are the program completion rates for students in Nebraska public colleges in fields aligned with high-demand occupations?
- How likely are Nebraska public college graduates to remain working in Nebraska across different degree fields?
- How do the median annual earnings of Nebraska public college graduates compare across high-demand occupations?
- Are Nebraska graduates earning wages comparable to national averages in their respective high-demand fields?

## Talent Retention Brief

- How does a student's origin (in-state vs. out-of-state) affect their likelihood of staying and working in Nebraska after college graduation?
- How does prior work experience in Nebraska during college influence talent retention rates after graduation?
- What are the earnings thresholds during college associated with a 50% probability of talent retention for in-state and out-of-state students?
- How does talent retention vary by college major or degree field?
- How does talent retention differ between graduates from two-year and four-year colleges?
- Can targeted interventions (such as internships or work opportunities) for out-of-state students substantially improve talent retention?
- Which degree fields show the highest and lowest rates of talent retention, and how does student origin influence these outcomes?
- How do varying levels of work experience during college affect the number of additional graduates needed to retain 100 college-educated workers in Nebraska?



# APPENDIX D: GLOSSARY



## **ACADEMIC READINESS**

A research construct approximating a student's preparation for further education, often derived from coursework, grades, and assessments.

## **AGGREGATE DATA**

Data that have been combined from individual-level records into summary statistics that have reduced exposure risk.

## **ANNUAL REVIEW PROCESS**

The structured yearly update cycle for revisiting and refining the NSWERS Information and Research Agenda.

## **COHORT**

A group of individuals defined by shared characteristics at a starting point, such as entering high school or beginning postsecondary enrollment. See also: Population.

## **COHORT-OUTCOME MODEL**

A standardized analytic approach linking a defined population (cohort) to a specific outcome (e.g., graduation, employment).

## **CONSTRUCT**

A proxy variable or derived measure inferred from available fields in NSWERS datasets to represent concepts of interest (e.g., "Academic Engagement").

## **CROSS-SYSTEM TOPIC**

A research area that spans multiple education and/or workforce sectors, requiring linked data across systems.

## **DATA REQUEST**

An external request for aggregate or individual record data, processed according to NSWERS' legal and governance standards.

## **DATA USE FRAMEWORK**

The structure defining allowable, disallowed, and conditioned use cases for NSWERS data under applicable laws and agreements.

## **EVALUATION REQUEST**

A request to conduct a formal program impact evaluation using NSWERS data to study the effectiveness of specific interventions, policies, or programs.

## **FERPA EVALUATION EXCEPTION**

A provision of the Family Educational Rights and Privacy Act allowing data disclosure to conduct studies evaluating education programs without requiring individual consent.

## **FORECASTING**

The process of projecting future outcome rates or counts based on historical data trends, typically over a 3–5 year horizon.

## **INSIGHTS**

NSWERS' publicly accessible platform providing dashboards, briefs, special reports, and other public-facing data products.

## **INSIGHTS+**

NSWERS' secure internal platform offering authorized partners access to standardized and interactive analytic tools, cohort dashboards, and custom research outputs.

## **OUTCOME**

A measurable achievement or event of interest, such as high school graduation, college enrollment, or employment placement.

## **POPULATION**

A defined group of individuals who meet specific inclusion criteria for a given analysis. In NSWERS analyses, populations are typically established based on enrollment, graduation, employment, or demographic characteristics at a given point in time. Each population serves as the denominator against which outcomes (e.g., graduation, persistence, employment) are measured. See also: Cohort

## **PREDICTIVE MODELING**

The use of statistical or machine learning techniques to estimate the probability that an individual will achieve a particular outcome based on available predictors.

## **PROXY VARIABLE**

A data element used to approximate an underlying concept that is difficult to measure directly (e.g., using free/reduced lunch status as a proxy for socioeconomic disadvantage).

## **ROLE-RESTRICTED TOOLS**

Tools in insights+ that are accessible only to users assigned appropriate permissions based on their institutional role.

## **SIMULATION**

The modeling of hypothetical interventions to estimate how changes in conditions would alter future outcome rates.

## **SPECIAL TOPICS**

Standalone research questions that are themselves not NSWERS core outcomes but are related to core outcomes and are aligned with broader education and workforce priorities.

## **STAGE OF ANALYSIS**

One of the six progressive steps — Explore, Describe, Explain, Predict, Forecast, Simulate — applied to each analysis of a cohort-outcome pair.

## **STRATEGIC DATA DEPENDENCIES**

Data elements identified as potentially necessary NSWERS' to provide research and evaluation on an expanded topic set.

## **SUPPRESSION**

The practice of withholding small cell counts in reporting to protect the confidentiality of individual records.

## **TALENT RETENTION**

The rate at which graduates of Nebraska institutions stay and work in Nebraska after completing their education.





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