



# Data Visualization Brand Guide

SPRING 2024

# Introduction

## What Is Data Visualization?

Data visualization (data viz) is representation. Visual displays of information communicate relationships and insights in a way that is easy to understand.<sup>1</sup> Because rigorous research and analysis is key to pushing the education sector forward, data-based insights drive our efforts to advance educational equity.

Data visualizations are powerful communication tools — but they can confuse as easily as they clarify. Data can be hard to interpret, and it's even harder to help audiences see the trends, patterns, and insights that we see. Made without care and attention, visualizations can distract or even mislead readers.

## What Is a Data Visualization Brand Guide?

Bellwether's Data Visualization Brand Guide is a resource for best practices when working with data viz in your everyday, internal, and client-facing work. To give others a clear depiction of our brand, we must deliver a cohesive look and feel across all channels.

This guide should be used alongside the *Bellwether Brand Guide*, which provides guidelines for our overall organizational brand, and the *Bellwether Style Guide*, a reference tool for writing at Bellwether. See the [Brand Identity Toolkit](#) for these guides and other brand resources.

# How to Use This Guide

## What This Guide Is

The design principles and best practices in this Data Visualization Brand Guide are *recommendations* for creating high-quality data viz that follow Bellwether brand standards. It is a reference for creating a uniform (and accurate) look and feel for data while eliminating the need to reinvent the wheel with design choices like formatting, text, and color.<sup>2</sup>

## What This Guide Is Not

This Data Visualization Brand Guide is not a manual or training guide on types of data viz, or how and when to employ certain types of visuals. As a PDF-based document, it is not a working template that can be used to create data viz.

**The recommendations in this guide are nonexhaustive** and may not always align with a specific work or project. Though this guide helps to deliver cohesive data viz across channels, teams should follow best practices within their business line, as well as for their clients and key audiences.

If there is misalignment with the best practices in this guide, teams should consult with their business line lead and reach out to the senior design and visual associate with questions or concerns.

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# Getting Started

## Planning

Before deciding on a data viz format, spend time planning how the information conveyed might affect key audience members. To more effectively tell the story, consider four key questions:<sup>3</sup>

1. **Who is the audience?** How will this be delivered to them? A figure for economists reading a research report might be different than one for school leaders reading a memo.
2. **What's the point?** What information do you want the audience to understand, and what insights do you want them to take away?
3. **What's the best type of visual?** Sketching a few options for data viz can uncover a graphic that is aligned with a project's key goals.
4. **How can data viz sharpen a key point or finding?** Look for opportunities to add action colors or remove distracting chart elements so the audience can focus on what is most important.

"Data represents lives. It is our job to take care with people, their lives [and] their data, and represent them accurately and clearly so that decisions that affect them are made with as much clarity as possible."<sup>4</sup>

—STEPHANIE EVERGREEN, FOUNDER, EVERGREEN DATA



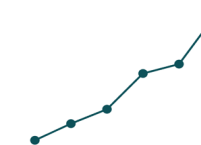
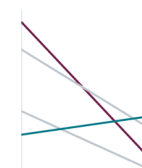
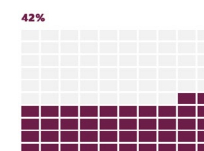
# Types of Data Visualization

At right are some of Bellwether's commonly used figures and data viz.

The guidance in this Data Visualization Brand Guide can be leveraged for any software platform – Microsoft, Google, R, Tableau, and more.

Excel templates for more than 20 brand-aligned charts are available in [SharePoint](#), which includes usage guidance. The templates are easy to update with fidelity to this guide. If you need to use them, **first download your own copy of the template.**

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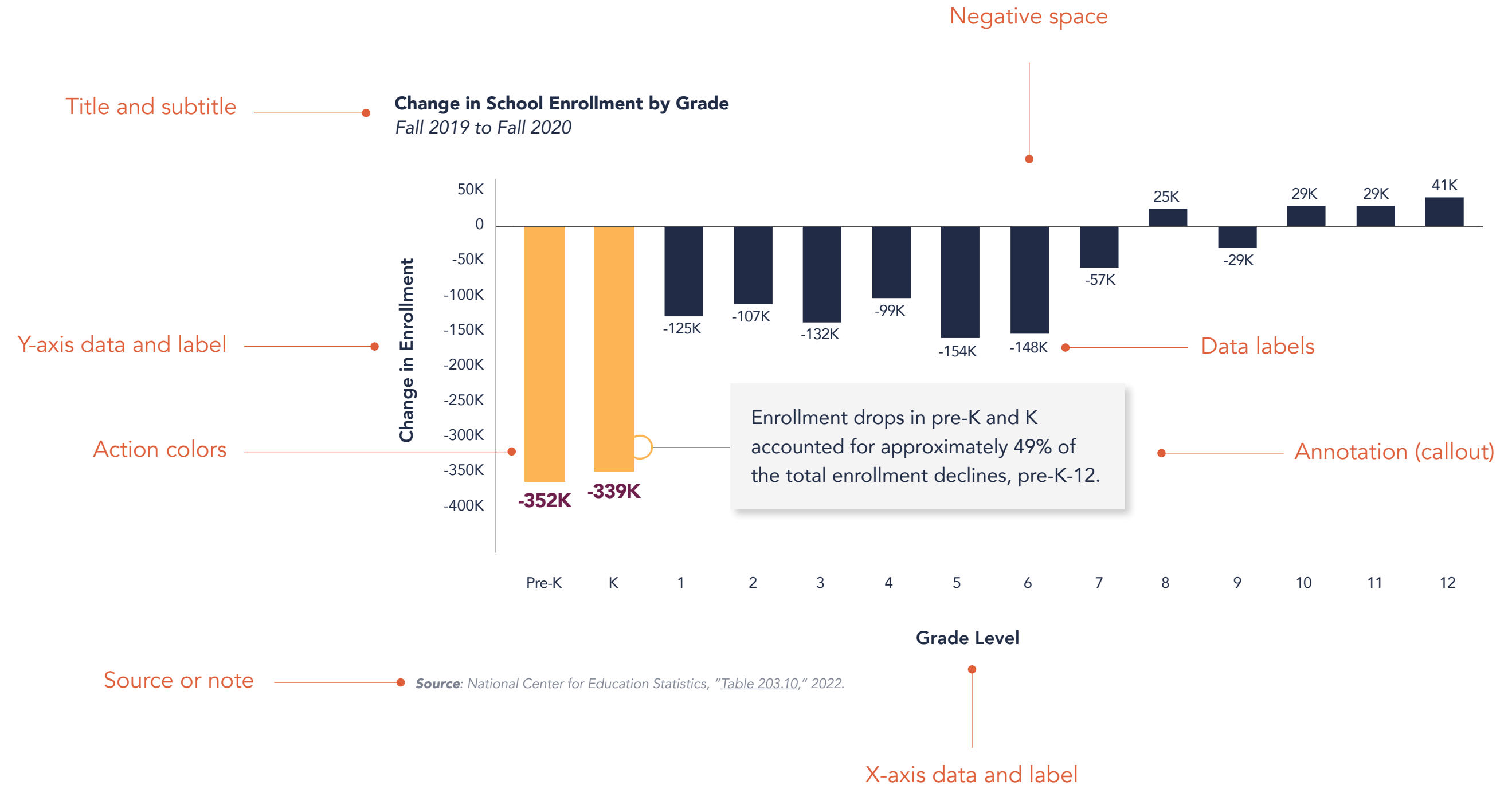
# Tips and Tricks

## Start Small

How data are portrayed impacts meaning. When creating a new chart or revising a current chart, start with these eight helpful tips:

1. Lead with a **headline** that captures the audience's attention. If needed, include a traditional chart title as the subtitle.
2. In English, we read from **left to right**. Place the headline in the upper-left corner. Never use vertical or diagonal text for a headline.
3. Use an **action color** to emphasize data connected to the insight.
4. Use **annotations** to call attention to additional information. For example, an annotation could include an explanation to aid the reader's interpretation or provide interesting context for the chart.
5. Use **order** intentionally. For example, place age ranges featured in a bar chart in sequential order. For a chart with frequencies, arrange the data series in ascending or descending order.
6. Clean up the visual by asking yourself which **lines** are necessary. Delete any that aren't, including axes lines, tick marks, and chart borders.
7. If it clutters more than it clarifies, skip the legend. Instead, **label** the data directly.
8. Give your data viz room to breathe. **Negative space**, or white space, reduces clutter and makes various elements and key points stand out.<sup>5</sup>

# Chart Elements







# Color Usage

**Bellwether's color palette offers a wide variety of colors, but it's important to exercise restraint when combining them.**

Too many colors or an unbalanced palette can feel frenetic, disharmonious, and unprofessional. Refer to the color usage guide at right for color palettes and order of use. This guide is a starting point for everyday, internal, and client-facing work. It is nonexhaustive and may not always be applicable for all projects.

For questions or assistance with Bellwether colors, reach out to the [senior design and visual associate](#).

1 Color



2 Colors



3 Colors



4 Colors



5 Colors



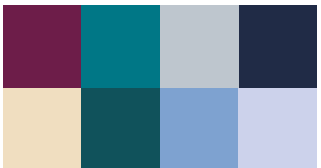
6 Colors



7 Colors



8 Colors



9 Colors



Callouts





# Primary Color Palette

<p>Bellwether Plum PMS 222 C C21 M100 Y7 K52 R109 G30 B74 HEX# 6D1E4A</p>	<p>Bellwether Teal PMS 7474 C C95 M6 Y30 K28 R0 G119 B134 HEX# 007786</p>	<p>Bellwether Deep Green PMS 7476 C C89 M25 Y38 K54 R13 G82 B90 HEX# 0D525A</p>	<p>Navy PMS 533 C C94 M73 Y5 K69 R33 G43 B70 HEX# 212B46</p>	<p>Gray PMS 431 C C63 M45 Y34 K25 R90 G102 B117 HEX# 5A6675</p>	<p>Cream PMS 7506 C C0 M7 Y26 K0 R240 G222 B193 HEX# F0DEC1</p>
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# Secondary Color Palette

Yellow  
PMS 135 C  
C0 M18 Y72 K0  
R255 G199 B98  
HEX# FFC762

Orange  
PMS 1365 C  
C0 M28 Y79 K0  
R255 G182 B83  
HEX# FFB653

Light Gray  
PMS 441 C  
C24 M12 Y14 K0  
R190 G198 B206  
HEX# BEC6CE

Deep Purple  
PMS 2695 C  
C89 M100 Y0 K58  
R46 G26 B74  
HEX# 2E1A4A

Soft Blue  
PMS 646 C  
C65 M34 Y2 K1  
R126 G162 B209  
HEX# 7EA2D1

Lavender  
PMS 2706 C  
C18 M11 Y0 K0  
R202 G211 B251  
HEX# CAD3FB

Sky  
PMS 629 C • C36 M0 Y5 K0  
R156 G212 B234 • HEX# 9CD4EA

Peach  
PMS 1625 C • C0 M41 Y39 K0  
R255 G164 B151 • HEX# FFA497



# Desaturated Color Palette

100%	75%	50%	25%
#6D1E4A	#8A4B6E	#B68FA5	#E2D2DB
#007786	#4DA0AA	#80BBC3	#CCE4E7
#0D525A	#56868C	#86A9AD	#CFDCDE
#212B46	#646B7E	#9095A3	#D3D5DA
#FFB653	#FFCC87	#FFDBA9	#FFF0DD



# Typography

We have two primary fonts for Bellwether’s brand. Together, they help our brand feel both rooted and forward looking.

**Avenir** is available in Adobe applications. For Microsoft applications, use **Avenir Next LT Pro**. For Google, use **Avenir** or **Inter**, though Avenir *does not* offer distinguished bolding options. Use at your discretion.

**Teodor** will require a license for use. **Garamond** is a free Microsoft and Google font. Use it as a default for displaying text if Teodor is unavailable.

## Avenir

Bb

- |                      |                             |
|----------------------|-----------------------------|
| Light                | Medium                      |
| <i>Light Oblique</i> | <i>Medium Oblique</i>       |
| Book                 | <b>Black</b>                |
| <i>Book Oblique</i>  | <b><i>Black Oblique</i></b> |

## Teodor

Bb

- |                       |                                 |
|-----------------------|---------------------------------|
| Light                 | <b>Bold</b>                     |
| <i>Light Italic</i>   | <b><i>Bold Italic</i></b>       |
| Regular               | <b>Extra Bold</b>               |
| <i>Regular Italic</i> | <b><i>Extra Bold Italic</i></b> |

# Beta by Bellwether

**Beta by Bellwether is a sub-brand — with design and data viz elements that differentiate it from Bellwether's brand.**

Use the Beta color palette as the default for Beta data viz. For presentation decks and field-facing releases, color palettes vary based on the ideas and data-specific needs of the Beta project, but they maintain a cohesive look and feel across digital and print.

For questions about Beta data viz or brand elements, reach out to the senior design and visual associate.





# Beta Color Palette

<i>Desaturated Beta colors are included at right of each color</i>																											
<b>Bellwether Teal</b> PMS 7474 C C95 M6 Y30 K28 R0 G119 B134 HEX# 007786			@ 80%	HEX# 33929E	<b>Light Blue</b> HEX# CCE4E8			<b>Navy</b> PMS 533 C C94 M73 Y5 K69 R33 G43 B70 HEX# 212B46			@ 80%	HEX# 4B556B	<b>Yellow</b> PMS 135 C C0 M18 Y72 K0 R255 G199 B98 HEX# FFC762			@ 80%	HEX# FFD281	<b>Gray</b> PMS 431 C C63 M45 Y34 K25 R90 G102 B117 HEX# 5A6675			@ 80%	HEX# 7B8591	<b>Lavender</b> PMS 2706 C C18 M11 Y0 K0 R202 G211 B251 HEX# CAD3FB			@ 80%	HEX# D5DCFC



# Visual Elements

This section covers the visual elements typically included in a Bellwether data viz. The guidelines help us better see the trends, patterns, and insights that we want our audience and decision-makers to see and act upon.

The guidance in this Data Visualization Brand Guide can be leveraged for any software platform – Microsoft, Google, R, Tableau, and more. This section is arranged around five categories that can make or break a data viz.

1. Text
2. Arrangement
3. Color
4. Lines
5. Details

These five categories are adapted from Stephanie Evergreen and Ann K. Emery's Data Visualization Checklist,<sup>6</sup> and codified for Bellwether's context and brand through colors, typography, and best practices in and out of the education sector. See the [Gallery](#) for data viz examples from Bellwether's field-facing releases and publications.

**This list is nonexhaustive.** If there is misalignment with the best practices in this guide, teams should consult with their business line lead and reach out to the [senior design and visual associate](#) with questions or concerns.



# Visual Elements: Text

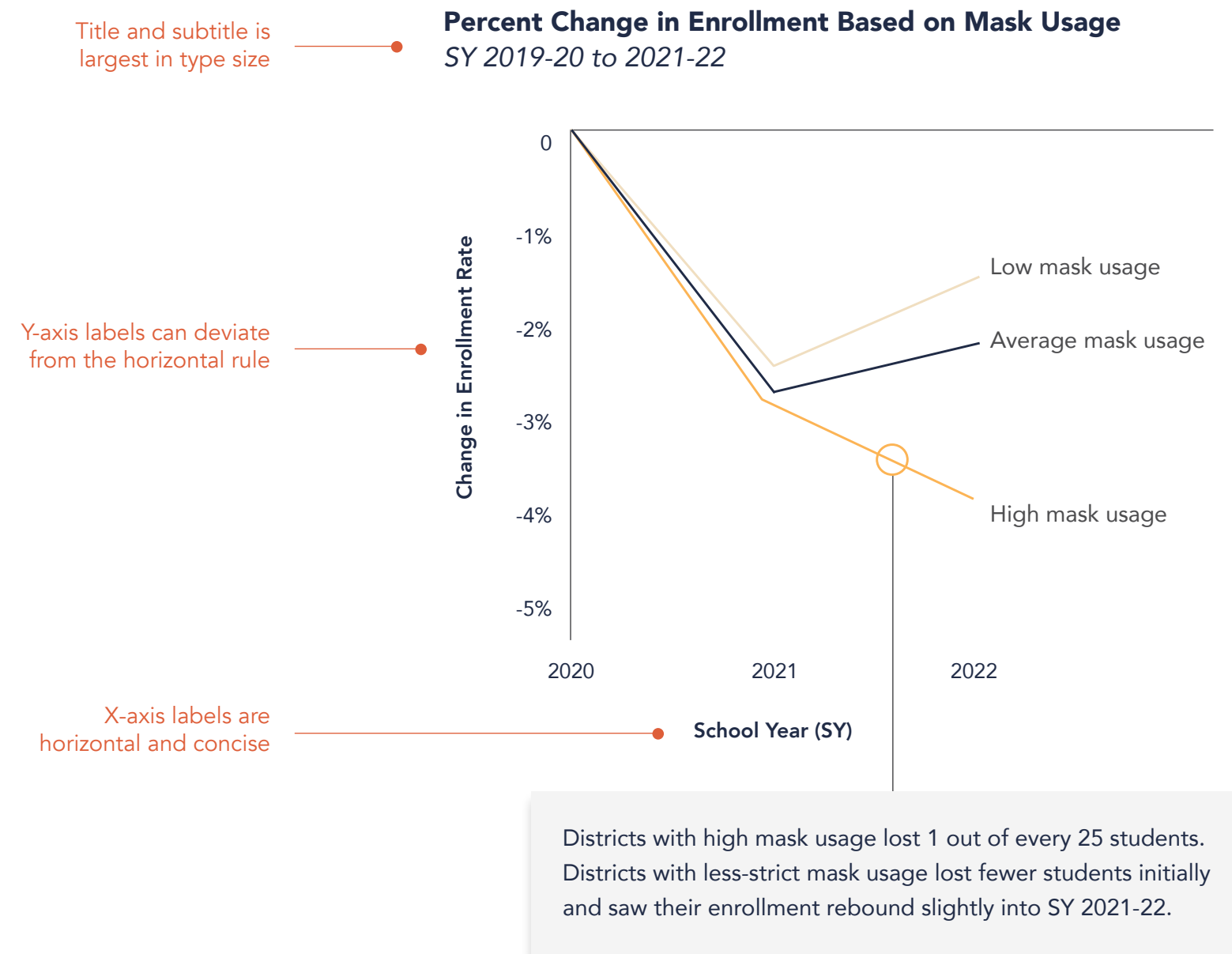
Text in your visualization should be clear and concise. When space is limited, text must encapsulate your message and pack a punch.

## Size and Orientation

- Text elements (e.g., titles and subtitles, annotations, data labels, axes labels, sources or notes) should be hierarchical by type size but still legible.
- Titles, subtitles, annotations, and data labels are horizontal (not vertical or diagonal). Y-axis labels can deviate from this rule.
- Consider switching graph orientation (e.g., from vertical to horizontal) to make text horizontal.

## Titles and Headlines

- Western cultures start reading in the upper left corner, so locate the title and subtitle there.
- If not using a traditional figure title, a brief headline with an insight will help readers comprehend the key takeaway when quickly skimming the figure.
- Rather than a generic phrase, use a descriptive sentence that encapsulates the figure's finding or "so what?"



# Visual Elements: Text

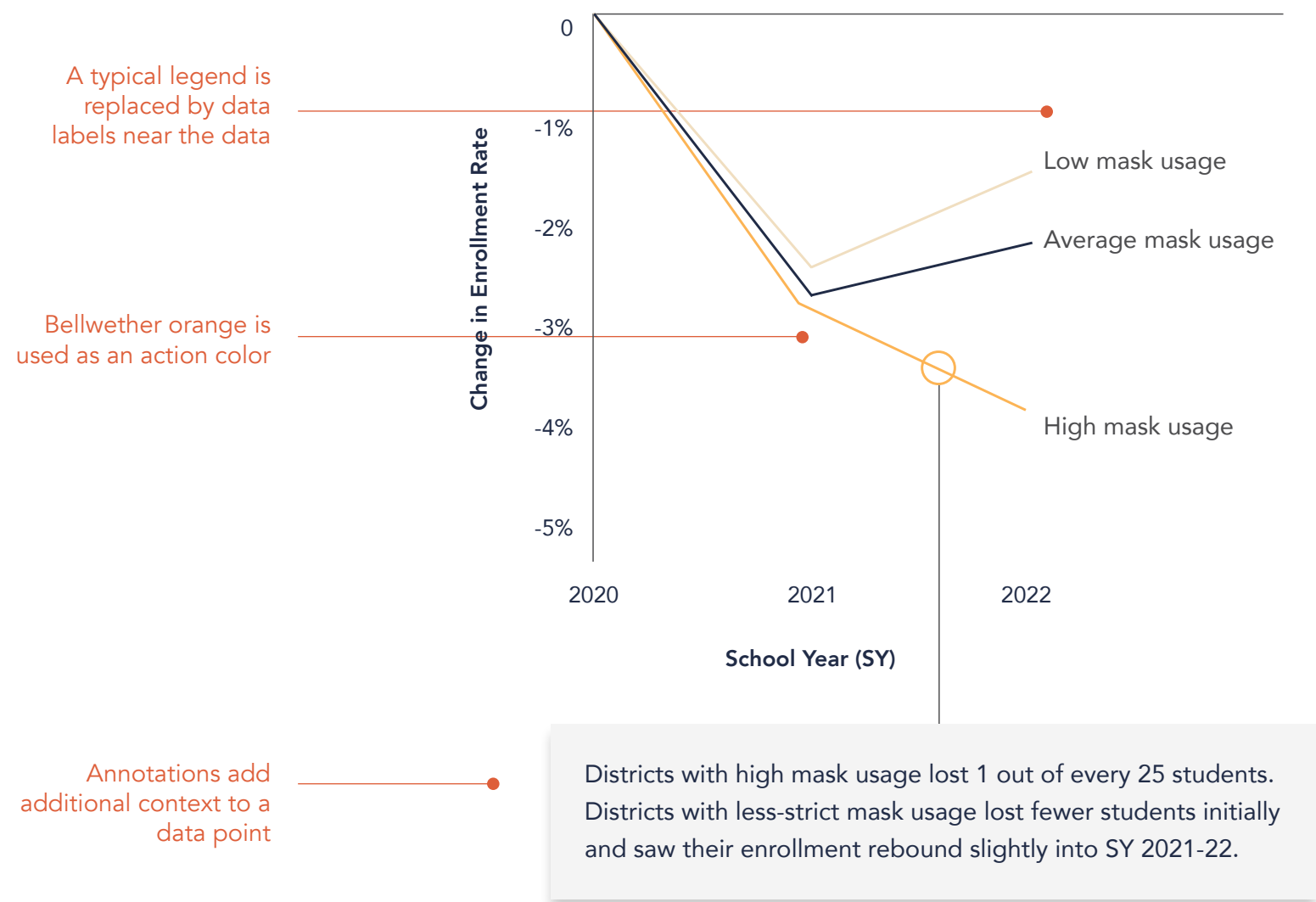
## Data Labels

- For clarity, x- and y-axes should always be labeled.
- Consider whether a legend should be embedded or eliminated. Eye movement back and forth between the legend and the data can interrupt the brain's attempts to interpret the graph.
- If applicable, position data labels near the data rather than in a separate legend (e.g., on top of or next to bars and next to lines).
- Labels are used sparingly. Focus attention by removing redundancy where possible.

## Annotations and Callouts

- Annotations provide additional information. Often styled as callouts near the data, annotations add explanatory and interpretive power to a visualization.
- Use annotations or callouts to answer questions that a viewer might have or to highlight specific data points.
- Use a neutral gray color, Bellwether yellow, or Bellwether orange to call attention to key data points.

**Percent Change in Enrollment Based on Mask Usage**  
SY 2019-20 to 2021-22



# Visual Elements: Arrangement

Improper arrangement of graph elements can confuse readers at best and mislead at worst. Thoughtful arrangement makes data viz easier for a viewer to interpret.

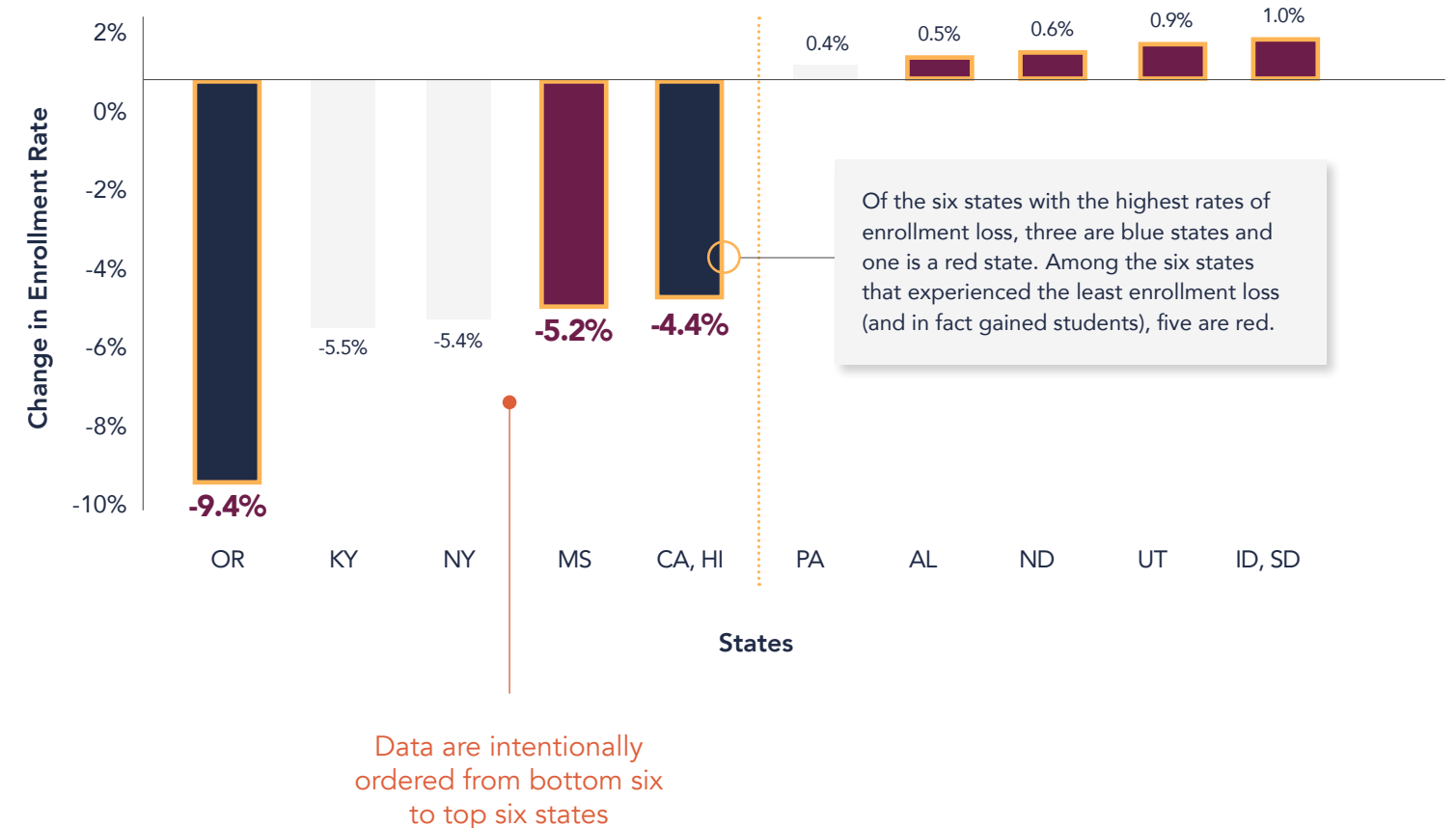
## Intentional Ordering

- Data should be displayed in an order that makes logical sense to the viewer.
- Data may be ordered by frequency counts (e.g., from greatest to least for nominal categories), by groupings or bins (e.g., histograms), by time period (e.g., line charts), alphabetically, etc.
- Use an order that supports interpretation of the data.

## Spacing

- On a bar chart, axis intervals, data points, and data labels are equidistant.
- The spaces between axis intervals should be the same unit, even if every axis interval isn't labeled.
- Irregular data collection periods can be noted with markers or callouts.

**Bottom Six and Top Six States by Percentage Change in Enrollment**  
SY 2019-20 to 2021-22



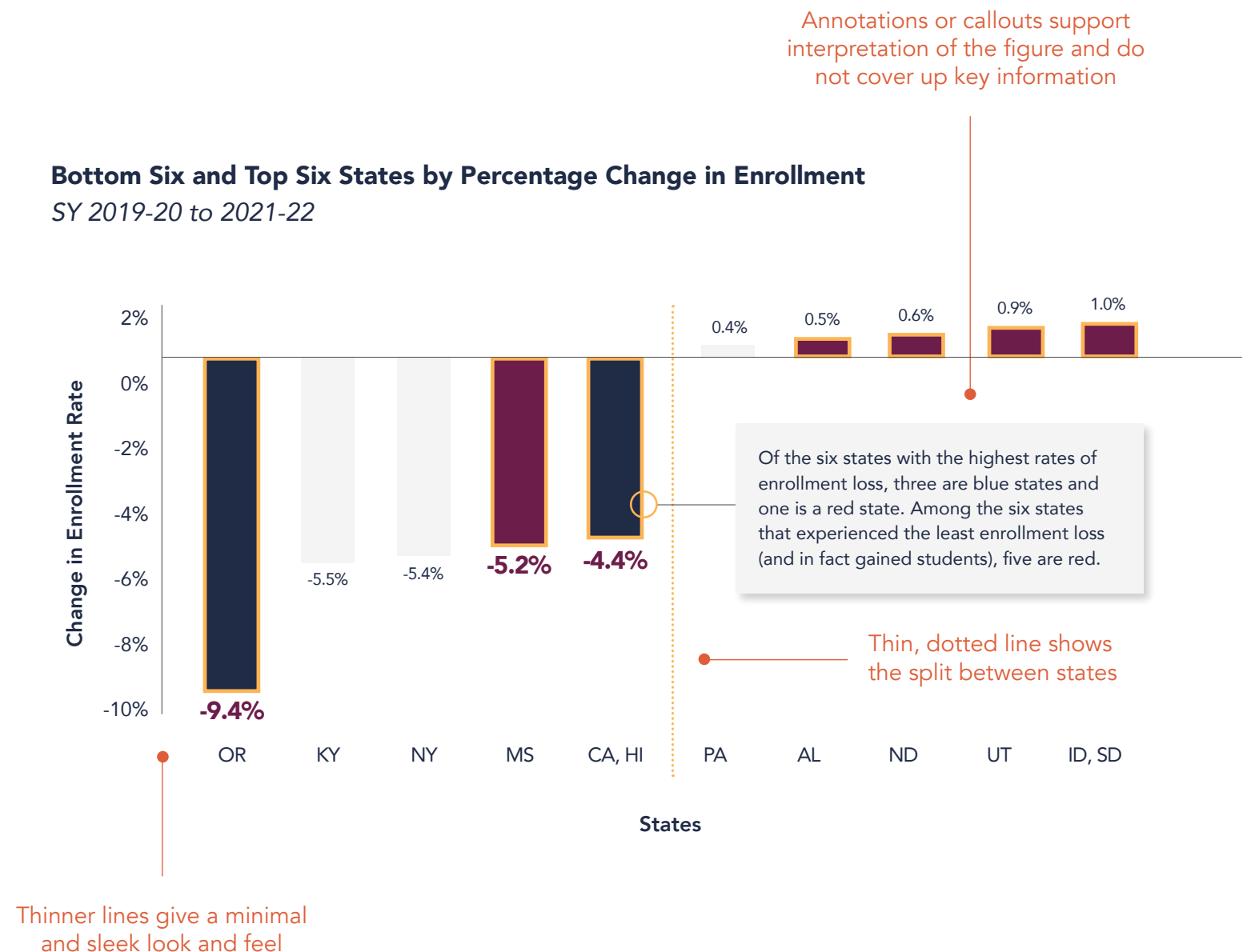
# Visual Elements: Arrangement

## Two-Dimensional

- Analyzing in the third dimension is challenging for nearly all readers.
- Avoid three-dimensional displays, bevels, and other distortions that cause ambiguity and confusion.
- Most visualization software doesn't accurately visualize data in 3D.
- When a bar chart compares two different groups on the same y- and x-axis scale, use a dotted line in an action color to denote the difference.

## Simple and Clean

- Visualization is free from unnecessary data points, information, and decoration.
- Avoid clip art or other illustrations that distract readers from key information.
- Some graphics, like icons, can support interpretation but should be used sparingly as not to clutter up a visualization.



# Visual Elements: Color

Bellwether's colors connote our brand to clients and the field. It is visual guidance and can be used to create connection. Used poorly, it can distract or keep readers from fully accessing the information.

## Color Scheme

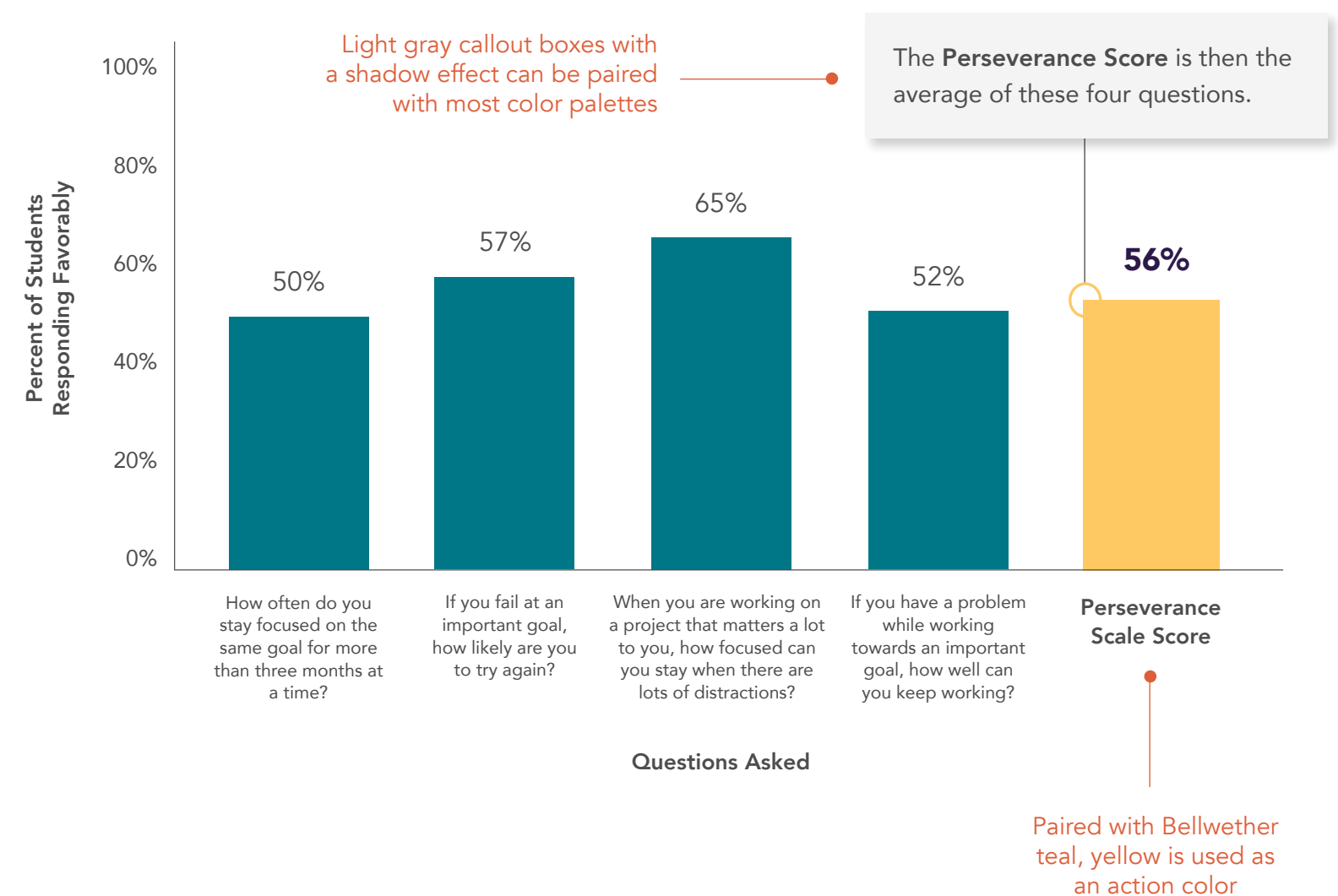
- Colors should default to Bellwether's colors unless for an external partner or client.
- When it is printed or photocopied in black and white, the viewer should still be able to see differences and patterns in the data.
- The [Color Usage](#) guide is a starting point for everyday, internal, and client-facing data viz that don't require an expansive color palette.
- Consider applying a background color to make your data viz stand out (see the [Gallery](#) for examples).

## Action Colors

- Action colors help to highlight insights and takeaways.
- Leverage contrast in data by pairing a dark color with a light action color (Bellwether yellow or orange).
- For some visualizations, color gradients can help to denote rapid change in data.

## Percent of Students Responding Favorably on the Perseverance Scale

*Mock data for illustrative purposes only*



# Visual Elements: Lines

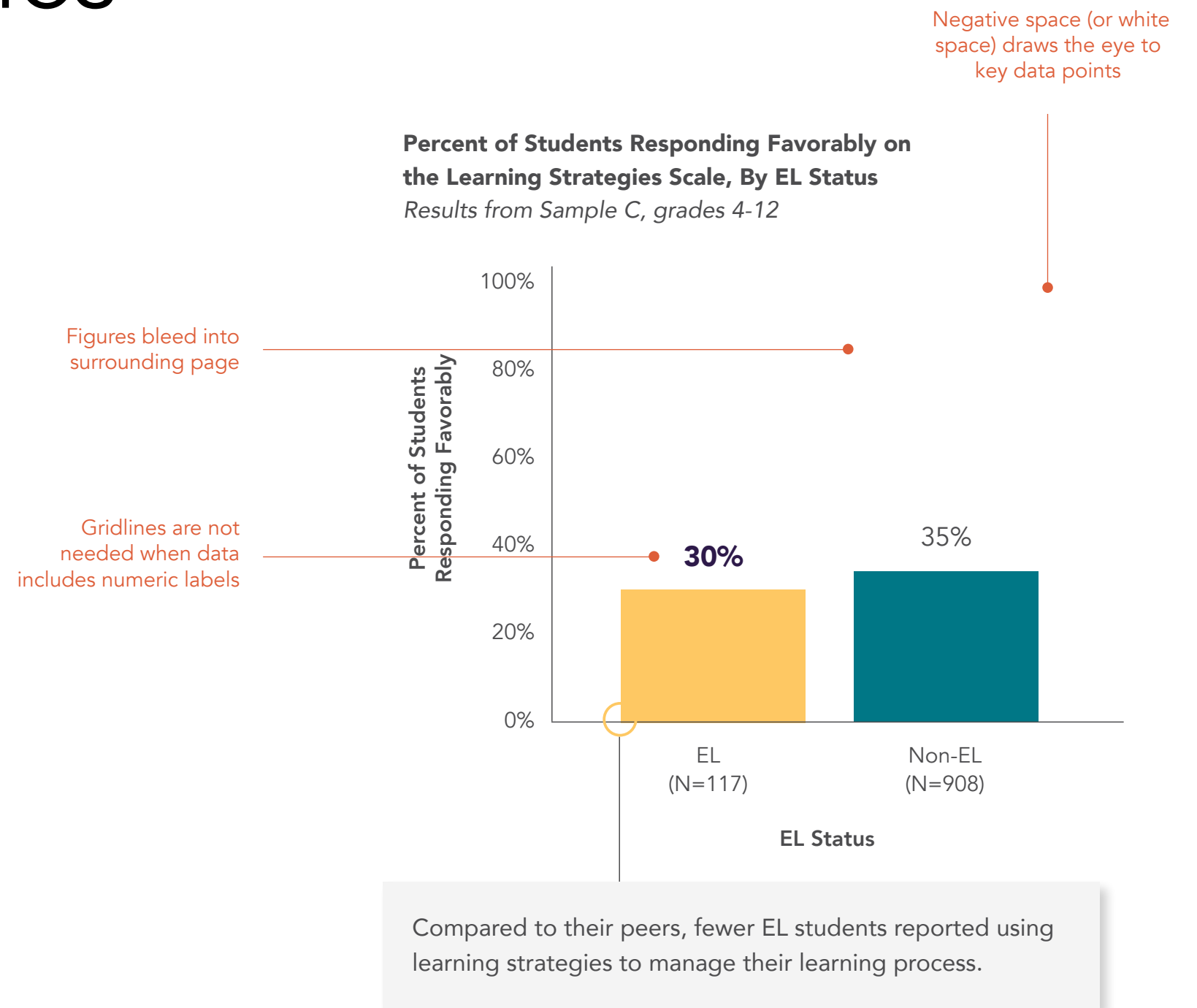
Less is more. Excessive lines — gridlines, borders, tick marks, and axes — can add clutter or noise to a graph, so eliminate them whenever they aren't useful for interpreting the data.

## Gridlines

- Many figures (like charts and graphs) do not need gridlines — ask yourself if they make the graph easier to read or if they clutter the graph unnecessarily.
- Gridlines, even muted, should not be used when the figure includes numeric labels on each data point.
- If present, gridlines are muted and should be a faint gray, not black. Consider using a dotted line instead of a traditional solid line.

## Borders

- Borders around and within a figure break up the white space and distract from the data.
- Figures should bleed into the surrounding page or slide rather than being contained by a border.
- Use white space (not lines, borders, or shadows) to distinguish charts from surroundings (like other charts).



# Visual Elements: Lines

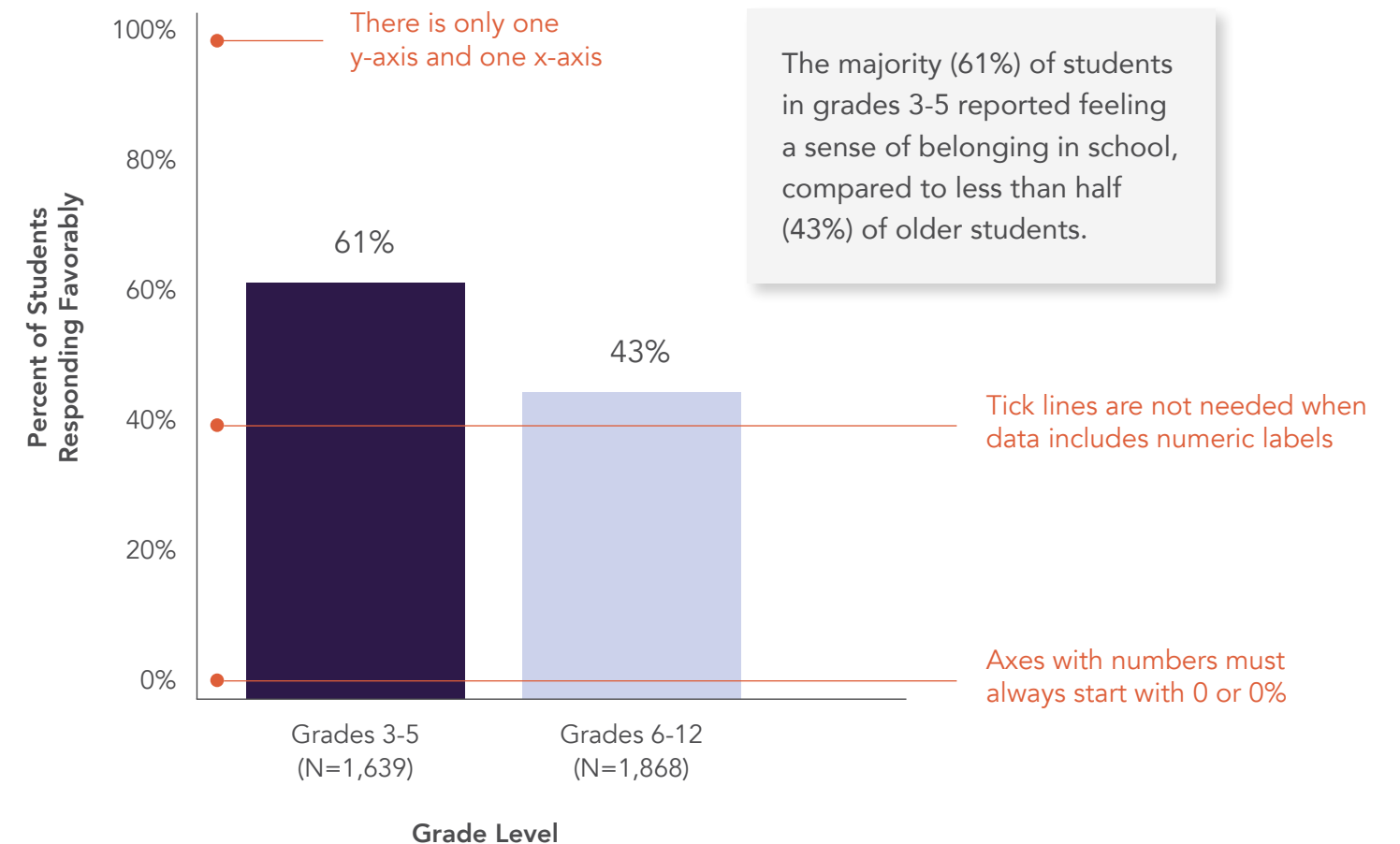
## Tick Marks

- When data are labeled, tick marks can crowd a figure and might not be needed.
- Tick marks can be useful in line graphs (to demarcate each point in time) but are unnecessary in most other graph types.

## Axes Lines

- Be intentional about the upper and lower limits of the axes — axes that include numbers must always start from 0 or 0% as not to distort the data and insights.
- Across multiple figures, axes should be consistent so as not to visually distort the reader's understanding of the data.
- Viewers can best interpret one x-axis and one y-axis. Having two different axes can be confusing and misleading.
- Don't add a second y-axis when it measures data at a different magnitude. Try a connected scatter plot or two graphs, side by side, instead.

**Percent of Students Responding Favorably on the Sense of Belonging Scale**  
*Results from Sample A (grades 3-5) and Sample B (grades 6-12)*



# Visual Elements: Details

Before finishing a data viz, consider details that will either answer the reader's questions or leave them with more questions.

## Sample Size

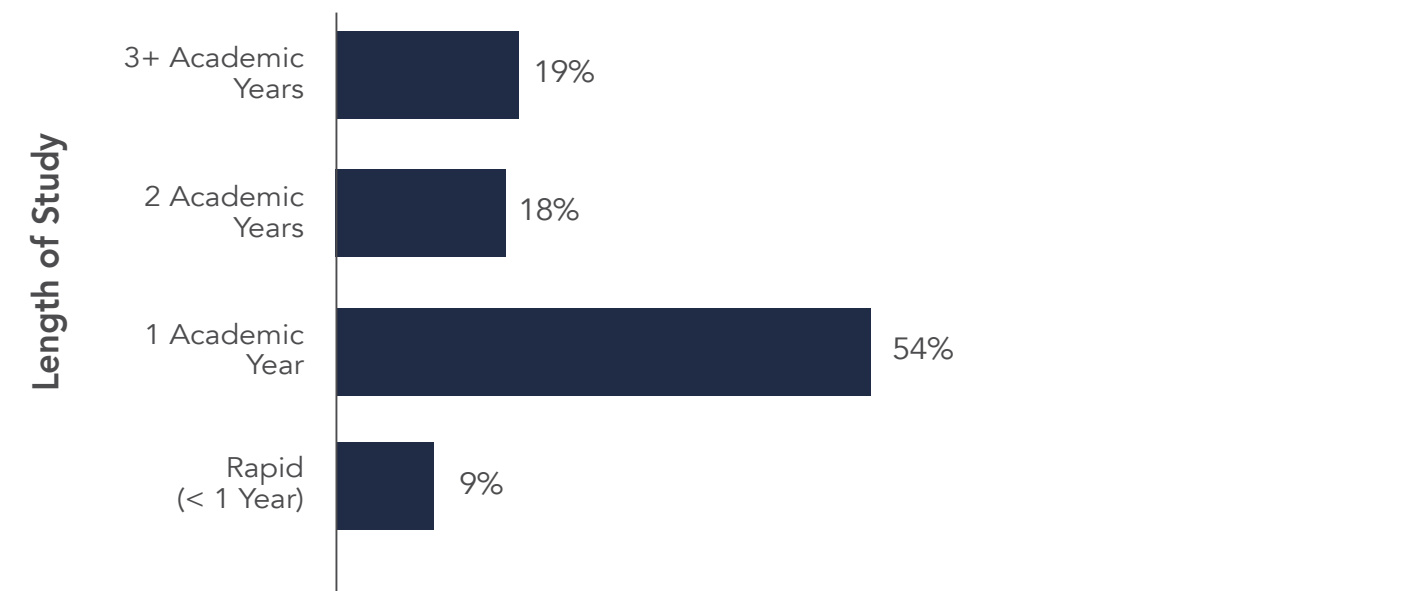
- Sample size is included when appropriate. Add the sample size if the chart uses percentages and the total number is not otherwise represented (e.g., in the text of the report or slide).
- If the sample size is slightly inconsistent across categories, include the N size as part of the data label. N is always capitalized.
- If the sample size is very inconsistent, include a second chart. Clarify why both graphs are necessary for proper interpretation.

## Notes and Sources

- Notes, if any, should go underneath the x-axis and be placed *before* sources. Italicize notes and sources to offset them from the figure.
- Note if figures may not sum to 100% because of rounding. Note if there are missing values. Explain all calculations.
- Clearly state the source by listing the author (as an organization, if applicable) followed by the year (if available).

Title or headline includes additional context at outset

**FIGURE 4: STUDY CHARACTERISTICS BY LENGTH OF STUDY**



N sizes are included as part of the axis label

Percent of Studies, N=57

**Note:** There are different Ns for some of the study characteristics analyzed here due to missing values.

Note if there are missing data or values



# Visual Elements: Details

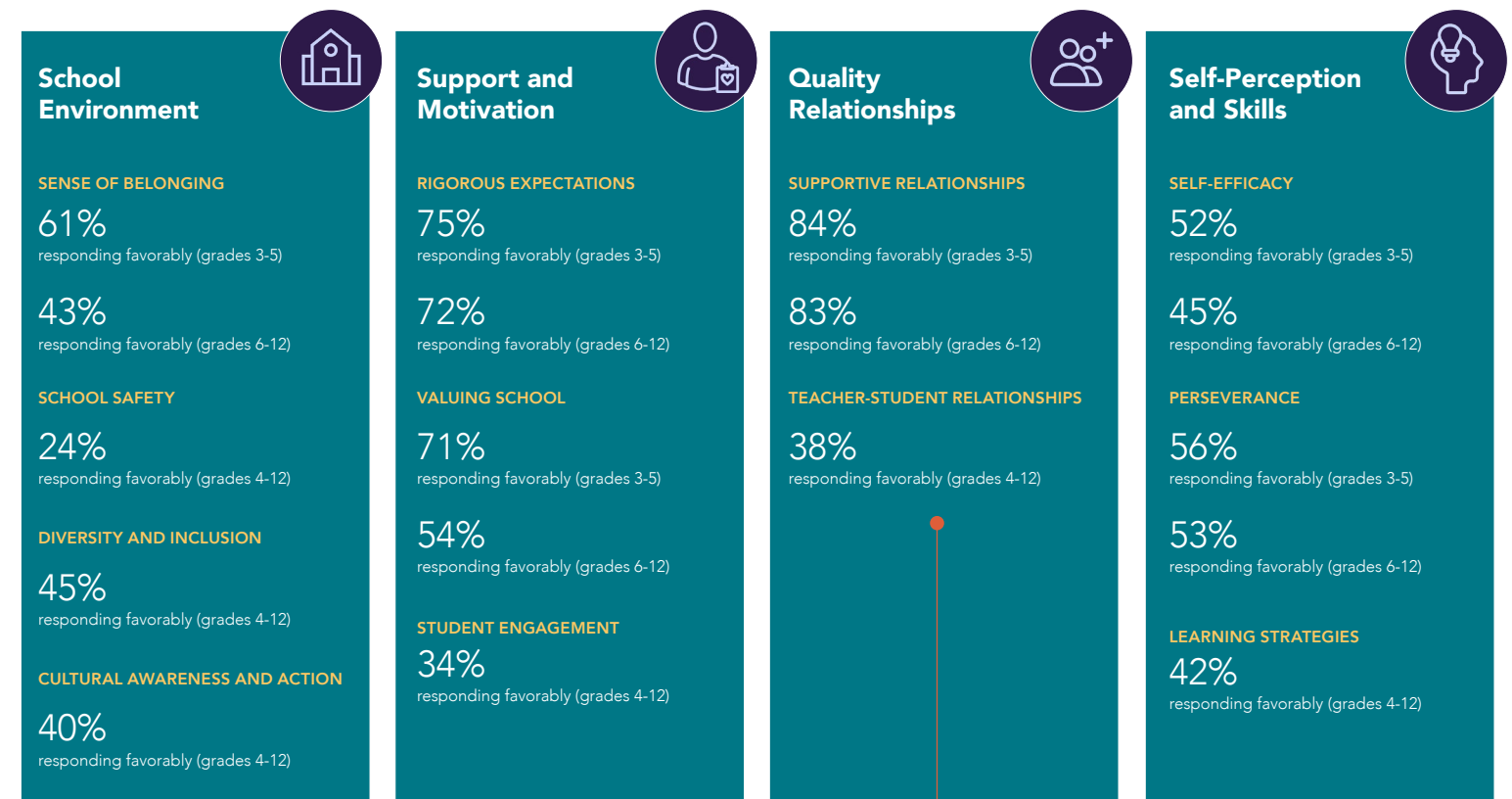
## Precision

- Use a level of precision that meets intended audience members' needs (unless specified by the client, whole numbers are acceptable).
- For large scales, show numbers in hundreds, thousands, etc. Include units of measure in the category label.
- Few numeric labels need decimal places or p values. For those that do, globally apply the same decimal place in other data viz graphics or charts for overall consistency.
- Consider nontraditional visual representations of your data when working with multiple categories or themes.

## Icons and Imagery

- Some graphics (like icons) can be used as a visual indicator to support interpretations, or to help with descriptions.
- Use decorative icons *sparingly*, and only when it helps the reader. If applicable, use it as a navigation tool throughout a document.
- Be mindful of choosing icons that contain harmful, sensitive, or distasteful imagery that could negatively impact your audience.
- Avoid clip art or other illustrations that muddle a big idea, crowd a visualization, or aren't in brand format.

Icons are used to represent each of the four themes



This visual representation shows data across themes and topics

Layers of type size, bolding, and casing displays layers of information in a balanced way

# Writing at Bellwether

The best practices outlined in this guide apply to all written materials at Bellwether where graphics are embedded (e.g., policy briefs, publications, client PowerPoint presentations, internal data-centric materials). Bellwether follows the Associated Press style, with a few exceptions.<sup>8</sup> This nonexhaustive list includes quick-reference tips and tricks for integrating data viz into written materials.

1. Don't spell out "percent"; use %.
2. In written form, spell out "zero" but in any graphic, use the numeral "0."
3. Consistently round up or down to the same decimal point in materials (e.g., 0.03%).
4. Spell out one through nine; use numerals for 10 and above. However, in figures and charts, use numerals globally and consistently.
5. When a month is used with a specific date, abbreviate only Jan., Feb., Aug., Sept., Oct., Nov. and Dec. Spell out when using alone, or with a year alone (e.g., Aug. 4, 2023; August 2022).
6. In tabular material, use these three-letter forms for months, without a period: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec.
7. For amounts less than 1, precede the decimal with a zero (e.g., "The cost of living rose 0.03%."). Spell out fractions less than 1, using hyphens between the words (e.g., two-thirds, four-fifths).

Refer to the following for further guidance and reach out to the [editorial director](#) with questions: *Bellwether Style Guide*; [AP Stylebook: Data Journalism](#); [Rules of Writing at Bellwether](#).

# Applying Diversity, Equity, and Inclusion

Bellwether's commitment to **Diversity, Equity, and Inclusion (DEI)** and data-based insights drive our efforts to advance educational equity. It is our responsibility to take care of data that impacts the communities we serve. When representing subgroups, apply your DEI lens and consider these nine areas of data inclusivity:<sup>7</sup>

1. Language
2. Color
3. Groups
4. Order
5. Imagery
6. Photography
7. Empathy
8. Question
9. Reflection

"To achieve our mission, we must be a diverse, equitable, and inclusive organization broadly reflecting the various communities we serve. We demonstrate this through our commitment to listening to and showcasing diverse viewpoints."

BELLWETHER CORE VALUE: DIVERSITY, EQUITY, AND INCLUSION

# Applying DEI

## Language

- Text is among the first things that a reader scans when looking at a data viz.
- Pay close attention to category labels, data labels, keys, and legends when scanning text with an equity lens.
- Label data using people-first language (e.g., “people with disabilities,” not “disabled people”).
- Terms should refer to people and not to their skin color (e.g., “Black people,” not “Blacks”).

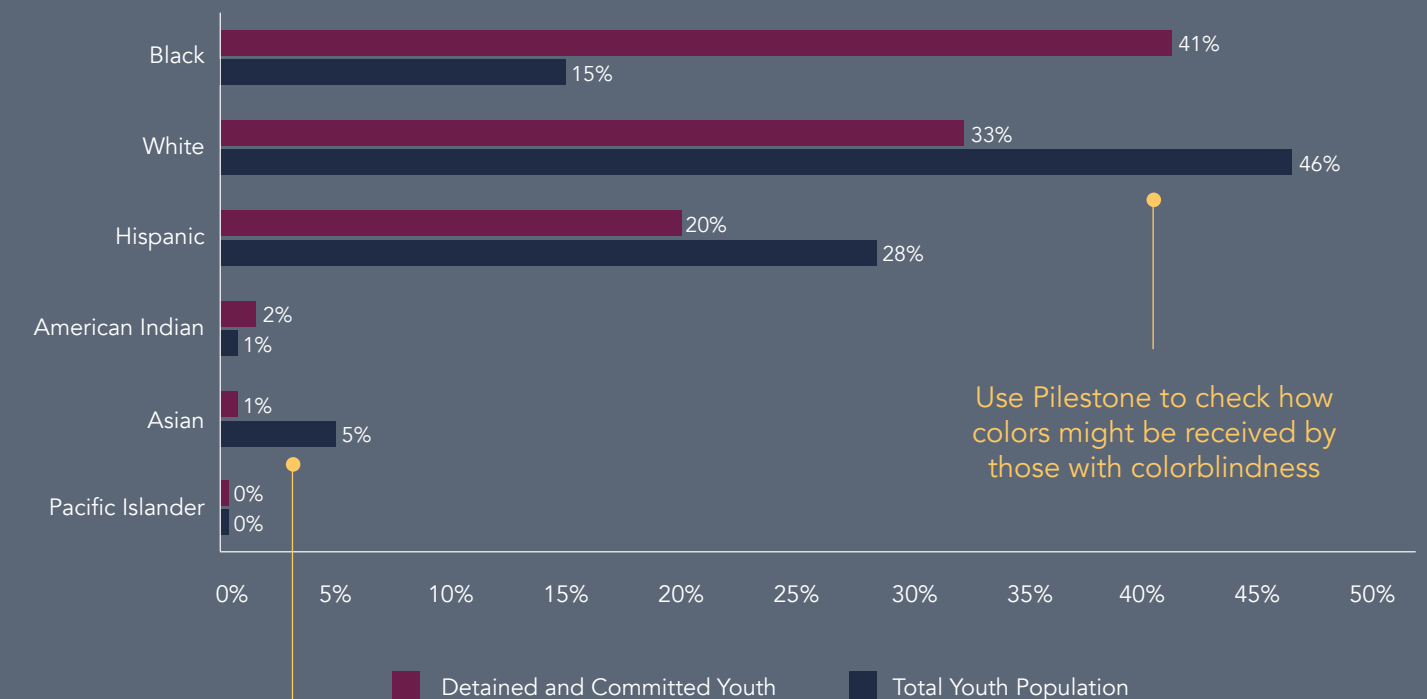
## Color

- Colors, words, and categorizations can perpetuate or exacerbate inequities.
- Colors should be thoughtfully applied as not to reinforce gender or racial stereotypes (e.g., using blue for boys and pink for girls).
- Avoid using colors associated with skin tones to represent different racial groups.
- For some with colorblindness, Bellwether’s darker colors can be difficult to distinguish from one another in the same visualization. Use [Pilestone](#) to check the colors on your charts.

This descriptive sentence uses people-first and inclusive language

**Despite the decline in youth incarceration during the past two decades, students in the custody of juvenile justice systems are still disproportionately Black and American Indian, youth who are (or who are perceived to be) LGBTQIA+, and students with disabilities.**

FIGURE 1: 2019 ONE-DAY COUNT — DETAINED AND COMMITTED YOUTH BY RACE/ETHNICITY



**Sources:** Sickmund et al., “Easy Access;” National Center for Education Statistics, “*Enrollment in Public Elementary and Secondary Schools, by Level, Grade, and Race/Ethnicity: Selected Years, Fall 1999 through Fall 2020*,” September 2021.

Colors are not associated with skin tones or racial groups

# Applying DEI

## Groups

- Consider if it is worth acknowledging who is and is not included in your data viz.
- Avoid lumping groups with few observations into the “Other” category. In some cases, this category may be necessary to achieve sufficient sample size for statistical analyses.
- In cases where data were collected about a specific group but that group was not presented, add the original dataset in the Appendix.

## Order

- Many data labels appear simply as they are presented in raw data, but groups we choose to show first or last can affect how readers perceive the relationship or hierarchy between groups.
- How we choose to order information may also reflect who we view as the intended audience.
- Think about the focus, argument, or relationship of the visualization. The order and presentation should reflect the answers to the three listed categories.

This table acknowledges who is not included in the data

This report represents the survey responses of 5,419 students attending public charter schools in the District of Columbia.

To maintain student confidentiality, if a student demographic group includes fewer than 10 students, the group is not included in the table.

Student Demographics	Percent of Students in Full Sample	Number of Students in Full Sample
Total Students	100%	5,419
Student Gender		
Male	50.4%	2,733
Female	49.5%	2,683
Student Subgroups		
Students identified as at-risk	37%	2,006
Students with disabilities (SWD)	16.5%	895
English learners (ELs)	4.5%	245
Racial and Ethnic Demographics		
Asian	2.4%	131
Black or African American	65%	3,525
Hispanic	16.2%	877
Native American	1.8%	96
Native Hawaiian or Other Pacific Islander	0.4%	22
Two or More Races	2.1%	118
White	14.7%	800

Racial/Ethnic demographics are intentionally alpha-ordered

**Notes:** Fewer than 10 students did not report a gender or identified as nonbinary. For most schools, race and Hispanic ethnicity were reported separately and are not mutually exclusive; see [Appendix](#) for subgroup breakdown by sample groups A, B, and C; definition of at-risk provided by OSSE.

Note when the original dataset is available in the Appendix

# Applying DEI

## Imagery

- Icons for data viz should be used sparingly. When using, avoid icons that make inappropriate depictions of people or communities or reinforce stereotypes.
- Think about representing a mix of genders, races, and ethnicities, and how icons might be perceived. Certain icons may not correspond to the content (e.g., an icon of a baby in a chart about child mortality).
- Consider the imagery you choose and if it might mis- or underrepresent certain groups (e.g., using a female nurse or a male boss icon).

## Photography

- Choose photography with a DEI lens to ensure inclusivity and to respectfully represent the groups we serve.
- On sensitive issues, be careful not to inadvertently stereotype or show students' or parents' faces.
- Avoid being too literal. Abstract-style images can still convey a feeling, point, or meaning. Trust that your audience can make abstract leaps.
- Refer to Bellwether's [Stock Photo library](#) to access photo assets for client- and field-facing materials (note: this resource is updated on an ongoing basis).





# Applying DEI

## Empathy

- Viewing empathy through a DEI lens considers how the specific lived experiences and perspectives of our readers and study populations will perceive the information.
- The guiding principle here is to put people first and help the reader better understand and recognize the people *behind* the data.

## Question

- Apply a DEI lens when questioning default visualization approaches.
- It is often reflexive to present data by race or ethnicity on the same chart. In some cases, this can create a “deficit-based perspective” that focuses attention on what low-performing groups are lacking when compared with the high performers.
- If applicable, consider plotting each race on its own chart to better encourage readers to think about the specific needs and challenges facing each group.

## Reflection

- Engage or reflect on the lived experiences of populations in a given project. Researchers should reach out to members of the communities and ask for their feedback and advice.
- Consider these questions: Are we using language consistent with how they refer to themselves and others? What have we missed in our visuals that is inconsistent with DEI? How can we take a more empathetic approach that accurately and respectfully accounts for other people’s lived experiences?



# Bellwether Gallery

**The Bellwether Gallery is a design and visual reference for some commonly used data viz at Bellwether.**

Each figure was pulled from existing field-facing publications and may have been visually tweaked for the purposes of this Data Visualization Brand Guide. The gallery is visual guidance and inspiration for design, color, and overall formatting. It is *not* a working template for team use.

**Bar Charts**  
**Big Numbers**  
**Donuts**  
**Line Graphs**  
**Tables**  
**Timelines**





**BAR CHART**  
Horizontal

**Common Ground: How Public K-12 Schools  
Are Navigating Pandemic Disruptions and  
Political Trends**

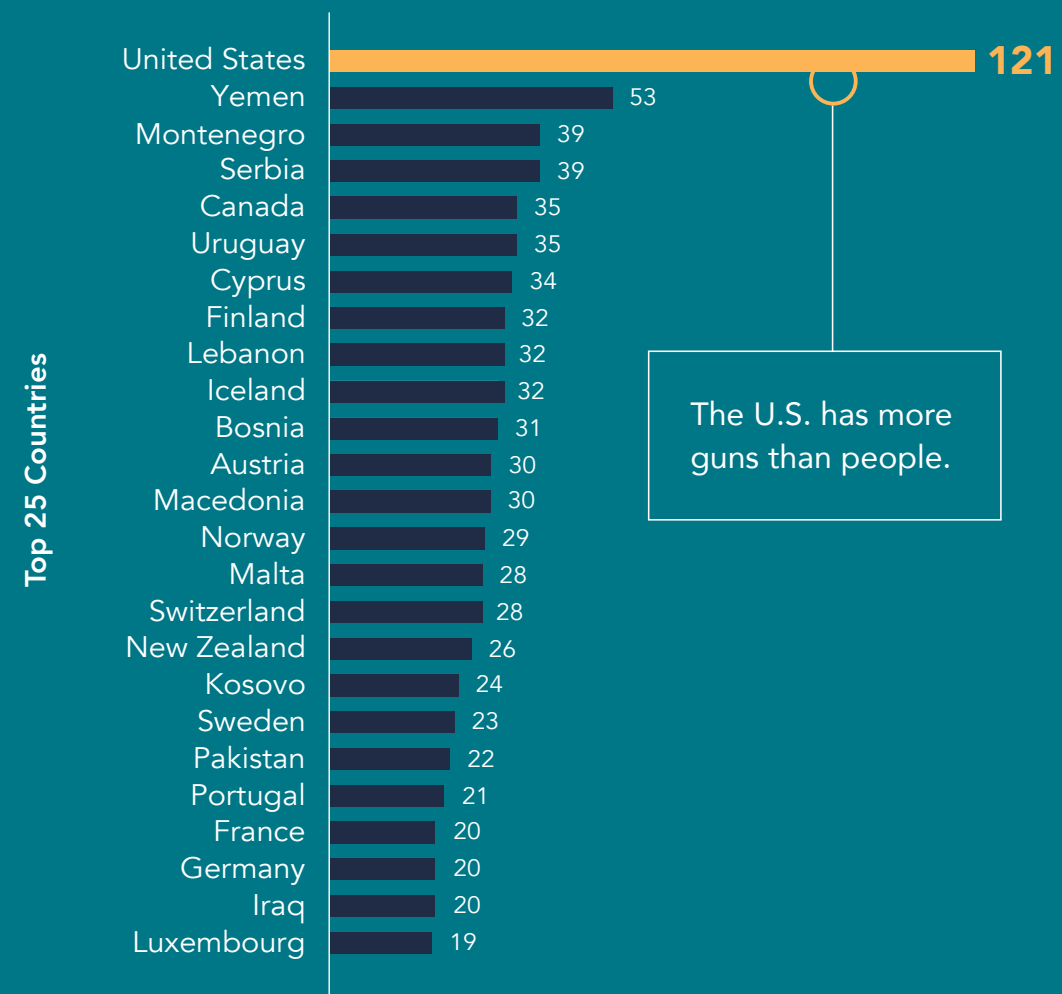
**AUTHORS**

Andrew J. Rotherham  
Kelly Robson Foster  
Michael D. Corral

JANUARY 2023

As of 2017, the U.S. had the most per-capita guns in the world;  
in 2020, guns were the leading cause of death in kids.

**Civilian Firearm Holdings per 100 Residents, Top 25 Countries  
2017**



**Source:** Small Arms Survey, "Estimating Global Civilian-Held Firearms Numbers," 2018.



**BAR CHART**  
Horizontal

**Common Ground: How Public K-12 Schools  
Are Navigating Pandemic Disruptions and  
Political Trends**

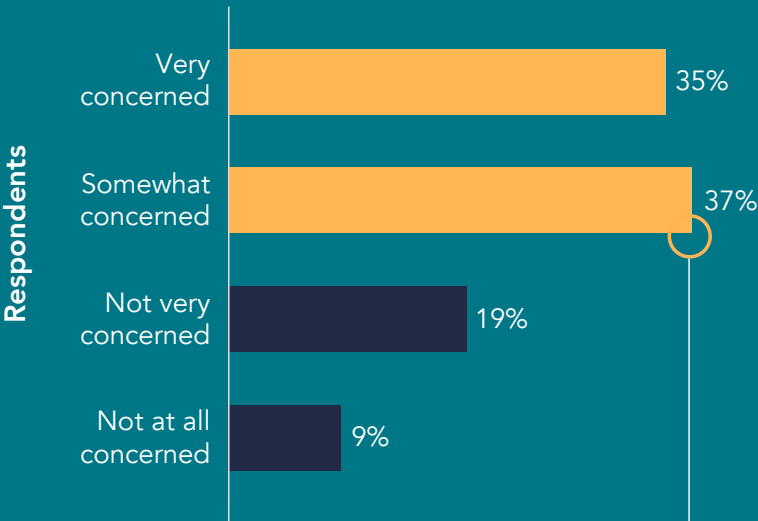
**AUTHORS**

Andrew J. Rotherham  
Kelly Robson Foster  
Michael D. Corral

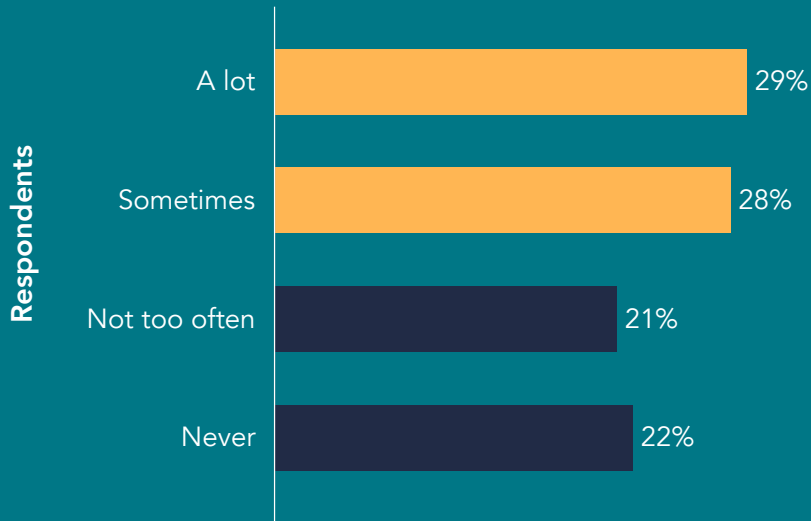
JANUARY 2023

**The issue of gun violence in schools is top of mind for parents  
in the aftermath of Uvalde.**

**Are you concerned about gun violence  
at your children's school?**  
*June 1-3, 2022*



**How often do your children worry about gun  
violence in school?**  
*June 1-3, 2022*



On May 24, 2022, 19 children and two adults were killed in a shooting at Robb Elementary School in Uvalde, Texas. A CBS News poll taken two weeks later finds that, among parents of school-aged children, 72% are somewhat or very concerned about school-based gun violence; 57% of their children worry about school-based gun violence sometimes or a lot.

**Source:** CBS News, "Parents Are Scared About Gun Violence in Schools, and So Are Their School-Aged Children — CBS News Poll," 2022.



**BAR CHART**  
Comparison

Double-Punished: Locked Out of Opportunity

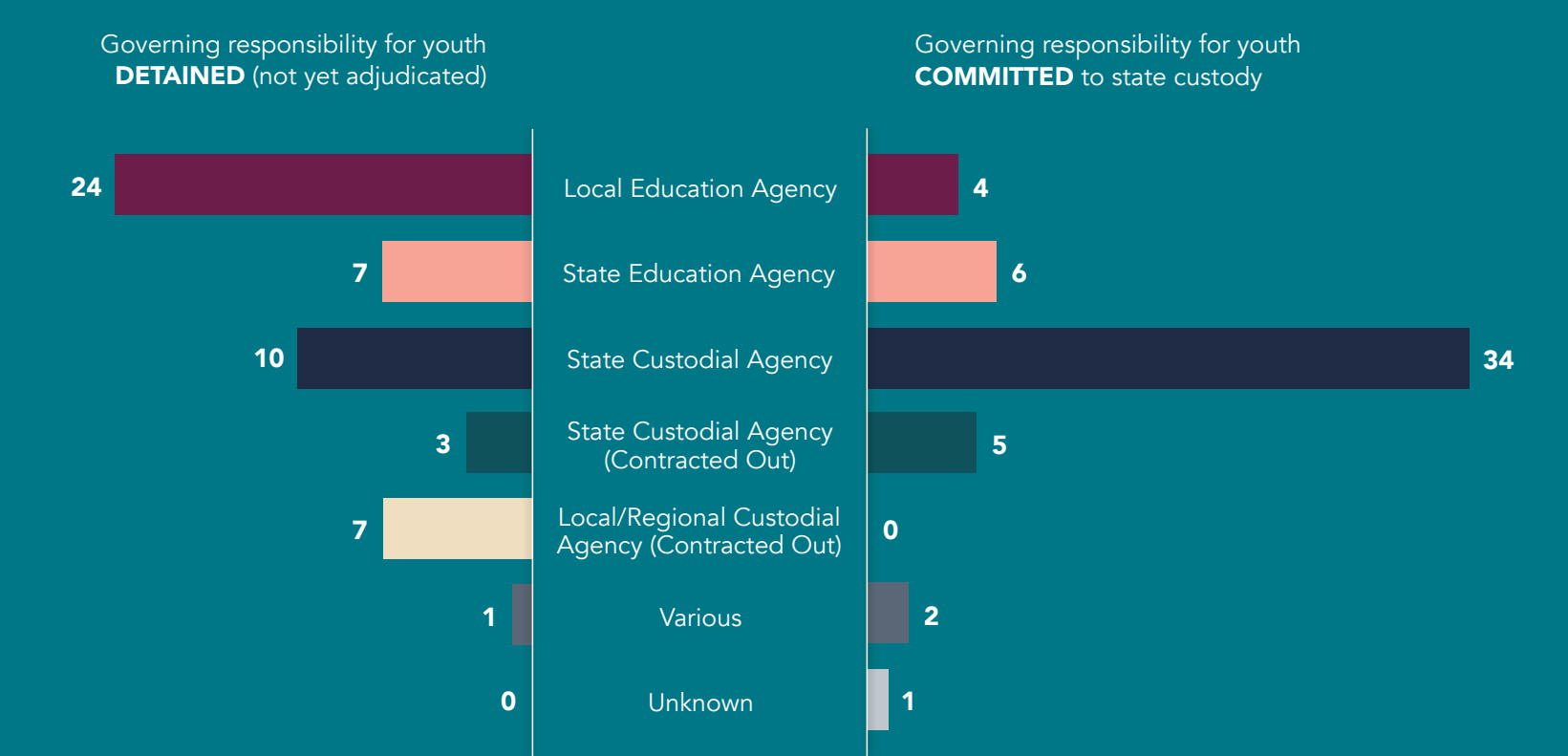
**AUTHORS**

Paul Beach  
Brian Robinson  
Hailly T.N. Korman  
Linea Koehler

JUNE 2022

When youth have been adjudicated and committed for longer sentences or have been determined to need placement in a secure facility due to the nature of the offense or other factors, they are typically moved to a long-term, often state-run, facility.

FIGURE 4. COUNT OF LOCAL AND STATE MODELS FOR JUVENILE JUSTICE EDUCATION, BY DETAINED AND COMMITTED STATUS



**Note:** **Local education agency** refers to local school districts, county boards of education, or the equivalent. **State education agency** refers to state departments or boards of education, state superintendents, or the equivalent. **State custodial agency** refers to state agencies with physical custody of youth. Note, states may refer to custodial agencies by different names, such as Department of Corrections, Department of Health and Human Services, Department of Justice, Department of Juvenile Justice, Department of Youth Services. **State custodial agency (contracted out)** refers to state custodial agencies that have governing responsibility and have contracted with an LEA, public charter school, or some other education service provider. **Local/regional custodial agency** refers to local juvenile detention centers with physical custody of youth that have governing responsibility and have contracted with an LEA to provide education services.



**BAR CHART**  
Vertical

**Students Speak: A Snapshot of Youth Well-Being in the District of Columbia**

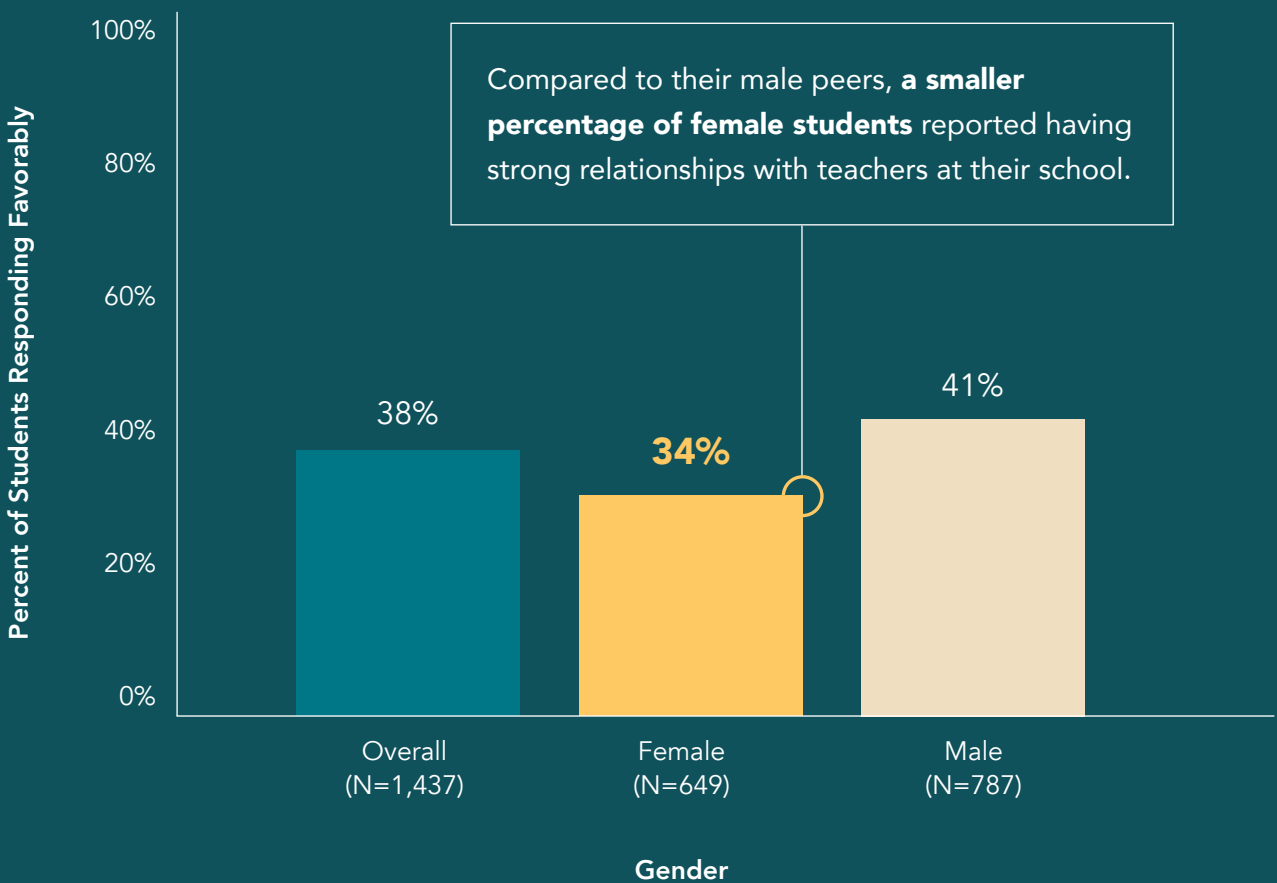
**AUTHORS**

Kristen Carroll  
Priyanka Patel  
Ebony Lambert  
Melissa Steel King

APRIL 2023

In grades 4-12, female students were less likely to report strong relationships with teachers at school.

**Percent of Students Responding Favorably on the Teacher-Student Relationships Scale, By Gender**  
*Results from Sample C, grades 4-12*





**BAR CHART**  
Vertical

**Common Ground: How Public K-12 Schools  
Are Navigating Pandemic Disruptions and  
Political Trends**

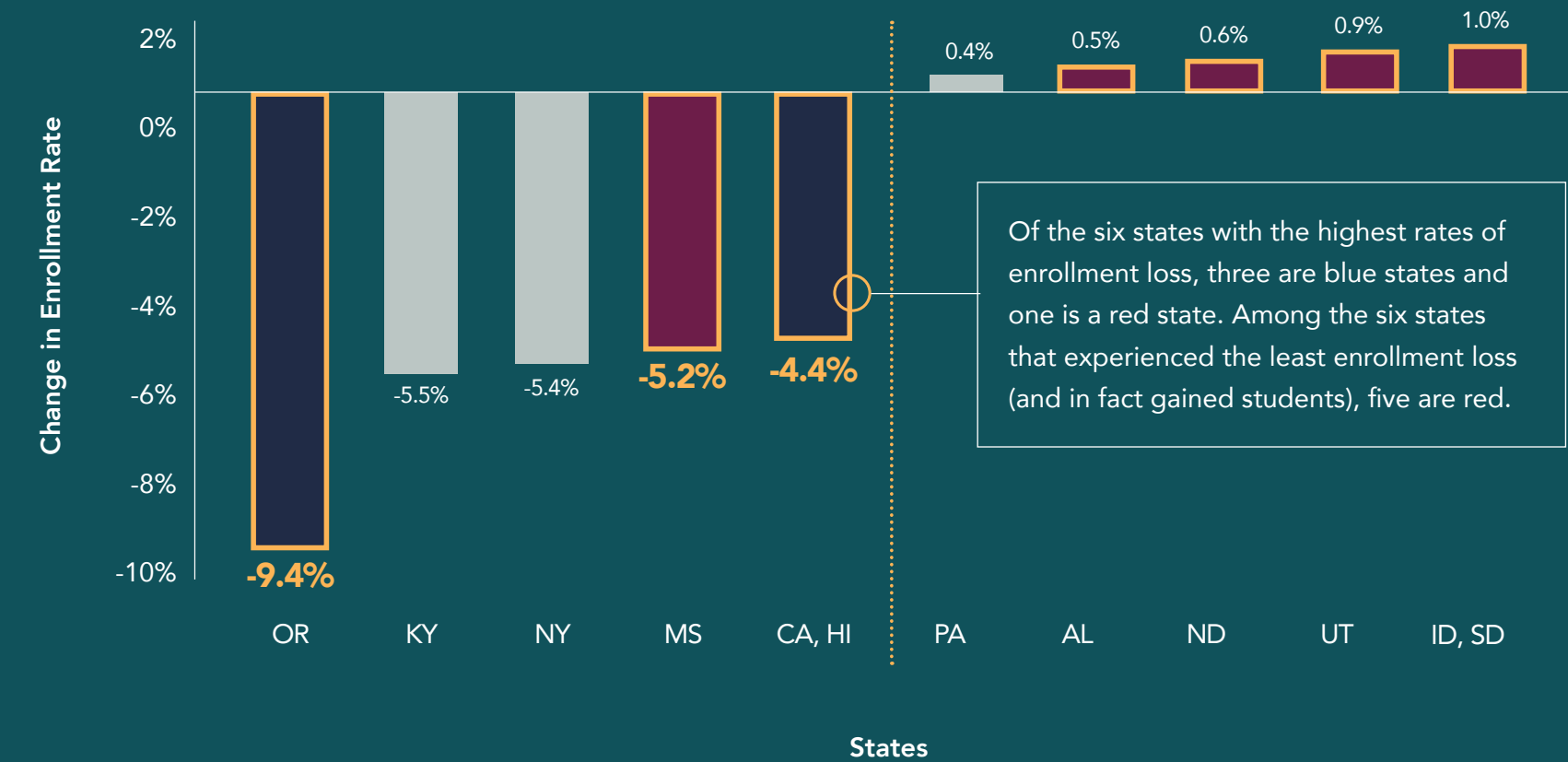
**AUTHORS**

Andrew J. Rotherham  
Kelly Robson Foster  
Michael D. Corral

JANUARY 2023

Blue states are overrepresented among those with the largest enrollment drops; several red states saw enrollment increases.

**Bottom Six and Top Six States by Percentage Change in Enrollment**  
SY 2019-20 to 2021-22



**Note:** Navy bars indicate blue states and plum bars indicate red states based on the definition in Appendix slide 107.  
**Source:** National Center for Education Statistics, *Common Core of Data*, state-level files for SY 2019-20 and 2020-21.



**BAR CHART**  
Vertical

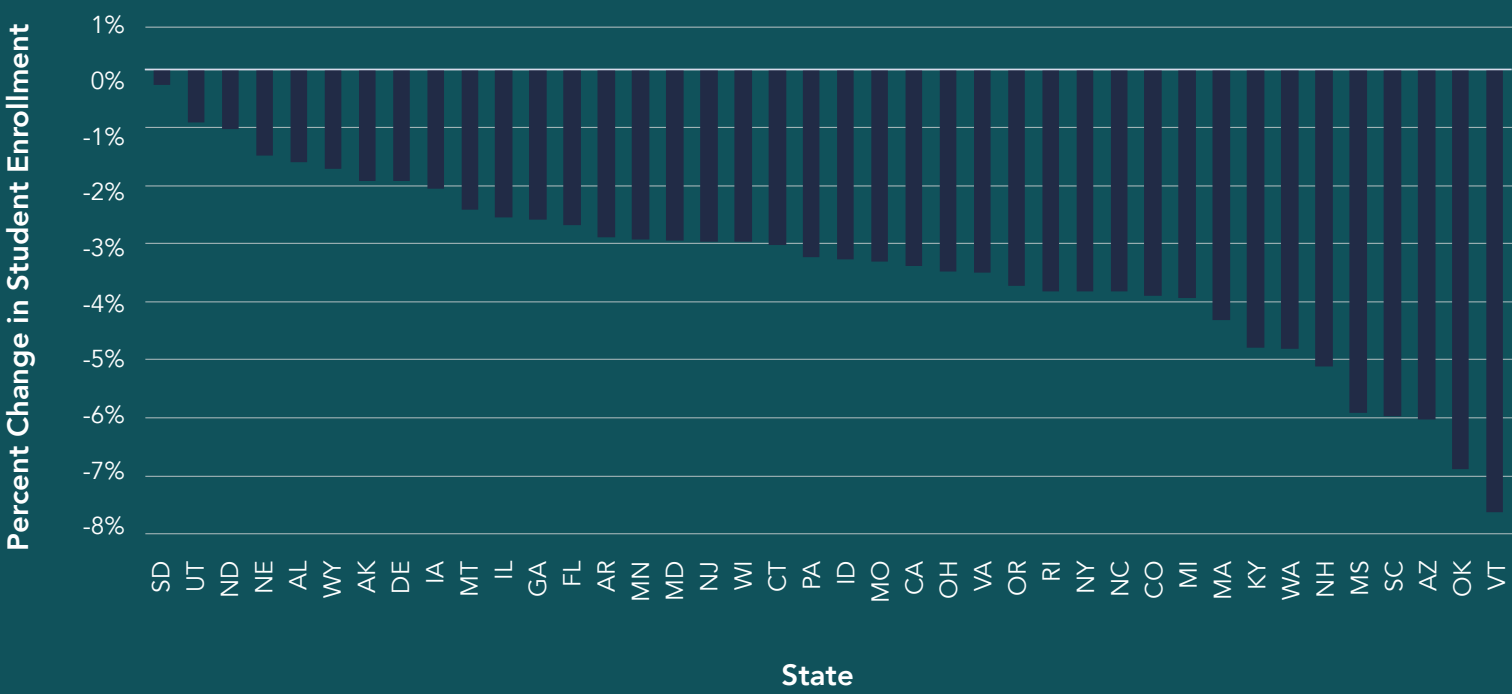
Fortifying Funding: How States Can  
Strengthen Education Finance Systems  
for the Future

**AUTHORS**  
Krista Kaput  
Bonnie O’Keefe

FEBRUARY 2023

During the COVID-19 recession and pandemic (2019-20 and 2020-21 school years), every state saw a decline in student enrollment.

FIGURE 8: PERCENT CHANGE IN STUDENT ENROLLMENT BY STATE, FISCAL YEAR 2020 TO 2021



Source: “Public Elementary-Secondary Education Finance Data,” U.S. Census Bureau, 2020 and 2021.



# BIG NUMBERS

Grid

Common Ground: How Public K-12 Schools  
Are Navigating Pandemic Disruptions and  
Political Trends

## AUTHORS

Andrew J. Rotherham  
Kelly Robson Foster  
Michael D. Corral

JANUARY 2023

Teachers say student behavior is a major issue and cite it as  
a key reason for leaving the profession.

Percent of teachers reporting that each problem is a "serious" or "very serious" issue.  
January 2022



Given the reasons below, what is the largest reason you're leaving your position?  
July 2022



Sources: NEA, "Poll Results: Stress and Burnout Pose Threat of Educator Shortages," 2022;  
Chalkboard Review, "615 Midwestern Teachers Reveal Why They're Really Leaving the Classroom," 2022.



**BIG NUMBERS**  
List

**Inclusive Innovation: Eight Districts’ First Year  
Journey to Creating School Systems for All  
Learners**

**AUTHORS**

Jessica Slaton  
Thomas Gold  
Priyanka Patel

NOVEMBER 2023

The district profile below details how one district recognized the systemic conditions tied to its Problem of Practice (PoP).

**DISTRICT PROFILE**

**DISTRICT STUDENTS**

---

**21,000** students  
**100%** students of color  
**90%** eligible for free and reduced-price meals  
**86%** average high school graduation rate  
**24%** ELLs

**DISTRICT STAFF**

---

**34** schools  
**1,067** teachers  
**86%** teachers of color  
**20:1** student-to-teacher ratio

**DISTRICT COMMUNITY**

---

**160,279** residents  
**98%** people of color  
**25%** live at or below the poverty line  
**\$54,613** median income





**BIG NUMBERS**

Plain Text

**Common Ground: How Public K-12 Schools  
Are Navigating Pandemic Disruptions and  
Political Trends**

**AUTHORS**

Andrew J. Rotherham  
Kelly Robson Foster  
Michael D. Corral

JANUARY 2023

Meanwhile, the public remains more concerned with issues like funding than with how schools teach about race and racism.

Percent of Respondents Agreeing With Statements About How Schools Teach About Race and Racism  
Nov. 4-8, 2021

78%  
YES

Should students be taught in school  
about America’s history of **slavery**?  
(Yes, No, Not Sure)

71%  
YES

Should students be taught in school  
about America’s history of **racism**?  
(Yes, No, Not Sure)

54%  
AGREE

Do you **agree** or **disagree** with this idea:  
*Racism is not merely the product of individual bias  
or prejudice, but also something embedded in legal  
systems and policies. (Agree, Disagree, Not Sure)*

Source: YouGov, “Yahoo! News Survey,” 2021



**DONUT**  
Revenue and Expenses

**Building Parent Power: A Case Study on  
Parents Amplifying Voices in Education (PAVE)**

**AUTHORS**

Krista Kaput  
Kelly Robson Foster  
Alex Cortez

JANUARY 2023

A focus on national funders has created a strong base of philanthropic support.

FIGURE 2: PAVE REVENUE BY TYPE, FISCAL YEAR 2022

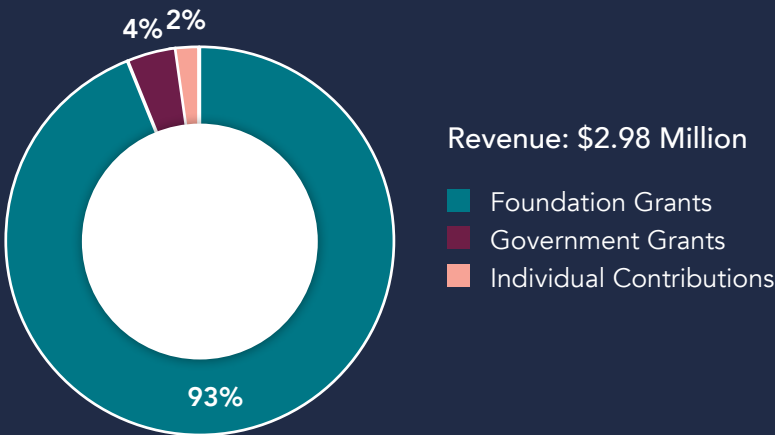
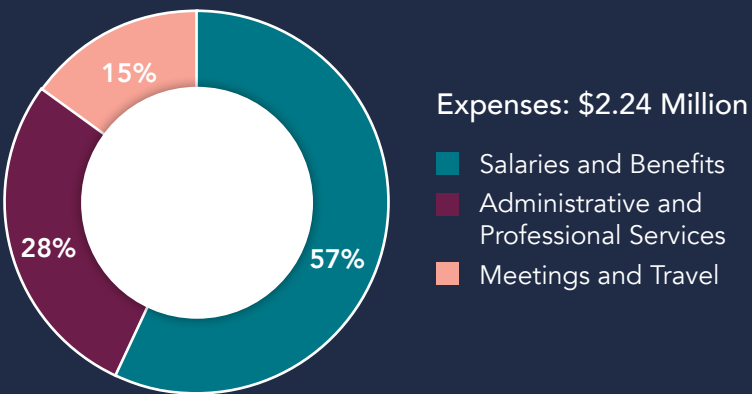


FIGURE 3: PAVE EXPENSES BY TYPE, FISCAL YEAR 2023



**Note:** Totals may exceed 100 due to rounding.  
**Sources:** FY22 and FY23 financials provided by PAVE.



**DONUT**  
Revenue and Expenses

Building Parent Power: A Case Study on  
GO Public Schools (GO)

**AUTHORS**

Krista Kaput  
Kelly Robson Foster  
Alex Cortez

JANUARY 2023

An evolving fundraising strategy keeps pace  
with a growing organization.

FIGURE 1: GO 501(C)(3) REVENUE BY TEAM, FISCAL YEAR 2023

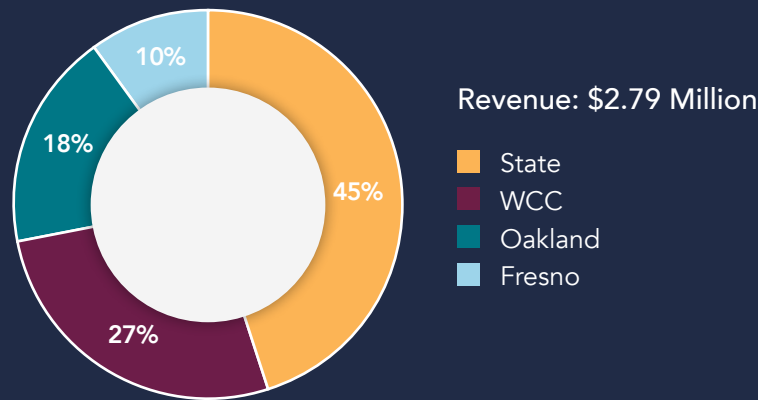
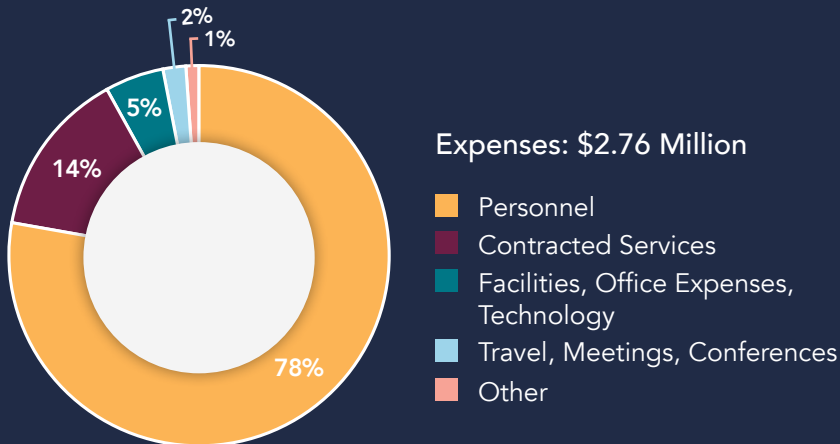


FIGURE 2: GO 501(C)(3) EXPENSES BY CATEGORY, FISCAL YEAR 2023



Sources: FY23 financials provided by GO Public Schools.



**DONUT**  
Categories

Ignored, Punished, and Underserved:  
Understanding and Addressing Disparities  
in Education Experiences and Outcomes for  
Black Children with Disabilities

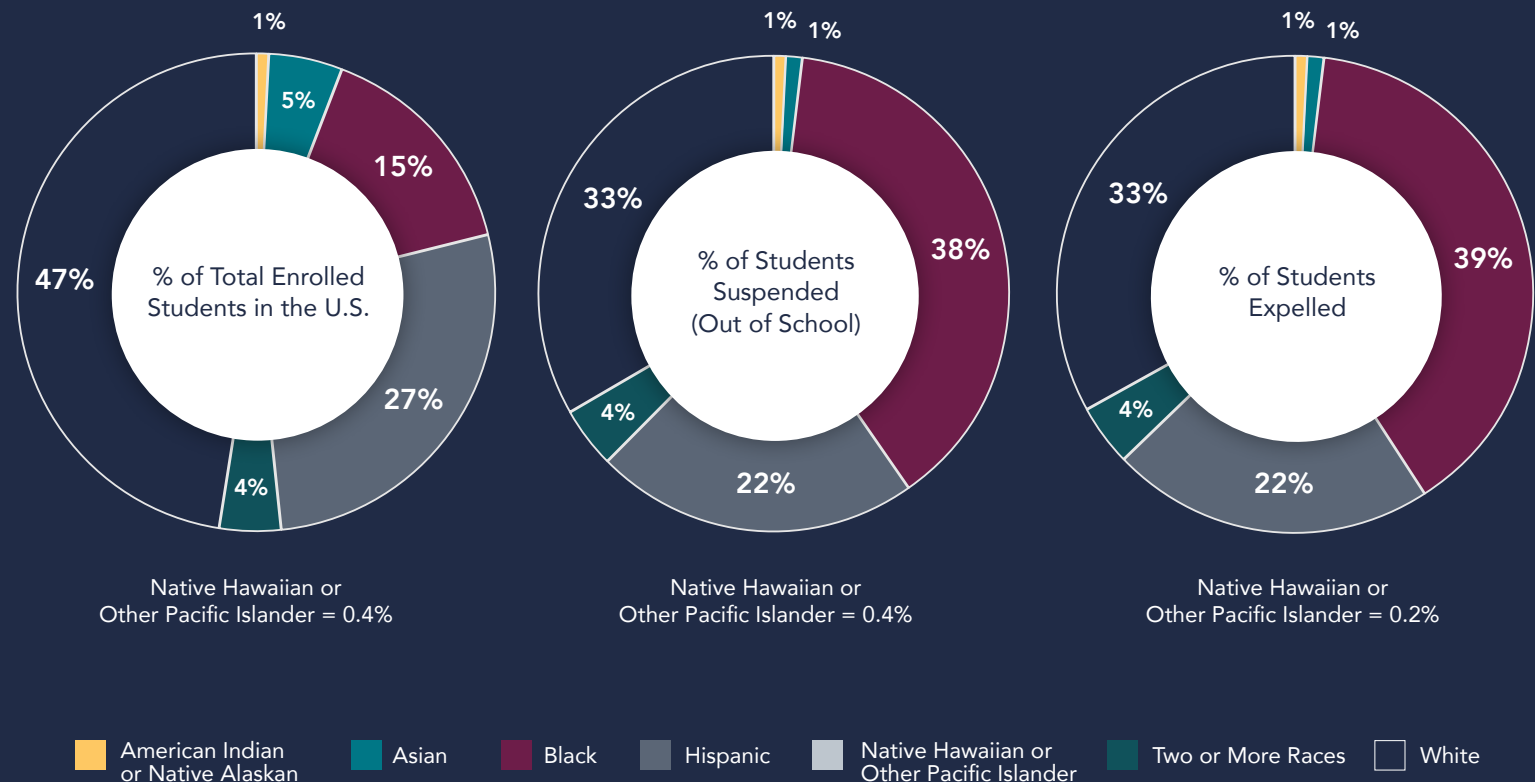
**AUTHORS**

Harold Hinds  
Leonard D.T. Newby  
Hailly T.N. Korman

SEPTEMBER 2022

During the 2017-2018 school year, Black students made up roughly 15% of the United States' total student population, but 38% of students suspended and 39% of students expelled.

FIGURE 1: DISTRIBUTION OF STUDENTS IN THE U.S. THAT WERE SUSPENDED OR EXPELLED, 2017-2018



**Note:** For Figure 1, expulsions refer to expulsions where students received educational service after removal.  
**Source:** U.S. Department of Education's Civil Rights Data Collection, "2017-18 State and National Estimations," 2017-2018.



## LINE GRAPH

### Growth

Common Ground: How Public K-12 Schools  
Are Navigating Pandemic Disruptions and  
Political Trends

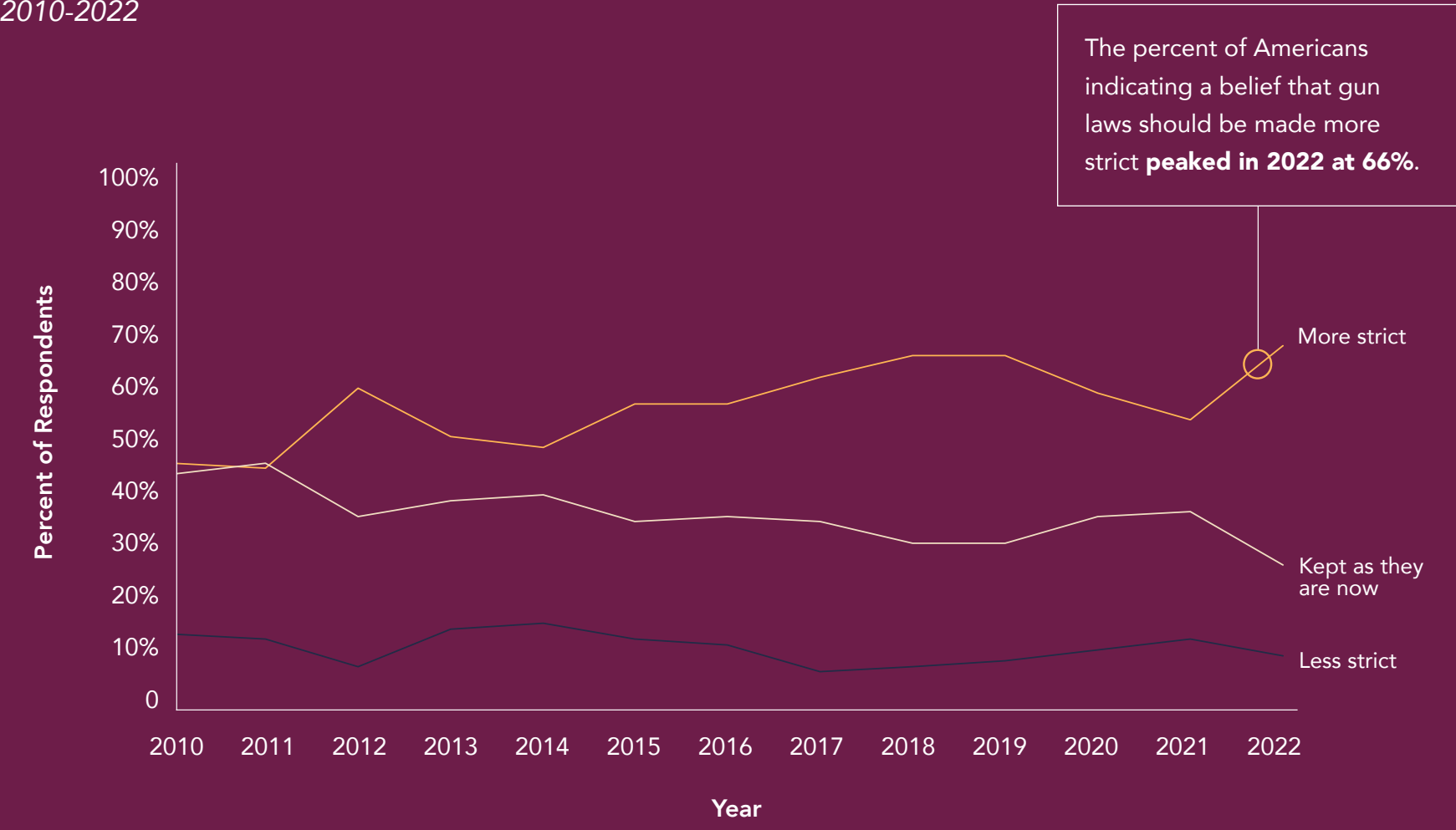
### AUTHORS

Andrew J. Rotherham  
Kelly Robson Foster  
Michael D. Corral

JANUARY 2023

## Over the past decade, Americans have generally favored making gun laws stricter.

In general, do you feel that the laws covering the sale of firearms  
should be made more strict, less strict, or kept as they are now?  
2010-2022



Source: Gallup, "Guns," 2022.



**LINE GRAPH**  
Comparison

**Fortifying Funding: How States Can  
Strengthen Education Finance Systems  
for the Future**

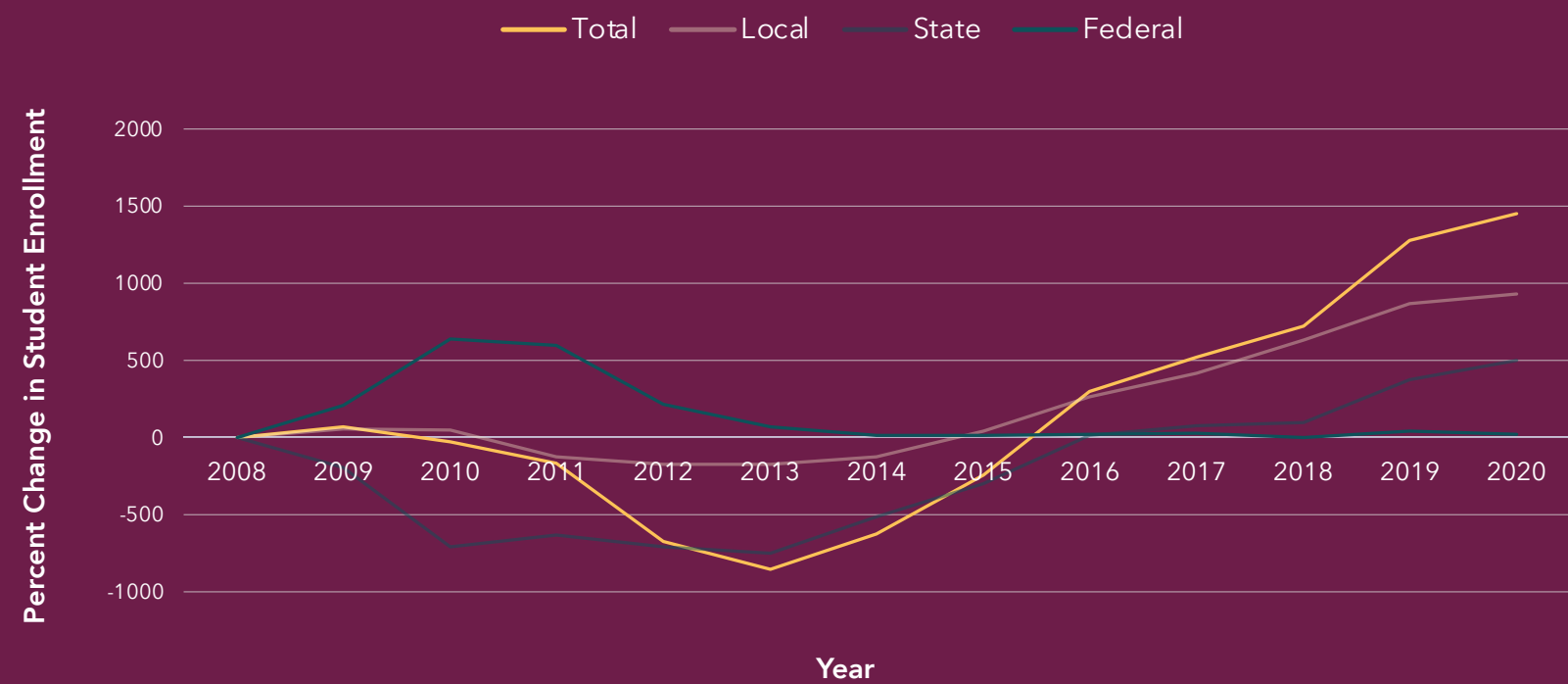
**AUTHORS**

Krista Kaput  
Bonnie O’Keefe

FEBRUARY 2023

**Total education revenue was initially stable at a national level  
because federal aid temporarily made up for state cuts.**

**FIGURE 4: NATIONAL PER-PUPIL FUNDING CHANGES BY REVENUE SOURCE COMPARED WITH  
FISCAL YEAR 2008**



**Source:** "Public Elementary-Secondary Education Finance Data," U.S. Census Bureau, 2020 and 2021.



## LINE GRAPH

### Comparison

**Common Ground: How Public K-12 Schools Are Navigating Pandemic Disruptions and Political Trends**

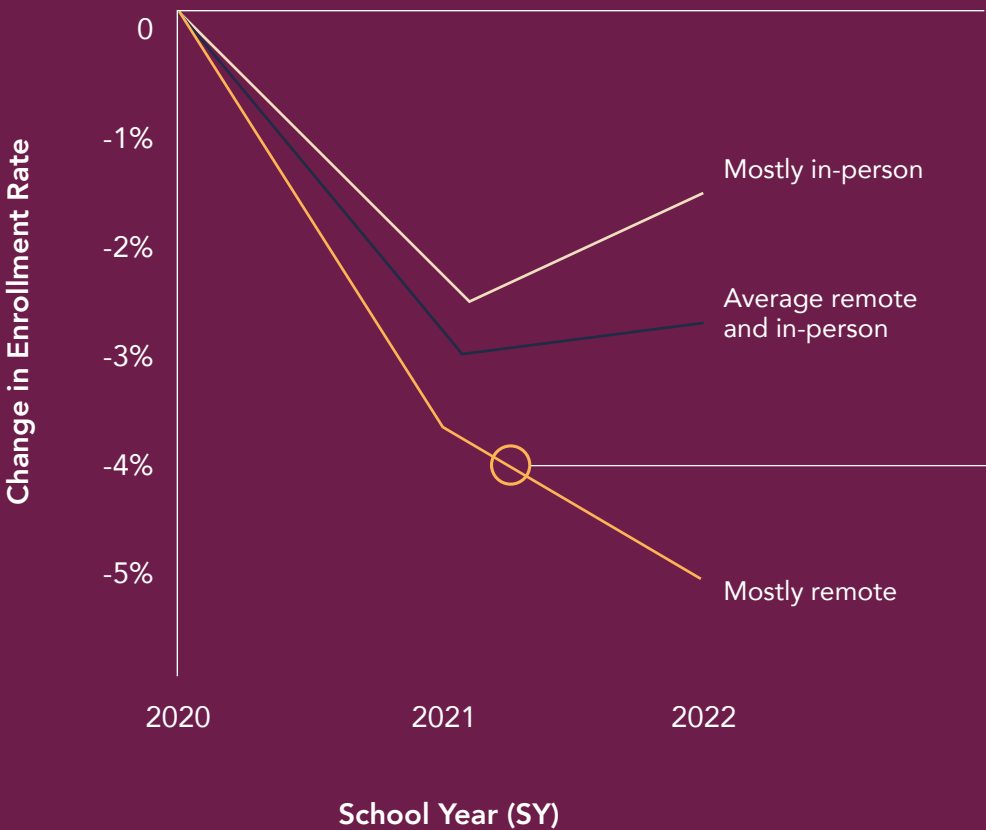
### AUTHORS

Andrew J. Rotherham  
Kelly Robson Foster  
Michael D. Corral

JANUARY 2023

Districts that stayed remote longer and those that enforced masking saw greater declines.

**Percent Change in Enrollment Based on Instructional Status**  
SY 2019-20 to 2021-22



The most remote districts lost nearly **1 out of every 22 students**. Remote and hybrid districts lost students as well but saw a slight rebound in enrollment into SY 2021-22, while the most remote districts continued to lose students.

**Source:** American Enterprise Institute, "Return to Learn Enrollment Tracker," 2022.

TABLE  
Categories

Students Speak: A Snapshot of Youth  
Well-Being in the District of Columbia

AUTHORS

Kristen Carroll  
Priyanka Patel  
Ebony Lambert  
Melissa Steel King

APRIL 2023

When broken down by race, students reported different levels  
of belonging in their school community.

Percent of Students Responding Favorably on the Sense of Belonging Scale, By Race  
Results from Sample A, grades 3-5

Race	Sample Size	Average Sense of Belonging Score	Difference From Overall Average (Percentage Points)
Native American	N=19	50%	-11
White	N=305	60%	-1
Hispanic	N=162	61%	0
Black or African American	N=1,178	61%	0
Asian	N=42	62%	+1
Two or More Races	N=92	65%	+4

In grades 3-5, Native American students **felt less of a sense of belonging**, scoring 11 percentage points below the overall scale score.

**Note:** Some student groups are not reported due to small sample size or missing data.  
For most schools, race and Hispanic ethnicity were reported separately and are not mutually exclusive.





**TABLE**  
Categories

**Students Speak: A Snapshot of Youth Well-Being in the District of Columbia**

**AUTHORS**

Kristen Carroll  
Priyanka Patel  
Ebony Lambert  
Melissa Steel King

APRIL 2023

Across racial groups, there were differences in the percentage of students who reported being held to rigorous expectations.

**Percent of Students Responding Favorably on the Rigorous Expectations Scale, By Race**  
*Results from Sample B, grades 6-12*

Race	Sample Size	Average Rigorous Expectations Score	Difference From Overall Average (Percentage Points)
Black or African American	N=1,791	71%	-1
White	N=46	72%	0
Hispanic	N=43	75%	+3
Two or More Races	N=16	78%	+6

In grades 6-12, more students who identify with two or more races reported being held to rigorous expectations by their teachers, scoring 6 percentage points above the overall Rigorous Expectations scale score.

**Note:** Some student groups are not reported due to small sample size or missing data.  
For most schools, race and Hispanic ethnicity were reported separately and are not mutually exclusive.



**TABLE**  
Comparison

From Midterm Wins to Weathering a Mounting Storm: Policymakers Must Put Families, Not Politics, at the Center of 2023 Legislative Agendas

**AUTHORS**

Michelle Croft  
Alex Spurrier  
Juliet Squire  
Andrew J. Rotherham

DECEMBER 2022

National test scores and other measures show catastrophic learning loss and rising inequity.

TABLE 1: NAEP SCORE CHANGE IN SELECT STATES AND LARGE URBAN DISTRICTS, 2019-2022

	Grade 4		Grade 8	
	Reading	Math	Reading	Math
STATE				
Arizona	0 points	-6 points*	-1 point	-9 points*
Georgia	-2 points	-3 points	-2 points	-8 points*
Michigan	-6 points*	-4 points*	-4 points*	-8 points*
National Average	-3 points*	-5 points*	-3 points*	-8 points*
DISTRICT				
Atlanta	-8 points*	-7 points*	-1 point	-6 points*
Detroit	-6 points*	-12 points*	-5 points	-6 points*
Large City Average	-3 points*	-8 points*	0 points	-8 points*

**Note:** \*Statistically significant change from 2019; Arizona does not participate in the Trial Urban District Assessment program, so district scores are unavailable. **Source:** [The Nation’s Report Card](#).



## TIMELINE

### Chronological

#### Building Parent Power: A Case Study on Kids First Chicago (K1C)

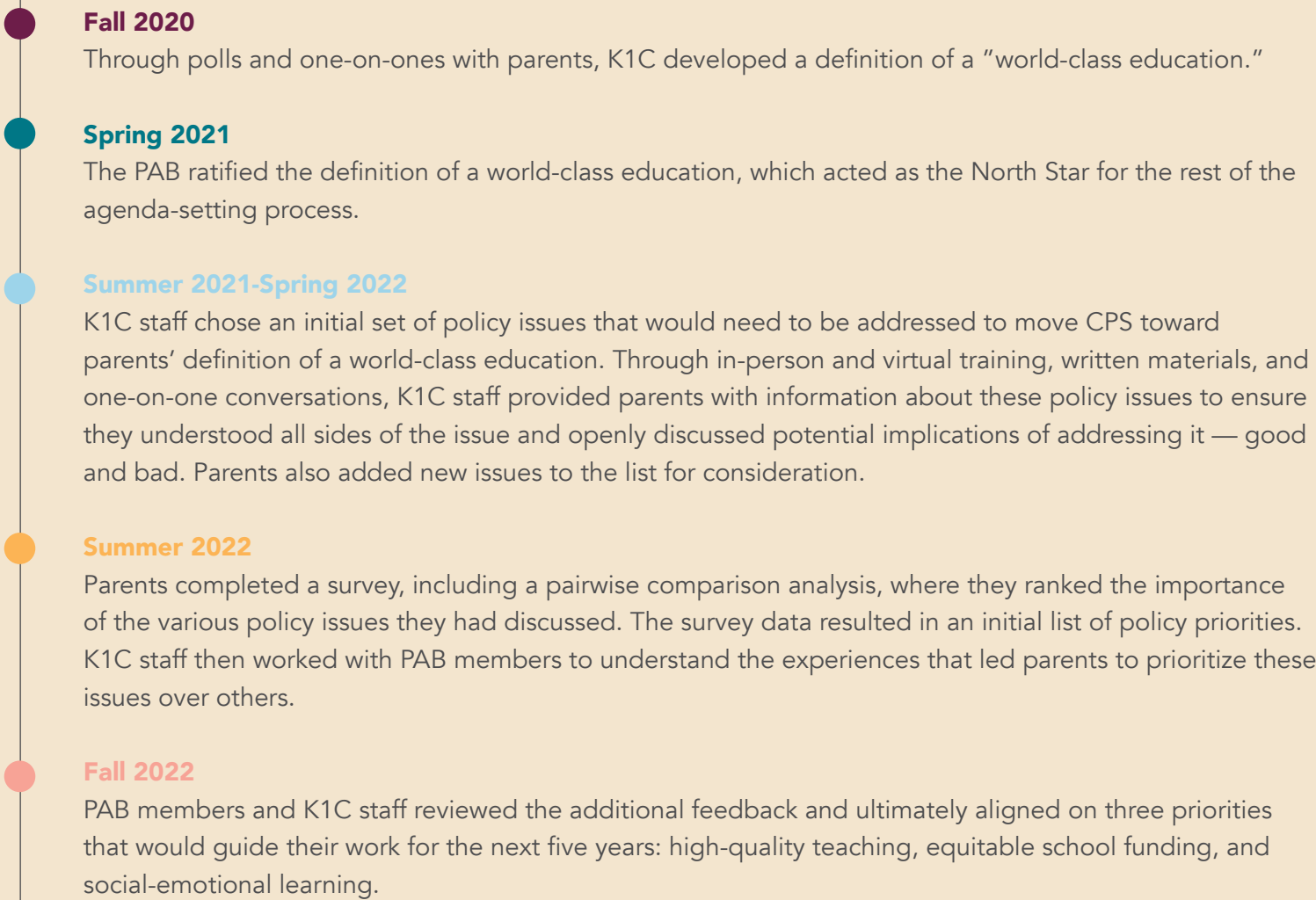
#### AUTHORS

Krista Kaput  
Kelly Robson Foster  
Alex Cortez

JANUARY 2023

## A systematic approach to understanding what families want and need ensures parents are driving the agenda.

FIGURE 1: K1C’S MOST RECENT AGENDA-SETTING PROCESS





**TIMELINE**  
Chronological

**Common Ground: How Public K-12 Schools  
Are Navigating Pandemic Disruptions and  
Political Trends**

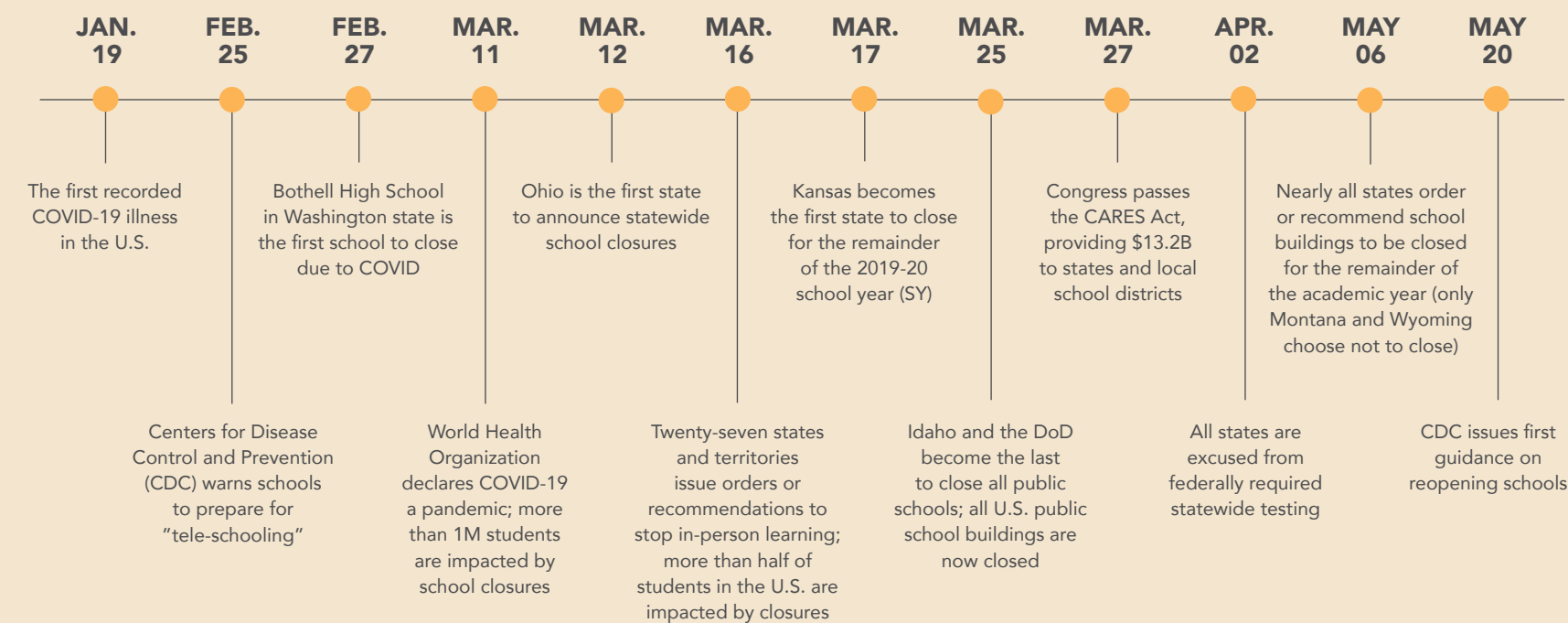
**AUTHORS**

Andrew J. Rotherham  
Kelly Robson Foster  
Michael D. Corral

JANUARY 2023

The U.S. recorded its first COVID-19 case in January 2020; by late March, nearly all public schools were closed to in-person learning.

**Timeline of COVID-Related Public School Closures in the U.S.**  
*January to May 2020*



**Sources:** EdWeek, "Forever Changed: A Timeline of How COVID Upended Schools," 2022; AJMC, "A Timeline of COVID-19 Developments in 2020," 2021; EdWeek, "The Coronavirus Spring: The Historic Closing of U.S. Schools (A Timeline)," 2020.



## TIMELINE

### Descriptive

**Common Ground: How Public K-12 Schools Are Navigating Pandemic Disruptions and Political Trends**

### AUTHORS

Andrew J. Rotherham  
Kelly Robson Foster  
Michael D. Corral

JANUARY 2023

## A toxic blend of political opportunism, ideology, and sloppy implementation of DEI work fueled a conservative backlash.

**Conservative Activists Push Back on DEI Initiatives in Public Sector Agencies**  
*May to August 2020*

- Uptick in DEI and other social justice-focused initiatives begin to take place in public agencies and other public business industries.
- Chris Rufo, senior fellow at conservative think tank Manhattan Institute, begins attack on DEI and social justice trainings with article titled “Cult Programming in Seattle.”
- Rufo follows his initial article with a piece titled “White Fragility Comes to Washington” and begins talking openly and consistently about “critical race theory.”

**Sources:** City Journal, “*Cult Programming in Seattle*,” 2020; BBC News, “*George Floyd: Why Are Companies Speaking Up This Time?*,” 2020; City Journal, “*‘White Fragility’ Comes to Washington*,” 2020.

# Beta by Bellwether Gallery

**Beta by Bellwether is a sub-brand — with design and data viz elements that differentiate it from Bellwether’s brand.**

The Beta by Bellwether Gallery is a design and visual reference for some data viz in the Beta sub-brand. Its color palette should be the default.

Each figure was pulled from existing field-facing Beta publications and may have been visually tweaked for the purposes of this Data Visualization Brand Guide. Like the Bellwether gallery, the Beta gallery is visual guidance and inspiration for design, color, and overall formatting. It is *not* a working template for team use.

**Area Graph**

**Bar Chart**

**Bubble**

**Donut**

**Line Graph**

**Lollipop**



## AREA GRAPH

Stacked

A History of Public Education and the  
Assembly of Services

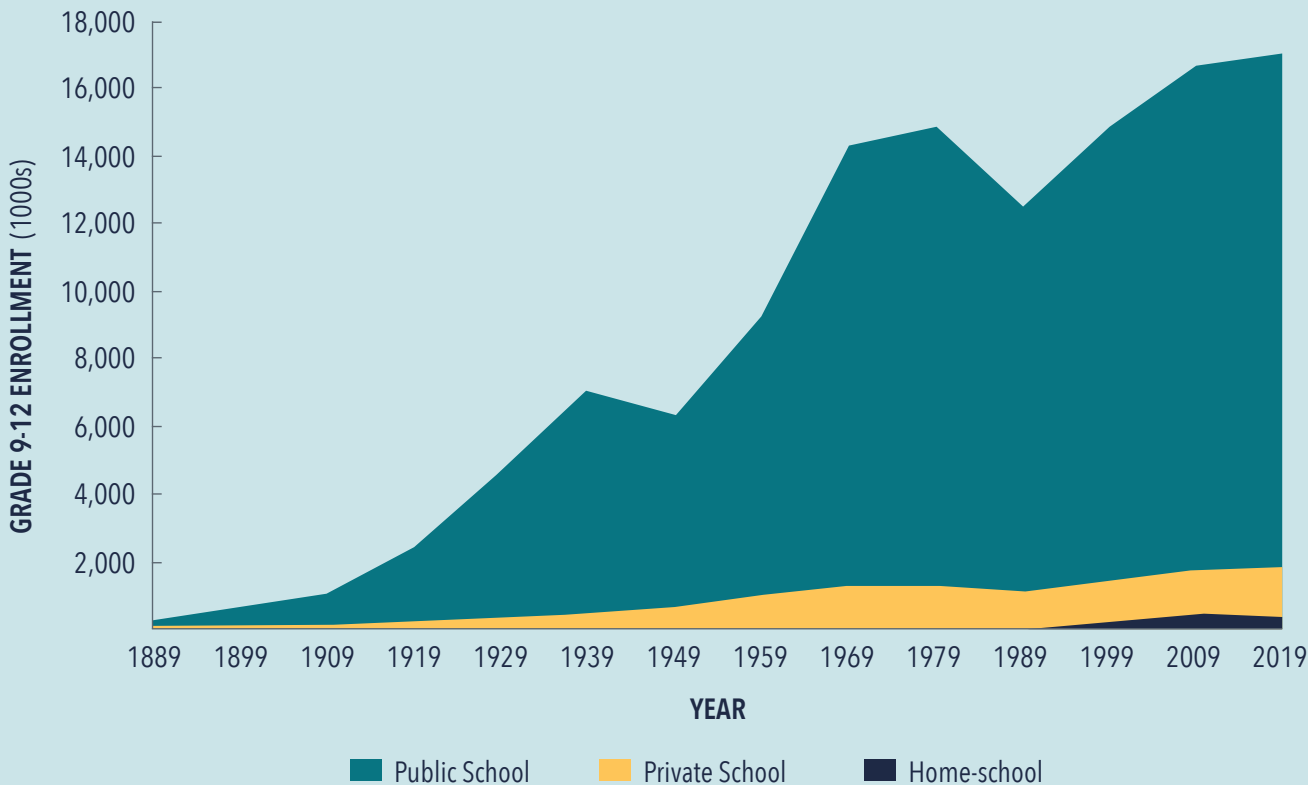
### AUTHORS

Lynne Graziano  
Alex Spurrier  
Juliet Squire

AUGUST 2022

As far back as national enrollment data is available, some families have enrolled their children in private rather than public schools, and about one in 10 families continues to do so.

Figure 2: Grade 9-12 Public and Private School Enrollment Since 1889



Source: [National Center for Education Statistics, "Table 201.20."](#)

[National Center for Education Statistics, "Table 206.10."](#)



# BAR CHART

Vertical

Some Assembly Required: How a More Flexible Learning Ecosystem Can Better Serve All Kids and Unlock Innovation

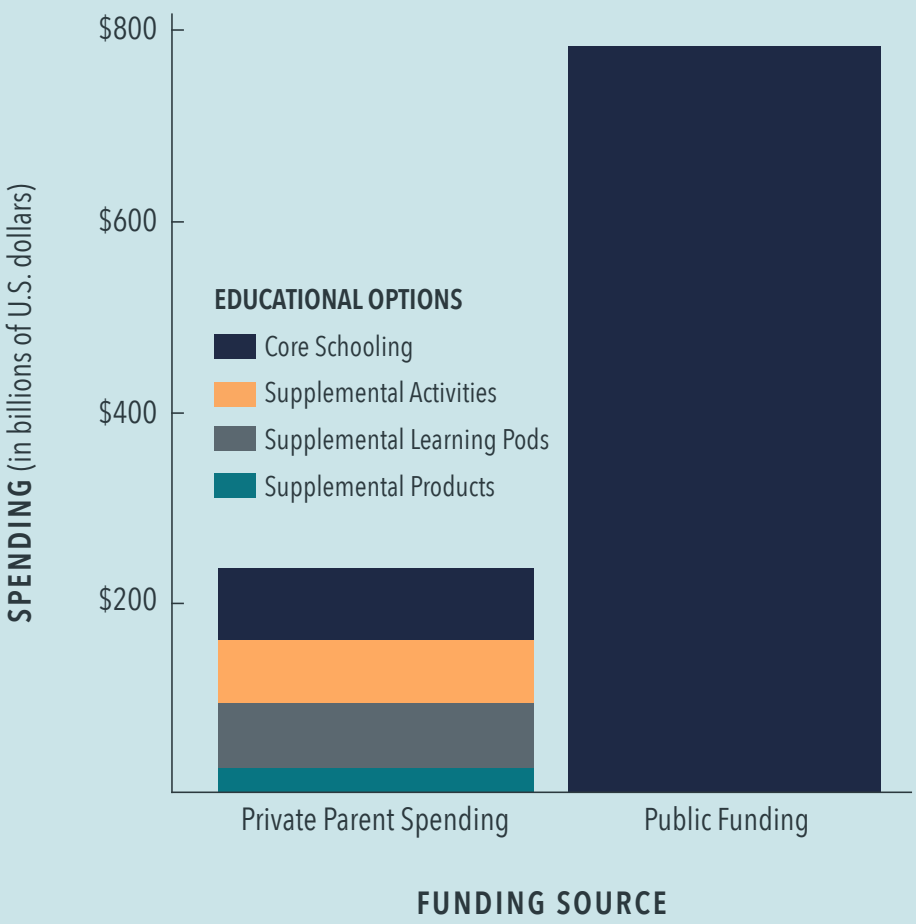
## AUTHORS

Juliet Squire  
Alex Spurrier

AUGUST 2022

Families’ private spending on core education, supplemental activities, and supplemental materials was about \$232 billion in fall 2020 — equal to about 30% of the \$794 billion spent on the entirety of public K-12 education during the 2019-20 school year.

Figure 2: Comparison of Public and Parent Spending on K-12 Education







**BUBBLE**  
Categories

**Dollars and Sense: Measuring the Value of  
Postsecondary Pathways**

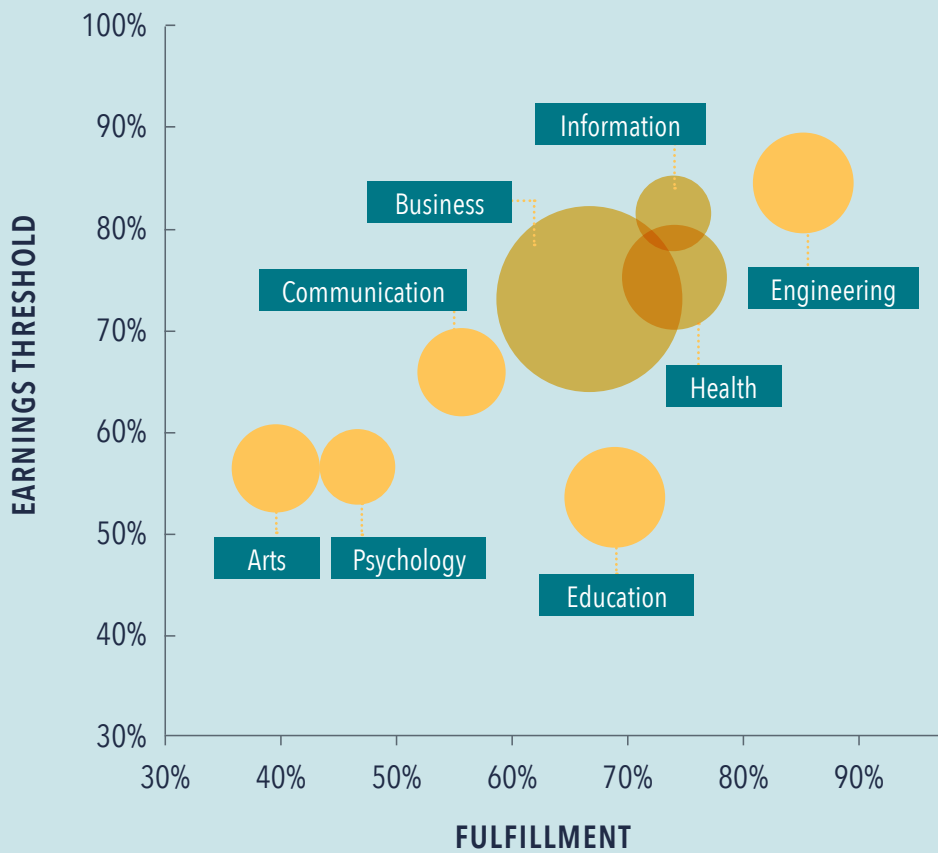
**AUTHORS**

Alex Cortez  
Lynne Graziano  
Paul Beach

APRIL 2023

**Strada’s research also found that fulfillment — and economic value —  
differed by bachelor’s degree major.**

*Figure 6: Outcomes By (Bachelor’s Degree) Major*



Source: [Success Beyond Completion webinar, July 2022, Strada](#)



**DONUT**  
Categories

**Dollars and Sense: Measuring the Value of Postsecondary Pathways**

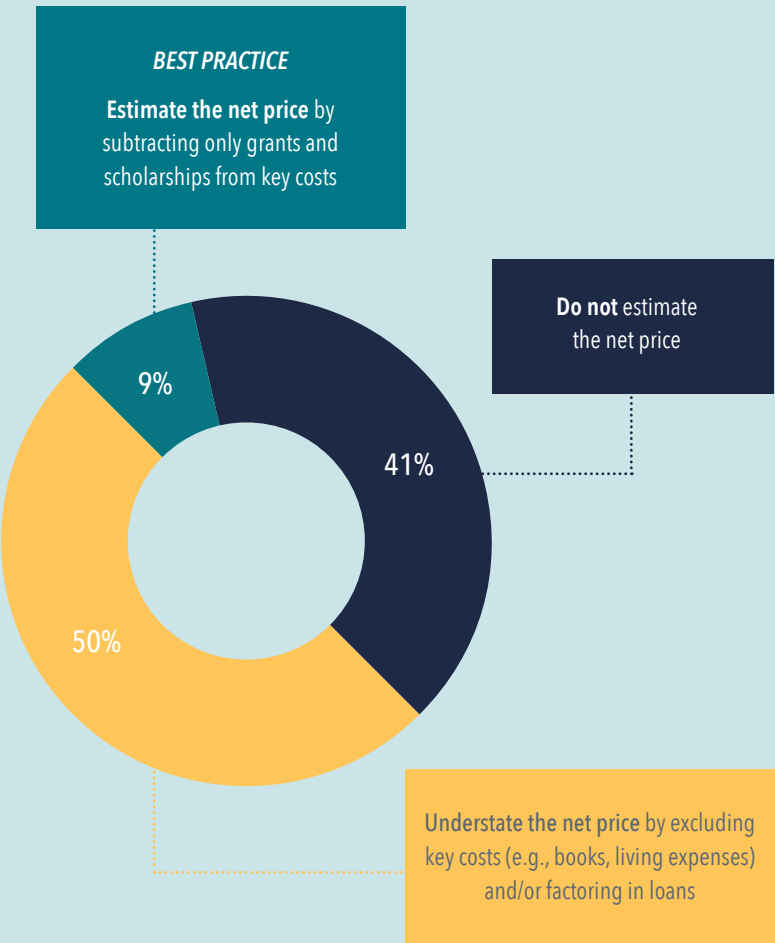
**AUTHORS**

Alex Cortez  
Lynne Graziano  
Paul Beach

APRIL 2023

A similar November 2022 report from the U.S. Government Accountability Office noted that of the 522 financial aid award letters it reviewed from 176 institutions, 41% did not include an estimate of the net cost (or price) and 50% understated this cost by excluding key costs like books and living expenses. Only 9% were estimated to have included the most accurate net price.

*Figure 4: Estimated Extent Colleges Follow Best Practice To Inform Students How Much They Will Need To Pay (the Net Price) in Financial Aid Offers*



Source: [Financial Aid Offers 2022](#), Government Accountability Office



## LINE GRAPH

### Comparison

**An Investment, Not a Gamble: Creating More Equitable and Effective Postsecondary Pathways**

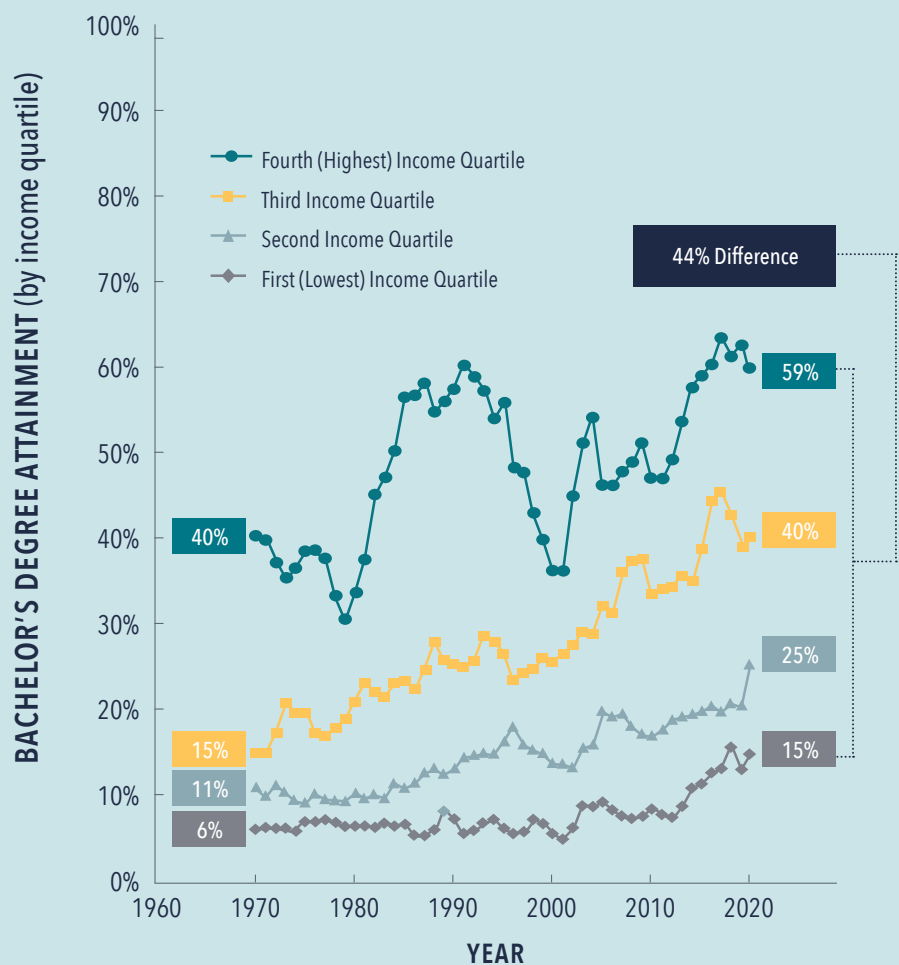
### AUTHORS

Alex Cortez  
Paul Beach  
Nick Lee  
Lynne Graziano  
Brian Robinson  
Kateland Beals

APRIL 2023

The disparities become even more acute when looking at bachelor's degree completion, with 59% from the top quartile completing a bachelor's degree by age 24, compared to only 15% for the lowest quartile.

Figure 4: U.S. Bachelor's Degree Attainment By Income, 1970-2020



Source: Margaret W. Cahalan et al., 2022 Equity Indicators Report, Pell Institute. Note: for dependent students by age 24



# LOLLIPOP

## Comparison

**An Investment, Not a Gamble: Creating More Equitable and Effective Postsecondary Pathways**

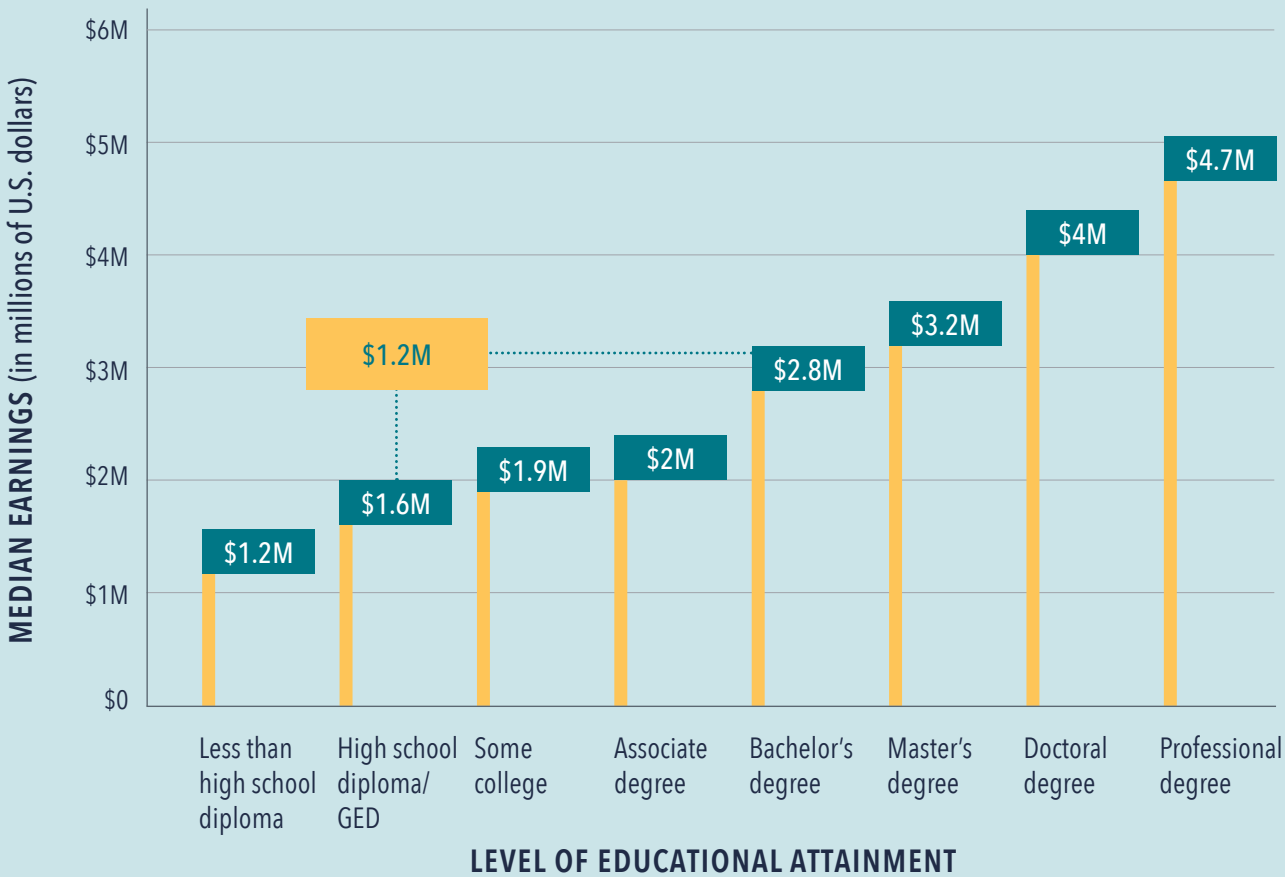
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Education leaders, families, and students operate on the assumption that a conventional higher education degree — in particular, a four-year bachelor’s degree — is the key to unlocking economic mobility.

Figure 2: Median Individual Lifetime Earnings Increase By Educational Attainment in U.S.



Source: Anthony P. Carnevale, Ban Cheah, and Emma Wenzinger, "The College Payoff," Georgetown University Center on Education and the Workforce (CEW), 2021.



# Endnotes

- 1 "What Is Data Visualization?," IBM, <https://www.ibm.com/topics/data-visualization>.
- 2 "Urban Institute Data Visualization Style Guide," Urban Institute, <https://urbaninstitute.github.io/graphics-styleguide/>.
- 3 Stephanie Evergreen, "Presenting Data Effectively" (workshop packet), Evergreen Data, 2019, <https://stephanieevergreen.com/wp-content/uploads/2019/06/EvergreenDataWorkshopPacket.pdf>.
- 4 "Building a Culture of Effective Data Visualization," Evergreen Data, 2024, <https://stephanieevergreen.com/culture/>.
- 5 Cameron Chapman, "Breaking Down the Principles of Design (with Infographic)," Toptal, <https://www.toptal.com/designers/gui/principles-of-design-infographic>.
- 6 Evergreen, "Presenting Data Effectively."
- 7 Jonathan Schwabish and Alice Feng, "Applying Racial Equity Awareness in Data Visualization," The Urban Institute, Medium, September 3, 2020, <https://urban-institute.medium.com/applying-racial-equity-awareness-in-data-visualization-bd359bf7a7ff>.
- 8 "The AP Stylebook," The Associated Press, <https://www.apstylebook.com/>.



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