



# Analyzing Your Study Data Guide

A research guide from Project Tomorrow®



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The purpose of this guide is to help school and district leaders understand how to analyze and interpret quantitative data collected as part of your replication of the **K-12 DIGITAL CURRICULUM EFFICACY STUDY** with multiple schools. Project Tomorrow, a national education nonprofit organization, designed and implemented the original efficacy study in collaboration with Gale. This guide provides an easy to use, step-by-step process for connecting the outputs from your collected data to your study goals. If you have any questions about this guide or how to effectively replicate this study, please contact us at [research@tomorrow.org](mailto:research@tomorrow.org).

In this guide, we are assuming that you have used the Project Tomorrow sample surveys to collect two sets of feedback data from your students and teachers. Your first set of data (data set #1) should be the feedback you collected from students and teachers prior to the start of the student research project. We call that data set #1 your pre-survey data. The second set of data (data set #2) is the feedback you collected after the student research project was completed and submitted for teacher evaluation or grading. We call that data set #2 your post-survey data. If you did not use the Project Tomorrow sample surveys, you can still use this guide to help you with your data analysis.

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### Step-by-Step Study Data Guide

**Step 1:** To get started, align the survey questions to the outcomes you identified as most important when you first decided to do this efficacy study. Which questions on the surveys (and the resulting data) will help you realize if the use of the Gale databases has helped you achieve those outcomes? Here are some sample outcomes that you have may identified and their alignment to specific survey questions on the student and teacher surveys. The question numbers here are from the post surveys.

Desired outcomes	Alignment to student questions on the post survey	Alignment to teacher questions on the post survey
IMPROVED QUALITY OF STUDENT RESEARCH ASSIGNMENT OUTPUTS	14, 17 (some response options)	15 (some response options)
IMPROVED STUDENT RESEARCH SKILLS	6, 9, 11	15 (some response options), 16
ENHANCED STUDENT UNDERSTANDING OF COURSE CONTENT	17 (some response options)	15 (some response options)
ENHANCED TEACHER EFFECTIVENESS WITH USING		9, 10, 15 (some response options), 18



ONLINE DATABASES TO SUPPORT STUDENT RESEARCH PROJECTS		
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**Step 2:** The key with this step and Step 3 is to organize your data for effective comparative data analysis between the pre-survey data (data set #1) and the post-survey data (data set #2). First, identify the questions on the pre-survey and post-survey for students that mirror each other. For example:

Student pre-survey question #7:  
  
How would you rate your current abilities to do academic research and prepare research-based reports and presentations?

Student post-survey question #6:  
  
How would you rate your current abilities to do academic research and prepare research-based reports and presentations?

As you can see, the questions are the same on the pre-survey and the post-survey. Analyzing data from both of these questions will help you understand the impact of using the Gale databases on students’ self-assessment of their research skills, for example. Flag all of the companion questions on the surveys that can provide you with this type of comparative data.

Do the same for your teacher questions as well.

**Step 3:** Now, build a spreadsheet with the both the pre-survey and post-survey data side-by-side for each aligned question on the student and teacher surveys that are appropriate for your study goals or desired outcomes. For both students and teachers, you will be using aggregated data (percentages of respondents who chose the various question response options) from all of your students or teachers who were included in this study. As an alternative, you could look at each school in your study group individually if you identified the students or teachers by school.

Here is an example of what that spreadsheet might look like for the sample question from Step 2:

Column1	Column2	Column3
Student survey question and potential response options:		
How would you rate your current abilities to do academic research and prepare research-based reports and presentations?	Aggregated pre-survey data (Q7) - % of students who chose this response	Aggregated post-survey data (Q6) - % of students who chose this response



Beginner - I have a lot to learn about those skills yet	20%	10%
Average - My skills are comparable with my classmates	60%	50%
Advanced - I have better skills than most of my classmates	20%	40%

**Step 4:** We are now ready to examine the data and look for evidence to understand how the use of the Gale databases supports your desired outcomes. Using the spreadsheet you have built, compare the pre-survey data with the post-survey data and note your observations on the spreadsheet. Your notes should include answers to questions like this:

- Did the percentage of students or teachers for each question response option increase, decrease or stay the same?
- Do you think the percentage of change significant? Since this is a simple analysis, you can estimate if you think the change is significant or not. For a more sophisticated analysis, there are analytical tools that will help do that significance testing for you. Please contact us if you would like more information on how to do that testing.
- Does this data support the premise that the use of the Gale databases had a desired impact on your students or teachers?

Using the same example as from Step 3, see the sample observational notes we have added to the spreadsheet. Note that this question on the student survey is aligned with the desired outcome: IMPROVED STUDENT RESEARCH SKILLS

Column1	Column2	Column3	Column4
Student survey question and potential response options:			
How would you rate your current abilities to do academic research and prepare research-based reports and presentations?	Aggregated pre-survey data (Q7) - % of students who chose this response	Aggregated post-survey data (Q6) - % of students who chose this response	Observational notes on the analysis of the comparative data
Beginner - I have a lot to learn about those skills yet	20%	10%	The percentage of students who said their skills were at



			the beginner level decreased by 10 percentage points in the post survey.
Average - My skills are comparable with my classmates	60%	50%	The percentage of students who said their skills were at the beginner level decreased by 10 percentage points in the post survey.
			The percentage of students who said their skills were at the beginner level increased by 20 percentage points in the post survey.
			This appears to be a significant increase in students assessing their skills as advanced.
Advanced - I have better skills than most of my classmates	20%	40%	While many factors may help contribute to this result, I think the use of the Gale databases helped to increase students' research skills, one of our desired outcomes.

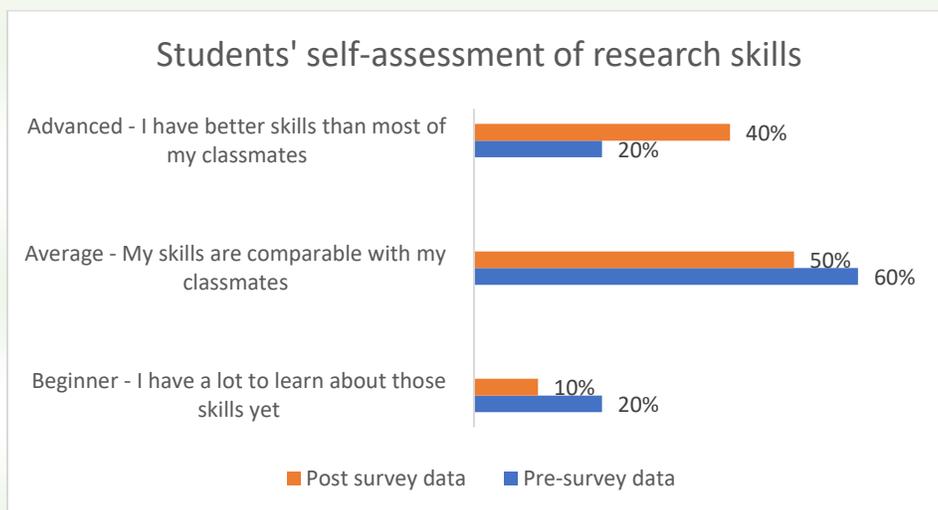
Utilizing this same methodology, examine all of the comparative pre and post survey data from your identified questions on the student and teacher surveys. Write notes about each data examination answering similar questions as posed above. Some of the questions on the surveys such as question 11 on the student post survey and question 15 on the teacher post survey have a range of agreement variables (e.g.; very uncomfortable, somewhat uncomfortable, somewhat comfortable, very comfortable). You can do the analysis the same way as described above. For those questions, look carefully at the percentage of students or teachers who moved into a positive response from a non-positive response.

**Step 5:** It is now time to report on your data analysis. Review your observations notes and decide which data findings you would like to report on in a findings document. Focus that determination on the study outcome(s) that you identified prior to starting the study. Depending upon the audience for your study findings document, you may want to include charts or graphs that can illustrate a narrative point that you want to make. Again, using the same theme as depicted in the examples used in steps 2-4, here is an example of how the study findings could be structured to share with desired audiences.

*Desired outcome for the Gale Efficacy Study: IMPROVED STUDENT RESEARCH SKILLS*

*In spring 2022, 10 world history teachers in four of our high schools agreed to participate in a special efficacy study to see if the use of the Gale databases within student projects could improve students’ overall research skills. The teachers each assigned their students to do a research project about a current global social issue that had historical roots in a prior military conflict or war. The students were instructed to use at least one of the Gale in Context databases as a source for their research paper and presentation. Prior to beginning the research project, the students (500 in total) completed a pre-survey about their current research skills. Our teachers also completed a pre-survey as well. Upon completion of the student projects, both students and teachers then took a post-survey about their experiences using the Gale databases within this project. The library team analyzed the pre and post survey data from students and teachers to see if we could find evidence or results that supported our desired outcome to improve students’ research skills. Three key findings emerged from this analysis:*

1. *The percentage of students who now say that their research skills are advanced compared to their peers doubled from 20% to 40% of the students.*



2. *46% more students in the post survey compared to the pre survey said they were comfortable doing the following specific research tasks after using the Gale databases within their research project:*
  - i. *Evaluating the accuracy and relevancy of resources*
  - ii. *Understanding a variety of different perspectives*



- iii. *Using online resources and databases for research*
- iv. *Preparing written reports or verbal reports on my research*

3. All 10 of our study cohort teachers agreed with the following statements about the impact of the Gale databases on their students' research skill development:

Student outcomes as a result of using the Gale databases	% of teachers who agree with these outcomes		
	Somewhat agree	Strongly agree	Total of agreement
My students know how to research, evaluate and synthesize information to formulate an opinion on a topic.	25%	75%	100%
My students understand how to process information in a global context.		100%	100%
My students are prepared to use similar online databases in college	50%	50%	100%

We hope that this research guide from Project Tomorrow, Analyzing Your Study Data Guide, is a helpful tool for you. If you need additional support for your efficacy study, please contact us at [research@tomorrow.org](mailto:research@tomorrow.org).