



The Nebraska Teacher Retention Survey Pilot Study: Context, Implementation, and a Survey Timing Experiment

2025 NDE Data Conference

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Evaluation



National Teacher Shortage Context

- Conservative estimates: At least **39,700** vacant teaching positions and over **288,000** positions filled by underqualified teachers (Nguyen, Lam, & Bruno, 2024)
 - Deploying National Guard members as classroom instructors
- Particularly pronounced in **STEM, special education, early childhood education, and rural schools** (Matulka, 2024; Macy et al., 2024; Aldeman, 2024)
- **Rural** schools and **high-poverty** districts are the most impacted, with higher turnover rates and greater difficulty recruiting certified teachers (Engle, Xia, & Butler, 2024; Hanushek, 2024)
 - High-poverty schools accounting for 25% of all public schools but over 50% of teacher attrition (Hanushek, 2024)

30% may leave within 3 years

Horace Mann (2024)

55% may leave earlier than planned

NEA (2024)



Nebraska-Specific Context

- 2024-25 Nebraska Teacher Vacancy Report Summary
 - **Special Education** faces the most severe shortage
 - **Rural** districts are struggling the most
- The shortage of **STEM** teachers in Nebraska is a persistent crisis, forcing school districts to rely on underqualified or substitute teachers (Matulka, 2024)
 - STEM teacher attrition outpaces new teacher supply
 - The teacher pipeline issue is more about retention than recruitment

669

Positions Unfilled

201

Completely Vacant

0

Applicants

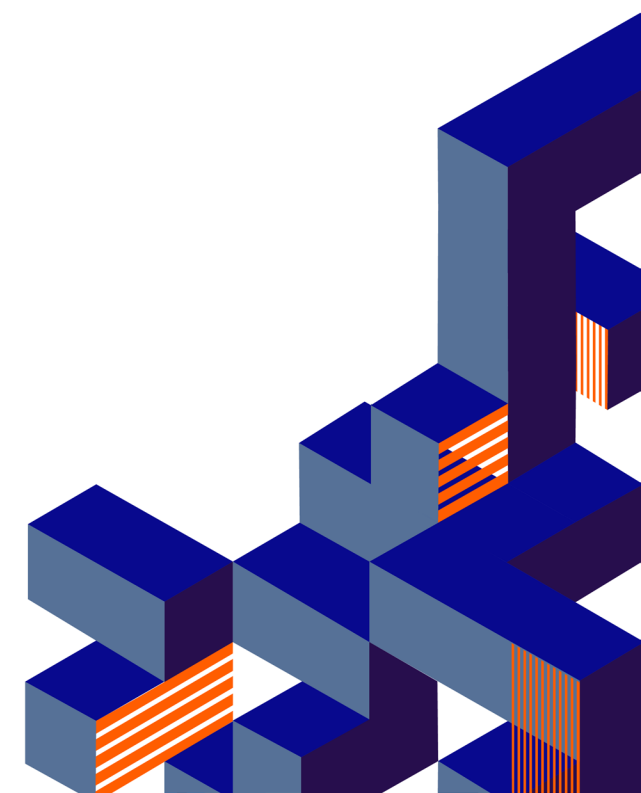
63% of Unfilled Positions

150

Special Ed - Unfilled

51

Special Ed – Completely Vacant





Reasons for Teacher Attrition & Burnout

Low salaries & lack of financial incentives

1 in 3 teachers believes their salary is adequate
An average desired increase of \$16,000

High workload & administrative burden

Excessive paperwork, large class sizes, and unrealistic job expectations

Lack of support & poor leadership

Weak administrative support, poor working conditions, and lack of mentorship

Student behavioral challenges & discipline issues

Increased behavioral issues contribute to teacher stress and dissatisfaction

Emotional exhaustion & burnout

Avg. U.S. teacher works 54 hours per week





Impact of Teacher Shortages on Students

- **Lower Student Achievement & Increased Dropout Rates**

- Students in high-shortage schools, particularly in math, science, and special education, face greater academic struggles due to frequent turnover and uncertified instructors (Nguyen et al., 2024; Hanushek, 2024)

- **Reduced Course Offerings & Larger Class Sizes**

- Many districts have eliminated advanced STEM courses, while others have increased teacher workloads, worsening burnout (Matulka, 2024; Hanushek, 2024)

- **Disproportionate impact on rural and high-poverty schools**

- Teacher shortages widen educational inequities, as disadvantaged students are more likely to be taught by inexperienced or uncertified teachers (Nguyen et al., 2024; Aldeman, 2024)

- **Long-Term Economic Impact**

- Hanushek (2024) estimates learning loss could reduce global GDP by \$31 trillion - six times the impact of the 2008 recession



Purpose of the Pilot Study

- This survey aims to support policies that strengthen Nebraska's teacher workforce by:
 - Identifying factors that encourage educators to remain in their roles
 - Understanding key challenges that lead to teacher turnover
 - Informing strategies to boost job satisfaction and improve retention
- The first stage of this process is a **small-scale pilot study**
 - Refine the survey instrument (question wording, response scales, probing and asking additional questions)
 - Ensure validity before statewide administration
 - Inform adjustments to sampling plan





Sampling Strategy: Population & Data Sources



- Public school
 - NDE Directory Search
 - Data files provided by Data Collection Director
 - Total population: 28,683 public school teachers
- Non-public school
 - NDE Directory Search
 - National Center for Education Statistics (NCES) | IES
 - School websites
 - Total population: 3,116 non-public school teachers

Sampling Strategy: Stratification and Justification



- Locale - City, town, rural
- Grade level - Pre-K, elementary, middle, high, secondary school + other grade levels (non-public only)
- Why these strata - **Locale × Grade level**
 - Educational Environment Differences
 - Urban, town, and rural schools face distinct challenges in teacher attrition, resources, and demographics
 - Job demands vary by grade level, influencing career decisions
 - Ensuring Representation
 - Teacher distribution is uneven across locales and grades
 - Stratification prevents smaller subgroups (e.g., rural Pre-K teachers) from being overlooked
 - Research-Based Rationale
 - Studies show attrition trends differ by location and grade level
 - Rural schools face retention issues; secondary teachers may have different mobility patterns

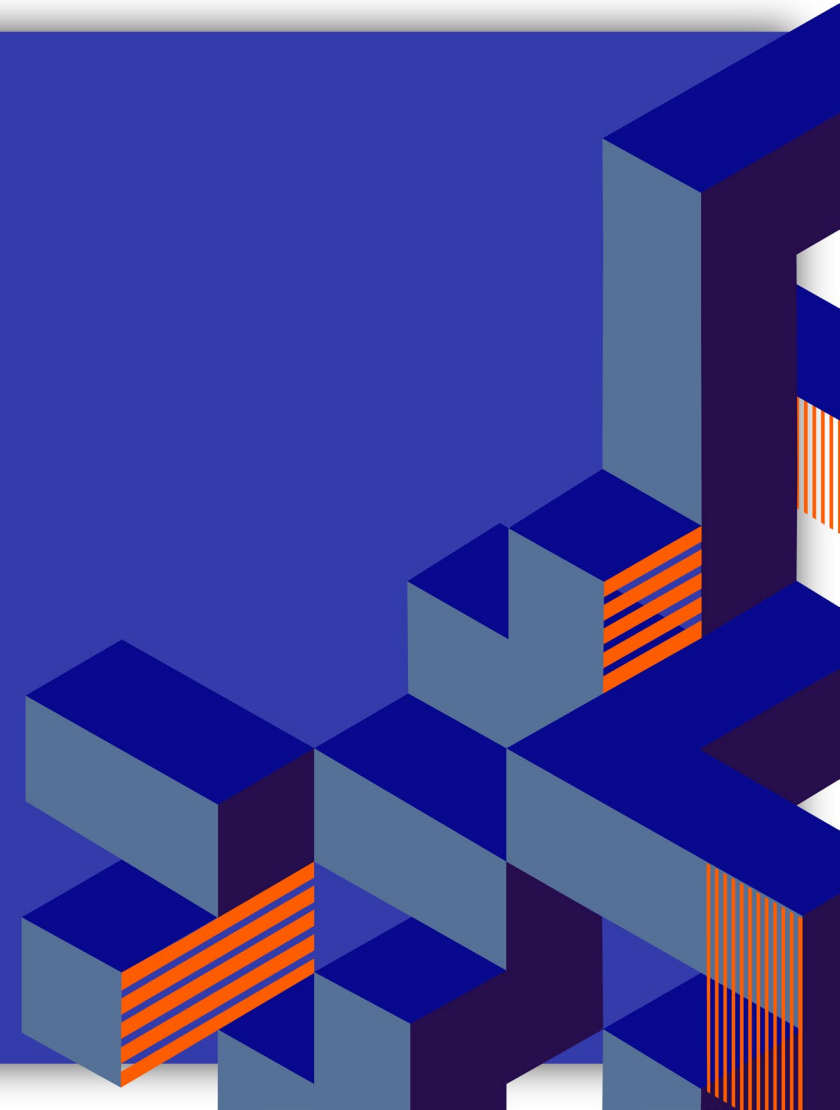
Sample Allocation & Randomization Approach



- Determining sample size
 - Assuming 50% response rate and a 3% margin of error (95% CI)
 - Proportional allocation: **Sample size per group = (Population proportion) × (Total sample target)**
 - Oversampling and manual adjustment
 - Smaller subgroups (e.g., Pre-K teachers in rural areas) were oversampled to ensure statistical power
 - Adjustments were made to maintain a balanced sample across categories
- Random selection
 - Within each group, individuals were randomly selected from the population to prevent selection bias while ensuring balanced presentation

Survey Development

- Developed by the Data, Research, & Evaluation team
- Refined through multiple rounds of review and feedback in collaboration with, but not limited to:
 - Data Management & Application
 - Office of Policy & Strategic Initiatives
 - Data Collection
 - School Transformation
 - Information, Data, & Technology Information Systems
- Given the sensitive nature of teacher attrition, survey items were thoughtfully worded to avoid unintended negativity






Overview of Survey Content and Structure

Demographic questions (8 items)

- Total years teaching
- Years teaching at current school
- SES status of student body
- Grade level(s) currently teaching
- Subject(s) currently teaching
- Gender
- Ethnicity
- Race

Substantive questions (71 items)

- Retention & motivation drivers (25)
 - School leadership (12)
 - Student engagement (12)
 - Coworker dynamics in the work environment (6)
 - Parental involvement and community support (7)
 - Career satisfaction (7)
 - Open-ended feedback (2)
- 

Project Timeline

Phase	Timeline
Pilot Data Collection	Jan 13 th – March 3 rd , 2025
Initial Data Analysis	March – April, 2025
Preliminary Results Shared	April 9 th , 2025
Survey & Project Refinement	May – August, 2025
Statewide Launch	Fall 2025

Pilot: Email Distribution Time



- A secondary goal of this research is to *understand the impact of survey distribution timing (days & times)* among the sample
- This will help us understand the optimal times to send the email for the full data collection later in the Fall
- Teachers were randomly assigned to groups
 - Each group received identical surveys and instructions but were sent the email at varying days and times
 - All other variables, including all survey questions, email content, subject, and format, were held constant
 - Conducted January – March, 2025
 - Participants completed a 10-minute survey via Qualtrics



Pilot: Email Distribution Time Results

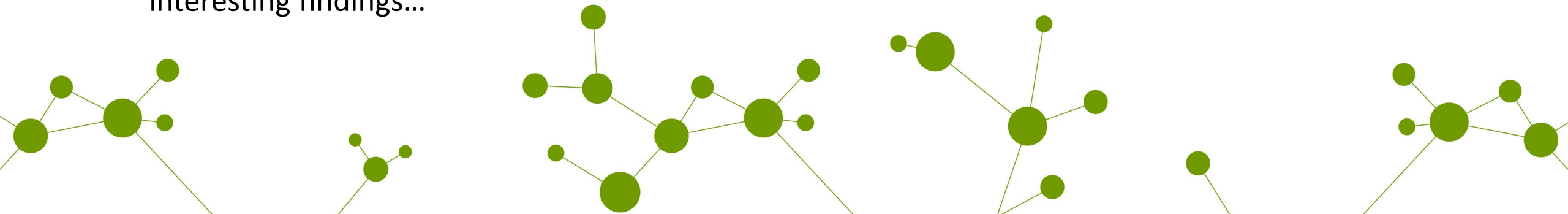
Group	Total sample size	Number of Survey Responses	Response Rate
Group A (Monday 9:30am)	622	221	35.5%
Group B (Monday 2:30pm)	610	243	39.8%
Group C (Tuesday 9:30am)	622	197	31.7%
Group D (Tuesday 2:30pm)	582	203	34.9%
Group E (Wednesday 9:30am)	612	173	28.3%
Group F (Wednesday 2:30pm)	589	182	30.9%
Total	3637	1219	33.5%

Key Findings:

- **Highest Response Rate:** Monday afternoon had the highest response rate, with nearly 40% of surveys submitted, which aligns with prior research
- **Survey Completion:** Surveys sent out on Mondays were more likely to be completed in one sitting
- **Declining Response Rates:** Engagement decreased after Monday, suggesting diminishing returns later in the week

Pilot Results

- The primary purpose of initial analyses is to inform the full data collection:
 - Survey Factor Structure
 - Evaluating the interrelatedness of survey questions
 - Identifying latent constructs
 - Verifying the survey captures the intended dimensions of teacher experiences and motivation
 - Survey Methodology
 - Question wording (clarity and precision)
 - Response scale appropriateness
 - Overall survey clarity and user experience
 - Qualitative Insights
 - Probing emergent themes
 - Identifying areas requiring additional exploratory research
- But, we realize why a lot of you are here, so we do want to share some preliminary results and interesting findings...





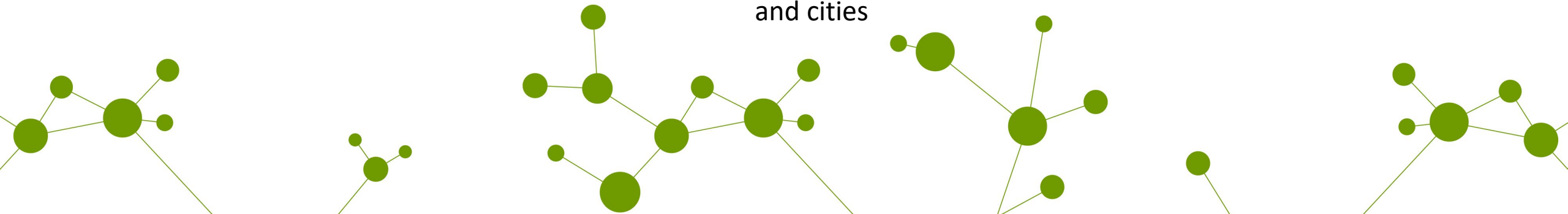
Preliminary Findings

Leadership and Job Satisfaction

- **School Leadership:** Teachers who strongly agree that school leaders are effective are significantly more likely to be strongly satisfied with their jobs and were significantly less likely to consider leaving the profession
- **Sense of Fulfillment:** Teachers who strongly agree they have a sense of fulfillment at their school are significantly less likely to consider leaving education

Compensation and Retention

- **Salary Perception:** Teachers who agree they live comfortably or feel fairly paid are significantly less likely to consider leaving the field
- There were no statistically significant differences in **salary satisfaction between public and non-public** teachers
- **Fair Pay:** Teachers who did not think they are fairly paid were 41% more likely to consider leaving than those who felt fairly paid ($\text{Exp(B)} = 0.59$, $p < .001$)
- **Salary satisfaction:** Teachers satisfied with salary and benefits are 19.5% less likely to consider leaving ($\text{Exp(B)} = 0.805$, $p < .001$)
- **Salary satisfaction** most strongly influences teacher retention in rural schools, with slightly less impact in towns and cities



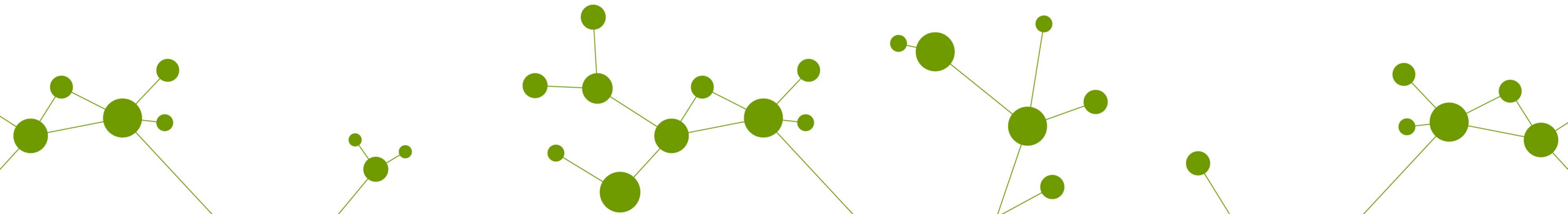
Preliminary Findings Cont.

Early Career Challenges

- Teachers with **3 to 5 years of experience** were 2.24 times more likely to consider leaving than those with over 20 years of experience ($\text{Exp}(B) = 2.24$, $p = 0.003$)
- Teachers with **6 to 10 years of experience** were 1.71 times more likely to consider leaving than those with over 20 years of experience ($\text{Exp}(B) = 1.71$, $p = .007$)

Additional Insights

- **Degree Levels:** No significant differences were found across degree levels in terms of teacher retention
- **School location** (urban, town, or rural) did not significantly impact attrition risk
- **Workload Impact:** Teachers responsible for multiple grade levels showed an increased likelihood of attrition ($\text{Exp}(B) = 2.97$, $p = .002$)



Analyses Plans

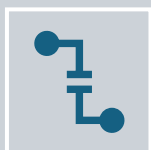
- Cross tabulations/breakdowns by demographics
 - Race/Ethnicity (Sample sizes are too small for Pilot)
 - Public vs. Private school
 - Teacher Experience Level
 - Teacher subject
 - Teacher grade level
- T-tests, ANOVA, & Chi-square tests to compare groups
- Factor analysis for understanding survey factor structure
- Multiple Regression/Logistic Regression to examine predictors of teacher retention/job satisfaction
- Cluster analysis to identify similar respondents
 - Groups respondents into 'clusters' of similar response patterns
- Text/qualitative analysis of open-ended questions
- Possibly interviews, focus groups to probe and get additional insight

Next Steps



Refine Survey

Review question wording and scales for clarity and consistency



Strengthen Distribution Strategy

New survey software

Address access barriers (e.g., firewalls, email filtering) to ensure all teachers receive the survey



Focus the Analysis Plan

Prioritize most policy-relevant and impactful analyses

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