



# Intervention Effectiveness

Toolkit

# Guide to Intervention Effectiveness Toolkit

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## Overview:

This toolkit is designed to help members use the Intervention Effectiveness tool and understand the outcomes of student success initiatives and interventions. It provides resources and tools to help users:

- Decide where to start looking within the analyses in Intervention Effectiveness to evaluate the outcomes of their interventions
- Generate high-impact insights through responsible interpretation
- Understand potential actions and next steps based on data analysis

## Types of tools provided:

Instructions, report-specific resource guides, worksheets

## Tool contents and intended audience:

This toolkit is intended for any user with access to Intervention Effectiveness within Navigate Intelligence. Exact users will depend on institution-specific permissions settings, but often include central academic administrators, deans, department chairs, and advising directors. **Note:** we cannot currently restrict access to information in our Analytics offerings at a granular level – permissions for each tool grant access to all data in that tool.

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# Context of Intervention Effectiveness Tool

## Evolution of Navigate Intelligence

Institutions have begun to embrace the power of data to inform decision-making for student success. Historically, many of the Navigate Intelligence offerings have focused on how to identify students in need of interventions by surfacing forms of student risk normally invisible to faculty and staff. With the addition of the Intervention Effectiveness tools members with the Navigate Intelligence module can move to the next level of data-informed decision making and evaluate the impact of their interventions on identified students, completing the circle below.

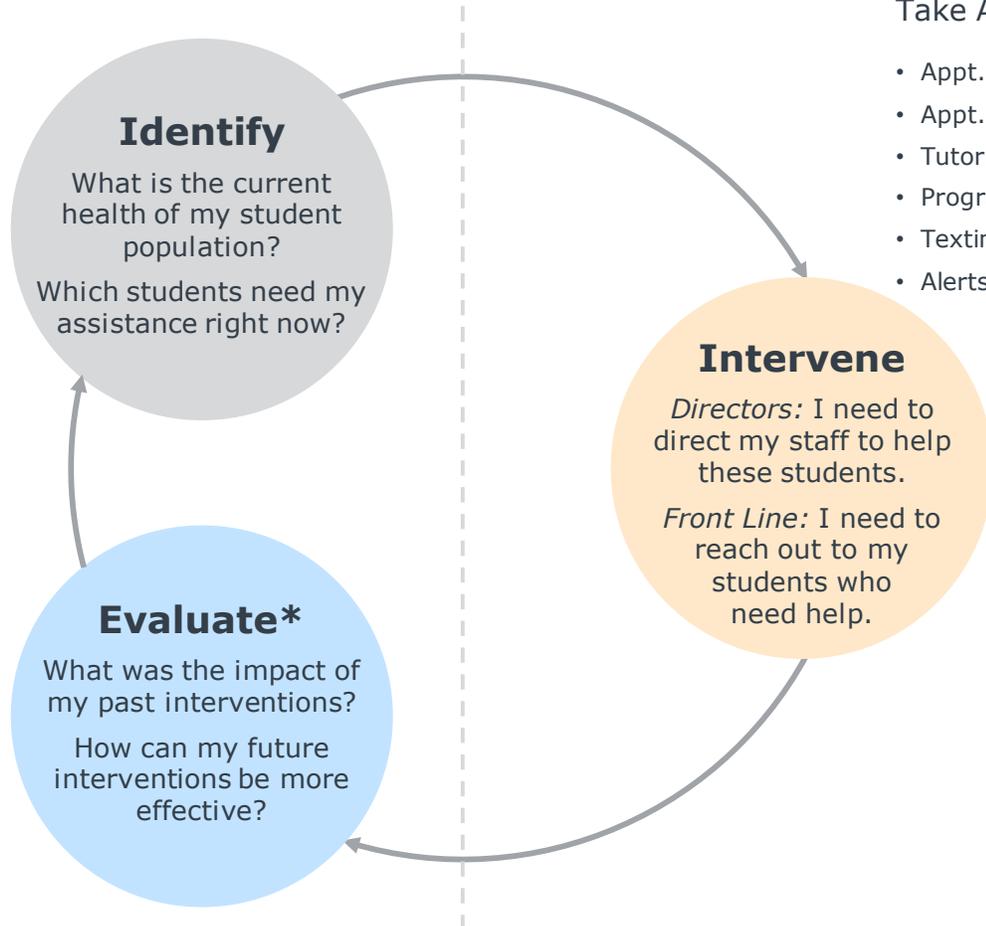
Using Navigate Intelligence tools, users can:

- Identify students in need of interventions
- Understand the historical context of the likely outcomes for students without interventions
- Determine how faculty and staff are progressing in initiatives and interventions (process metrics)
- Evaluate the impact of the interventions conducted in or outside of Navigate (outcome metrics)\*

### Intelligence Answer Questions

- Predictive Model
- Institution Reports
- Advanced Search
- In-Platform Reports
- Population Health
- Success Markers

- Intervention Effectiveness\*
- Reports
- Activity Analytics



### Strategic Care Take Action

- Appt. Campaigns
- Appt. Scheduling
- Tutoring
- Progress Reports
- Texting
- Alerts/Cases

\*New capabilities in the Navigate platform

# Guidance for Meaningful Interventions & Evaluations

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## Asking and Answering Questions that Matter

Before diving into instructions on how to use Intervention Effectiveness, we should examine why we choose to evaluate the impact of our interventions and initiatives. There are many reasons that institutions may decide to evaluate, but the one of the most important is to ensure that we are doing the most effective work possible, given limited resources.

At our institutions, we may ask “How do we ensure that the initiatives and interventions that we have put time, effort, and money into are effective? Once we are able to measure effectiveness, how do we ensure that we are scaling the most effective interventions and programs to impact a greater number of students?”

These questions help us to determine which interventions are most effective, and allow us to scale those programs to reach the greatest number of students.

## How to Use Intervention Effectiveness to Answer Your Questions

### Do this:

-  Prior to using this tool, investigate institutional data or data from Population Health, Advanced Search, the Predictive Model, Early Alerts, or other areas of Navigate to define a population to intervene with.
-  Follow best practice research (e.g., [Breaking Through the Student Communications Barrier](#)) when designing and conducting interventions or rolling out initiatives.
-  Ensure that your intervention has a clear comparison group, whenever possible. Comparison groups are vital for understanding if your intervention is what caused the change in outcomes for your intervention population.
-  Determine the metrics you wish to measure based on your theory of change. For example, if you conducted a registration campaign, you might select enrollment in the next term as your metric. If you referred students to tutoring, you might expect a change in term or cumulative GPA.

### Don't do this:

-  Use this tool to search for populations that have experienced some kind of positive or negative change and then try to build a story retroactively (this is also known as data dredging, or p-hacking).
-  Stop evaluating or iterating on your intervention if you don't see positive results from your first attempt at rolling out your intervention or program; instead, consider what could be changed, or what other context may have led to your result.
-  Use the Intervention Effectiveness tool to look at outcomes for future terms, unless your outcome metric of interest is enrollment in an upcoming term.

# Home Page Navigation

## Getting to the Right Place

**To Access Intervention Effectiveness:** Log into the Navigate platform and click the Analytics icon in the left-hand side bar. Once you have navigated to the Analytics landing page, select “Intervention Effectiveness” in the “Population Health Analytics” section of the page. The link will open the Intervention Effectiveness landing page the first time you open it, and after the first time, will open the last report anyone at your institution used.

## Analytics

The screenshot shows the 'Analytics' page with a section titled 'Population Health Analytics'. Below the title is a description: 'Assess the health of selected student populations and identify intervention opportunities using key academic performance metrics like GPA and credit completion.' There are three links listed: 'Population Health Dashboards', 'Risk by College & Program (formerly Institution Analytics)', and 'Intervention Effectiveness'. A blue callout box with a line pointing to the 'Intervention Effectiveness' link contains the text: 'Select the Intervention Effectiveness link to access the tool'.

**Choosing a Report:** Once you have logged into Intervention Effectiveness, you should start on the page labeled “Start Here”, where you can learn more about each report. From there, you can select any of the three reports (One Population; Two Populations, One Time Period; Two Populations, Two Time Periods).

The screenshot shows a horizontal menu with four options: 'Start Here', 'One Population', 'Two Populations, One Time Period', and 'Two Populations, Two Time Periods'. A blue callout box with a line pointing to the 'Start Here' option contains the text: 'This introduction page provides an overview of the resources within Intervention Effectiveness'. Another blue callout box with a line pointing to the 'Two Populations, One Time Period' option contains the text: 'Choose the appropriate report to analyze the results of your intervention'.

**Refine Your Analysis:** To narrow the population of students in the reports, select the appropriate filters within each report. In addition, you can refine the historical timeframe for the analysis by choosing the appropriate terms in the drop downs. By default, the report will pull for all enrolled at the institution in the selected start term who had not yet graduated by the time of that start term.

Use the Report Navigation information on page 6 to learn more about the filters available to refine your analysis, and the Comparison Population information on page 11 to determine which report you should select for your analysis.

# Intervention Effectiveness Report Navigation

## Finding Your Way Around the Filters and Analyses

Each report is structured in a similar format: at the top, users can filter the analysis by drop down choices, below the filters data is populated in Summary Tables, and the bottom of the page includes line graphs detailing changes over time to key data points. The reports differ in terms of which populations or time periods are included.

### Breaking Down the Report Structure

**Time Period**

ENROLLED IN START TERM: Fall Semester 2015

ENROLLED IN END TERM: Fall Semester 2016

**Intervention Information**

APPT. CAMPAIGN: All

CAMPAIGN APPT. STATUS: All

WATCH LIST: All

**Current Student Information**

TAG: All

CATEGORY: All

**Student Information as of the End of the Start Term**

DEGREE IN THE START TERM: All

CLASSIFICATION IN THE START TERM: All

COLLEGE IN THE START TERM: College of Arts & Sciences

MAJOR IN THE START TERM: All

CUM GPA BUCKET(S) IN THE START TERM: All

**Time Period**

- Define the population of students in the analysis, and the period over which you will see changes. The start term will be compared to the end term.

**Interventions**

- Use Campaign and Watch List filters to define a group of students based on their inclusion/participation in a campaign, or their status on a Watch List. Watch Lists are a powerful tool to view information about any list of students by ID.

**Current Filters compared to End of Start Term Filters**

- Category and Tag filters show students who are currently in those categories or tags. **Note:** Categories exclude Inactive students.
- Classification/Major is the classification or major at the **end** of the selected start term – e.g., if a student majored in Biology, then switched majors twice, and ended in History at the end of the Start Term, they would only appear in the analysis if you selected History majors in that term.

Enrollment Summary	Start Term Fall Semester 2015	End Term Fall Semester 2016	Percent of the Start Term
Enrolled	8,622	7,845	91.0%
Graduated	—	267	3.1%
Not Enrolled	—	510	5.9%

View Term Persistence of Start Term Population: [Count](#) | [Percentage](#)

Performance Summary	Start Term Fall Semester 2015	End Term Fall Semester 2016	Percent Change
Average Cumulative GPA	2.99	3.00	+0.3%
Average Term GPA	2.90	2.89	-0.3%

### Enrollment, Performance, and Progress Summary Tables

- Because only enrolled students who have not yet graduated are included in the Start Term, data for Graduated and Not Enrolled will never populate for the Start Term.
- Click into any blue text to obtain a drill-in report with individual student data.
- Export aggregated data into a CSV file from the drill-in by clicking the three buttons above the drill-in and selecting "Download as CSV".
- Click into the Term Persistence links to see persistence data for each term between the Start and End terms.

### Differences in Filters between the Reports:

The primary difference between filters and outputs in the reports you can select in the top navigation bar is the number of populations or time periods you can select in each report. These differences will change how the reports look, but the filters you can select from in each report are the same.

For detailed definitions of each data point, please refer to the [Glossary](#)

# Reports Navigation

## Enrollment, Performance, and Progress Summary Tables

The summary tables for Enrollment, Performance, and Progress are the same in all three reports, with the exception that they show different numbers of populations and time periods. This example shows the summary tables for the Two Populations, One Time Period Report.

<b>Enrollment Summary</b>	Start Term	End Term	Percent of the Start Term
	Fall Semester 2015	Summer Semester 2016	
A: Enrolled	8,622	3,258	37.8%
B: Enrolled	5,245	2,359	45.0%
A: Graduated	—	232	2.7%
B: Graduated	—	121	2.3%
A: Not Enrolled	—	5,132	59.5%
B: Not Enrolled	—	2,765	52.7%

Metrics that measure student enrollment, persistence, and graduation

Graduated and Not Enrolled will always be blank in the start term

View Term Persistence of Start Term Population A: [Count](#) | [Percentage](#)

View Term Persistence of Start Term Population B: [Count](#) | [Percentage](#)

Click any of the links to get persistence data for each term between your start and end terms

<b>Performance Summary</b>	Start Term	End Term	Percent Change
	Fall Semester 2015	Summer Semester 2016	
A: Average Cumulative GPA	2.99	3.06	+2.3%
B: Average Cumulative GPA	3.03	3.11	+2.6%
A: Average Term GPA	2.90	3.07	+5.9%
B: Average Term GPA	2.95	3.14	+6.4%

Metrics that measure student performance (e.g., term and cumulative GPA)

<b>Progress Summary</b>	Start Term	End Term	Percent Change
	Fall Semester 2015	Summer Semester 2016	
A: Average Attempted Credits by Term	12.55	6.23	-50.4%
B: Average Attempted Credits by Term	12.56	6.54	-47.9%
A: Average Earned Credits by Term	11.17	5.60	-49.9%
B: Average Earned Credits by Term	11.43	6.14	-46.3%
A: Average Credit Completion Percentage	88.4%	88.4%	0.00
B: Average Credit Completion Percentage	89.9%	90.5%	+0.6%

Metrics that measure student progress toward a degree (e.g., credits)

Choose similar start and end terms for your analysis; students typically take fewer credits in Summer than in Fall

# Reports Navigation

The End Term Cumulative GPA Outcomes table is the same in all three reports, with the exception that it shows different numbers of populations depending on which report you select. This example shows the summary table and drill-in for the Two Populations, Two Time Periods Report.

## End Term Cumulative GPA Outcomes

	Population A		Population B	
Students in End Term with Cumulative GPA Improved	168	50.6%	75	16.2%
Students in End Term with Cumulative GPA Not Changed	6	1.8%	318	68.8%
Students in End Term with Cumulative GPA Declined	158	47.6%	69	14.9%

[Click to View Distribution of Average Cumulative GPA](#)

Click this link to view the table below

Click any blue number to get a list of students in that population

### Drill-In Data | **Two Populations, Two Time Periods**

For best results when using this drill-in, use the filters to select a single Cumulative GPA bucket (e.g., 2.2-2.39) for each population. This will allow you to see the end term distribution of GPAs from a single starting point and learn more than you can from the average (mean) start and end term GPA for that population.

Distribution of Average Cumul... » Drill-in Distribution of Avg ... 

Cum GPA Bucket	A Students in Start Term	A Students in End Term	B Students in Start Term	B Students in End Term
0.00	0	0	0	6
0.01-1.99	0	53	0	4
2.0-2.19	0	57	0	15
2.2-2.39	409	98	0	28
2.4-2.59	0	74	691	353
2.6-2.79	0	37	0	39
2.8-2.99	0	8	0	11
3.0-3.19	0	4	0	5
3.2-3.39	0	0	0	1
3.4-3.59	0	0	0	0
3.6-3.79	0	1	0	0
3.8-3.99	0	0	0	0
>=4.0	0	0	0	0

The GPA buckets chosen for this report correspond to the GPA buckets in Institution Reports, so that users can benchmark data in Intervention Effectiveness against their institution's historical trends

# Tool Overview and Use Cases

## ▶ Tool Overview

With three separate types of reports, multiple outputs, and a variety of filters, Intervention Effectiveness offers so many possible analyses that figuring out where to start can be a challenge.

Some members look specifically at populations of students they intervened with and evaluate the changes to those populations of students over time. Others may look at the changes to outcomes for student populations based on broader changes that were not aimed at a specific group of students (e.g., rolling out a tool like Navigate Student Mobile to all students at a particular point in time).

For those looking for best practices, the following suggestions represent the collective experience of the Navigate Member Success team, and where they have seen members most often focus their energy and find success. If you're looking to narrow your search to areas with proven potential, then start with these.

## REPORT | **One Population**

1

### **15 to Finish Campaigns**

"15 to Finish" has become a common mantra at many institutions. When most institutions examine their historical student data, they find that students who attempt and earn a minimum number of credits in the first year have higher overall graduation rates than their peers who do not meet those minimum thresholds. Members then design policies, advice, and interventions around these patterns of success.



#### **How to Look for Outcomes of these Campaigns:**

- Open the "One Population" report and use the filters to select a population with whom you have completed 15 to Finish outreach or a 15 to Finish campaign. Select as the Start Term the term before you conducted the outreach or intervention, and an end term at least one term later (e.g., Fall 2017 and Spring 2018). You can then determine the average credits earned and attempted by your selected population the term before the intervention, the term of the intervention, and the term afterward.

## REPORT | **Two Populations, One Time Period**

2

### **Persistence by Campaign Appointment Attendance**

Registration Campaigns are one of the most popular types of campaigns across the Student Success Collaborative. These campaigns ask students to meet with an advisor to ensure they will register for the upcoming term. Institutions deploying this type of intervention may wish to determine whether students who completed a campaign appointment registered for the next term at a higher rate than students sent the campaign who did not schedule an appointment.



#### **How to Look for Outcomes of these Campaigns:**

- Open the "Two Populations ,One Time Period" report and use the Campaign filter to select a population with whom you have completed a Registration Campaign. Select as the Start Term the term when you conducted the campaign, and an end term at least one term later (e.g., Fall 2017 and Spring 2018). Use the Campaign Appt. Status filter to select "Attended" for Population A, and "Did Not Attend" for Population B. Next, view the Enrollment Summary table to learn more about enrollment outcomes for your selected populations.

## Tool Overview and Use Cases, Continued

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### REPORT | **Two Populations, Two Time Periods**

3

#### **Change in GPA for Freshman English Majors due to Supplemental Instruction**

In some cases you will want to perform an analysis in which you compare outcomes for a group of students to a historical population that you believe to be comparable. One example could be if your institution began to offer supplemental instruction (SI) to all freshman English majors who chose to take advantage of that resource. If you expect a change in GPA for those freshmen as a result of this initiative, you could compare the GPAs after the term of interest to the comparable term the year before the new program began.

#### **How to Look for Outcomes of these Initiatives:**

- Navigate to the Two Populations, Two Time Periods report and select Freshman students within the English major. For Population A, select the term of the year before the program began as your start term (e.g., if you began offering SI in Fall 2017, select Fall 2016 as the start term for Population A), and the term the program began as the start term for Population B (e.g., select Fall 2017). Next, select a later term as the end term (e.g., for Population A, you might select Spring 2017, and for Population B, you might select Spring 2018). Don't forget to narrow the population through other filters as needed (e.g., select only English majors, or use a Watch List of students in who enrolled in key courses).
- Once you have selected your filters, you can examine the GPA trends for these two groups of students across the selected time periods using the line graphs and the Distribution of Average Cumulative GPA table. Remember: correlation does not equal causation – consider what other changes may have occurred that could cause systematic differences in GPA for these students (e.g., different entering class or major declaration requirements for your years or terms of interest).

# Before Using Intervention Effectiveness

## Setting up Your Data for Analysis

Intervention Effectiveness is a retrospective tool for learning about the outcomes of interventions and initiatives you have already completed, or have completed a phase of. With that said, it is important to understand what comparative data you will need to infer meaningful results.

You will need to know exactly which students were involved with your intervention or initiative, and how they are identified in the platform (e.g., are they in a Watch List, were they in a campaign, were they in a particular major or program?), and which students will make up your comparison group, if you have one. **An appropriate comparison group is vital for understanding if your intervention is what caused the change in outcomes for your intervention population.** Knowing the answers to these questions will help you understand which report to use.

### One Population

- Compare students to themselves in an earlier term
- When no comparison population is available because the strategies were mandated to all, the process change didn't exist before, or data was not historically available – collect the data now and use it as a baseline for future interventions

### Two Populations, One Time Period

- Compare students to a group of students who were not acted upon and determine the differences in outcomes between those who received the strategies and those who didn't (the control group)

### Two Populations, Two Time Periods

- Use a similar historical population's outcomes to provide context for the changes in outcomes for your specific population, called a trending analysis

## Best Practices for Campaigns and Watch Lists

Because users log in to Intervention Effectiveness through a single user account at their institution, all Watch Lists and Campaigns at the institutions will appear in the drop-downs for those filters. Because there may be many of these to select from, we recommend a few best practices to better organize these features:

- Create a naming convention for Campaigns and Watch Lists at your institution going forward, and ensure that users adhere to it by employing occasional spot-checks
- Start Watch List and Campaign names with the most important info (Watch Lists have a shorter character limit), e.g., F16 Freshmen Reg Campaign, S17 1<sup>st</sup> Time Freshmen, or S18 Bio Major Decl Campaign
- Use Watch Lists whenever you want to preserve a static list of students. For example, Categories do not retain inactive students, so relying on a category for historical data may inadvertently exclude students
- Rename existing campaigns and Watch Lists by editing them in Navigate (please see data caveat below)

### Data Caveat:

Because Intervention Effectiveness is developed in a separate app from the Navigate platform, data is loaded nightly from the platform, rather than updated in real-time. This means that updates/edits to Watch Lists and Campaigns will appear in Intervention Effectiveness the following day after the updates are made within Navigate.

# Worksheet #1: Pre-Analysis

What Types of Analyses Will You Utilize and How Will You Report on Those Results?

Questions Before Analysis:	Example:	Response:
What intervention or initiative did you conduct with your students? Do you have the list of all involved students/campaigns that were part of this initiative?	<i>e.g., Registration campaign, 15-to-Finish campaign, rolled out mobile app to all freshmen, etc.</i>	
Which filters will you use to identify your intervention population?	<i>e.g., Watch List(s), Campaign(s), Major at end of Start Term, Campaign appt status, etc.</i>	
What were the goals of your intervention?	<i>e.g., Increase Fall to Spring persistence by 3 percentage points, increase earned credits of intervention group from 13.3 to 14, etc.</i>	
What kind of comparison group do you have available?	<input type="checkbox"/> No comparison (creating baseline now) <input type="checkbox"/> Same group of students at earlier time <input type="checkbox"/> Control group <input type="checkbox"/> Similar historical group (trending analysis)	<input type="checkbox"/> No comparison (creating baseline now) <input type="checkbox"/> Same group of students at earlier time <input type="checkbox"/> Control group <input type="checkbox"/> Similar historical group (trending analysis)
Which report will you use for this analysis?	<input type="checkbox"/> One Population <input type="checkbox"/> Two Populations, One Time Period <input type="checkbox"/> Two Populations, Two Time Periods	<input type="checkbox"/> One Population <input type="checkbox"/> Two Populations, One Time Period <input type="checkbox"/> Two Populations, Two Time Periods
Which filters will you use to identify your comparison population?	<i>e.g., Watch List, Campaign(s), Major at end of Start Term, Campaign appointment status, etc.</i>	
Which metrics will you look at to show change in your variables of interest?	<i>e.g., Average cumulative GPA, persistence percentage, average earned credits</i>	
What are the baseline numbers against which you will be measuring?	<i>e.g., 70% persistence rate, 2.65 average GPA, 12.1 average earned credits</i>	

# Worksheet #2: During Your Analysis

## Guidelines to Interpret Your Results



### Interpreting Results

Ask Yourself Questions and Obtain Appropriate Context for Data Interpretation

- How do persistence and graduation rates for this population compare to the institution-wide rate?
- Within the cumulative GPA distribution, do you see differences in the directionality or spread of the GPA after the intervention?
- If you see a decrease in cumulative GPA for persisting students, did high-performing students in this population appear to graduate or leave the institution at a higher rate than other students?
  - If they are persisting or graduating at a lower rate than expected, could that be due to transfer out of the institution?
- How similar are your intervention population and your comparison population? Note: the more similar the populations, the easier it is to determine if the change in outcomes for your intervention population was due to your intervention/program.
- What other initiatives, interventions, or programmatic changes occurred that could have impacted your intervention population, your comparison population, or both?

**Data Analysis Notes and Follow-Up Items** – Jot down your thoughts in the box below as you go through the analysis

*Examples include: reach out to registrar to learn if we can determine which students who are "Not Enrolled" transferred, and which ones dropped out or stopped out; contact Institutional Research office to get more years of data on historical persistence rates for my intervention population*

Use Step 3 of the [Quantifying the Impact of Your Student Success Initiatives Toolkit](#) to gain more insight on how to use other qualitative and quantitative data to strengthen your analysis.

## Worksheet #3: Post-Analysis

Questions After Analysis	Example	Response
<p>Was your intervention successful? Did you achieve your desired result?</p>	<p><i>Yes, the intervention appears to have been successful. We hoped to increase the persistence rate of our treatment group by 5 percentage points, and it increased by 7 percentage points.</i></p>	
<p>If you were successful, why were you successful?</p>	<p><i>Our advisors successfully completed all steps of the intervention with students, and we used student communication best practice guidelines to plan our communication.</i></p>	
<p>If you were successful, do you believe can you scale this (e.g., achieve the same or greater results with the same or lower resources/time per student?)?</p>	<p><i>Yes, we believe we can scale this result. Our initial round of outreach was a form email to a large group of students, followed by texts, and then more personalized emails and texts – the first two stages will not take more effort to do for a larger group, and they had the highest response rate.</i></p>	
<p>If you were not successful, why not? What will you do to learn more about this result? What will you do to change the next iteration?</p>	<p><i>We believe that we were not successful because many students we included in our registration outreach had blockers (e.g., academic probation, holds) to registration. In the next intervention, we will create more personalized outreach in the first round of outreach to students in those situations.</i></p>	
<p>What other data will you need to complete your analysis and report out on your results?</p>	<p><i>To complete the analysis we will need historical persistence data for a variety of cohorts we don't have historical data for in Navigate (e.g., which students had holds last fall prior to registration) – we will reach out to the registrar for this data.</i></p>	

# Data Analysis and Interpretation Cautions

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Data analysis can be a powerful tool for improving decision-making and achieving better student outcomes. However, it's not easy, and to make good decisions you need to interpret the data in Intervention Effectiveness correctly.

If you are new to data analysis and interpretation, start by reviewing the six basic guidelines below. They will help you avoid some of the most common pitfalls that people make and put you on the path toward high-impact decisions and actions.

## 1. Mind your n-values

N-values (or the sample size of an analysis) are crucial to understanding whether your observation is significant and reliable. Results based on small numbers of students shouldn't be ignored, but signal that you must proceed with caution. In most cases, trends that you spot should be considered "signals". You may need to investigate further by corroborating your insight with other data or with anecdotal evidence.

## 2. Avoid relying on a single metric

By itself, you might not know what a number really means. It could be misleading or lack context. Finding that 70% of students persisted in a particular major is much more meaningful if you know that the university-wide persistence rate is 85%. When you think you spot a pattern or an interesting statistic, try to put it in context by looking at related metrics.

## 3. Be careful with averages

Averages can be extremely helpful, but cannot tell the entire story of the data. Because averages describe where the center of the data is located, they often obscure interesting variations and exceptions. Averages can also be skewed by outlying data points or exceptional subpopulations. If Warren Buffett graduated from your school, your "average" salary for graduates could be a million dollars! Drilling down by major, category, or other filters can help you figure out if subpopulations are skewing the average or driving a change over time. Additionally, understanding variations among subpopulations can help you more efficiently allocate resources or make other changes.

## 4. Don't confuse correlation for causation

Confusing correlation for causation is a tempting data pitfall. A classic example is major choice. If you find that math majors graduate at higher rates than psychology majors, it doesn't necessarily mean that all students should be math majors. That statistic likely reflects an underlying difference in the student populations: only highly-prepared students tend to choose a major in mathematics. When you identify a correlation, remember to think through whether there is an underlying factor (technically, a "confounding variable") that might be driving the difference.

## 5. Be mindful of selection and self-selection bias

Both types of bias prevent your analysis from being representative of the entire population, and may be unavoidable. Be careful to design the analysis of your results in such a way that mitigates any potential impacts of selection bias, possibly by diving deeper into subgroups.

## 6. Start with a theory of change

Before you get close to analyzing the effectiveness of an intervention, you should plan interventions that you expect to yield a specific result. For example, if you want to see more students take at least 15 credits per term, you would want to design an intervention that you expect to result in more students taking 15 or more credits. If you have designed a good intervention, you already know what you need to evaluate to see if it was successful.

## Further Resources and Research

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Resources to Explore for Deeper Analysis and More Effective Interventions

### Related Resources for Designing and Measuring Interventions



#### Resources for Measuring Effectiveness and Interpreting Student Success Data

- Measuring Campaign Effectiveness – [Toolkit](#)
  - Learn how to measure the outcomes of Campaigns through offline tools and resources.
- The ROI of Student Success – [Presentation](#)
  - Presentation from the 2018 CONNECTED Keynote detailing the importance of measuring Return on Investment and Return on Education.
- Quantifying the Impact of Your Student Success Initiatives – [Presentation](#)
  - View the 2018 CONNECTED presentation on how to set up your student success initiatives for measurement and how to report on that success to scale your work.
- Quantifying the Impact of Your Student Success Initiatives – [Toolkit](#)
  - Use this toolkit to drive the planning, implementation, reporting, and scaling of student success initiatives at your institution.
- EDUCAUSE and RPK Group – [Analysis Tool](#)
  - Use this tool to calculate expenditures, funding, and ROI from student programs and interventions. **Note:** for advanced practitioners.



#### Resources for Creating Effective Interventions

- 61 Campaign Ideas – [Infographic](#)
  - Use this collection of best practices to devise interventions at your institution.
- Designing and Implementing Campaigns – [Toolkit](#)
  - Learn how to design and implement an effective appointment campaign with your populations of interest.
- Coordinating End-to-End Early Alerts – [Presentation](#)
  - Review this presentation to learn about best practices in implementing an early alert system and working across units to build a Coordinated Care Network.
- Coordinating End-to-End Early Alerts – [Handout](#)
  - Review the resources in this handout to build effective case management workflows.



#### Relevant Research

- [“8 questions to ask when evaluating the impact of student success programs”](#)
  - Ask yourself these tools at the beginning of your intervention process to inform how you will develop your intervention or program.
- [“Departmental Performance Scorecards”](#)
  - Use this tool to develop scorecards for your departments and units to measure their performance on student success efforts over time.
- EDUCAUSE Return on Investment [Toolkit](#)
  - Review these resources to learn more about impact evaluation and use the analysis tool developed by EDUCAUSE and RPK Group. **Note:** for advanced practitioners.

# Glossary of Data Definitions

## Intervention Effectiveness Data Definitions

### All Reports - Filters

Time Period	Definition
Enrolled in Start Term	Displays all students who were enrolled in the term selected as the Start Term, who have not graduated from any degree before the selected start term.
Enrolled in End Term	Displays all students who were enrolled in the selected Start Term <i>and</i> the selected End Term, who have not graduated from any degree before the selected end term.

Intervention Information	Definition
Appt. Campaign	<p>Allows you to select the population of students who were involved in the selected Appointment Campaign(s). If you select a time period that ends prior to the time when the campaign occurred, their results will not be useful.</p> <p><b>Note:</b> Because Intervention Effectiveness will show <i>all</i> campaigns that have been run within the Navigate tool, there may be a long list. To get the most use out of this filter, we recommend naming campaigns (or editing and re-naming past campaigns) with the name of the term included (e.g., Fall 2017 College of Business Registration Campaign) – please see <a href="#">page 11</a> of this toolkit for more information</p>
Campaign Appt. Status	This single-select option allows users to select students who either attended <i>at least one</i> campaign appointment for the selected campaign(s), or who did not attend <i>any</i> campaign appointments for the selected campaign(s).
Watch List	<p>The Watch List filter is a versatile filter that allows users to select a list of any group of students they would like to learn more about. A Watch List in Navigate is a static list of students, who can be either uploaded into the platform by Student ID, or selected from student profiles, Advanced Search, or Reports.</p> <p><b>Note:</b> Because Intervention Effectiveness will show <i>all</i> Watch Lists that exist within the Navigate tool, there may be a long list. To get the most use out of this filter, we recommend naming Watch Lists (or editing and re-naming past watch lists) with the name of the term included and the purpose of the Watch List (e.g., F17 COB Major Decl) – please see <a href="#">page 11</a> of this toolkit for more information</p>

Current Student Information	Definition
Tag	<p>This filter displays all tags at your institution. Tags are controlled by users at your institution and administered solely within the Navigate platform. They are not stored historically, therefore, tags only reflect tags <i>currently</i> applied to students in your platform.</p> <p><b>Note:</b> Tags will update in Intervention Effectiveness the day <i>after</i> they are updated in the Navigate platform.</p>
Category	<p>This filter displays all categories at your institution. They are not stored historically, therefore, the categories filter only reflect categories <i>currently</i> applied to students in your platform. Please note: categories will update in Intervention Effectiveness the day <i>after</i> they are updated in the Navigate platform.</p> <p><b>Data caveat:</b> Categories are removed from students who are marked as Inactive in the Navigate platform. As a result, this means that categories cannot effectively be used as a filter for retroactive analyses in many situations. If you are concerned that some students in the population you are selecting by Category may be inactive, consider using a Watch List instead.</p>

# Glossary, Continued

## Intervention Effectiveness Data Definitions

### All Reports - Filters

Student Information as of the End of the Start Term	Definition
<b>Degree in the Start Term</b>	All students registered in the start term who indicated they were pursuing the selected degree(s) in the start term. Only their <i>final</i> selection in the start term will count (e.g., a student who switched from pursuing an A.S. to a B.A. six weeks into the selected start term would only appear when the user selects students who were pursuing a B.A. in the start term).
<b>Classification in the Start Term</b>	All students registered in the start term who were in the selected classification(s) in the start term. Only their <i>final</i> status in the start term will count.
<b>College in the Start Term</b>	All students registered in the start term who were in the selected college(s) in the start term. Only their <i>final</i> selection in the start term will count.
<b>Major in the Start Term</b>	All students registered in the start term who indicated they were pursuing the selected major(s) in the start term. For example, if a student began as an Art major, changed majors twice, and ended as a Biology major, ONLY the Biology major will "count". Likewise, if a student began as a Biology major and switched to English, they will not appear in your list of students if you choose "Biology" from the "Major in the Start Term" filter.
<b>Cum. GPA Bucket(s) in the Start Term</b>	All students with the selected cumulative GPA range at the <i>end</i> of the selected start term, who were enrolled and had never graduated at the start term. The cumulative GPA buckets selected are the same as those within Institution Reports, so that users can compare student outcomes to similar groups of students historically. <b>Note:</b> If using the Distribution of Cumulative GPA drill-in, it will be most effective to select one GPA bucket per student population (in the filters) to easily analyze the data.

### All Reports - Outputs

Enrollment Summary	Definition
<b>Enrolled Start Term</b>	Students registered in the start term, who have not graduated from any degree before the selected start term.
<b>Enrolled End Term</b>	Students registered in the start and end term, who have not graduated from any degree before the selected start term, or at any point before the end term.
<b>Graduated</b>	Students registered in the start term, who have not graduated from any degree before the selected start term, and who graduated from at least one degree between the start term (included) and the end term (excluded).
<b>Not Enrolled</b>	Students registered in the start term, never graduated from any degree before the end term, and did not register for the end term.

Performance Summary	Definition
<b>Average Cumulative GPA Start Term</b>	Average (mean) start term Cumulative GPA of students registered in the start term, who have not graduated from any degree before the selected start term.
<b>Average Cumulative GPA End Term</b>	Average (mean) end term Cumulative GPA of students registered in the start and end term, who have not graduated from any degree before the selected start term.
<b>Average Start Term GPA</b>	Average (mean) start term Term GPA of students registered in the start term, who have not graduated from any degree before the selected start term.
<b>Average End Term GPA</b>	Average (mean) end term Term GPA of students registered in the start and end term, who have not graduated from any degree before the selected start term.

# Glossary, Continued

## Intervention Effectiveness Data Definitions

### All Reports - Outputs

Progress Summary	Definition
<b>Average Attempted Credits by Term</b>	Average (mean) attempted credits of students registered in the selected start term, who have never graduated from any degree before the selected start term.
<b>Average Earned Credits by Term</b>	Average (mean) earned credits of students registered in the selected start term, who have never graduated from any degree before the selected start term.
<b>Average Credit Completion Percentage</b>	Average (mean) credit completion percentage for students registered in the selected start term, who have never graduated from any degree before the selected start term.

GPA Over Time	Definition
<b>Average Cumulative GPA by Term</b>	Average cumulative GPA of students registered in the start term, who have never graduated from any degree before the selected start term. This filter will reflect the final cumulative GPA for the students in the selected start term.
<b>Average Term GPA by Term</b>	Average term GPA of students registered in the start term, who have never graduated from any degree before the selected start term. This filter will reflect the final term GPA for the students in the selected start term.

Credits Over Time	Definition
<b>Average Attempted Credits by Term</b>	Average term attempted credits of students registered in the start term, who have never graduated from any degree before the start term.
<b>Average Earned Credits by Term</b>	Average term earned credits of students registered in the start term, who have never graduated from any degree before the start term.
<b>Avg. Credit Completion Percentage by Term</b>	Average term credit completion of students registered in the start term, who have never graduated from any degree before the start term.

End Term Cumulative GPA Outcomes	Definition
<b>Students in End Term with Cumulative GPA Improved</b>	<p>The number of students whose GPA has increased from the selected start term to the selected end term.</p> <p>The percentage is calculated as the following: of students who persisted from the start to the end term, what percentage of them experienced an increase from their cumulative GPA at the end of the start term to their cumulative GPA in the end term.</p>
<b>Students in End Term with Cumulative GPA Not Changed</b>	<p>The number of students whose GPA has not changed from the selected start term to the selected end term (though it could have changed during intervening terms).</p> <p>The percentage is calculated as the following: of students who persisted from the start to the end term, what percentage of them experienced no difference between their cumulative GPA at the end of the start term to their cumulative GPA in the end term.</p>
<b>Students in End Term with Cumulative GPA Declined</b>	<p>The number of students whose GPA has increased from the selected start term to the selected end term.</p> <p>The percentage is calculated as the following: of students who persisted from the start to the end term, what percentage of them experienced a decrease from their cumulative GPA at the end of the start term to their cumulative GPA in the end term.</p>

# Frequently Asked Questions

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## FAQs

### **Can Intervention Effectiveness be used in lieu of obtaining analyses from the office of Institutional Research at my institution?**

The reports within Intervention Effectiveness are not designed to replace the analyses developed by the IR office at your institution. In general, the analyses within Intervention Effectiveness may use data definitions, configurations, or sources that differ from those used by your Institutional Research office. For example, Intervention Effectiveness centers around reports of student success for populations of students that the end user can define themselves; this may differ from Institutional Research analyses designed to officially report on specifically defined student cohorts (e.g., first time full time students entering in a particular year or term). Additionally, Intervention Effectiveness is not intended to replace the wide variety of data sources and analytical scopes that may be available through your Institutional Research office.

### **What types of students are included in each report?**

Students who already have a graduated indicator (for *any* degree) in their academic record as of the selected Start Term will not be included in the population of students in the results. Additionally, if your institution does not send EAB data on students going back more than a few years, then you will be unable to analyze data for terms that occurred before the date for which your institution began sending data.

### **Can I see exactly which students are included in a segment or cohort?**

Yes, you can see individual student data by viewing or exporting the drill-in for any report. Click any blue text in Intervention Effectiveness to obtain a drill-in report about that metric with individual student data. Export aggregated data into a CSV file from the drill-in by clicking the three buttons above the drill-in and selecting "Download as CSV".

### **How can my colleagues get access to these reports?**

Please contact a representative from your institution's student success leadership team to request access.

### **Can I request additional reports or analyses?**

We always want to be able to incorporate member feedback as we continue building out additional analyses over time. If there is a specific type of report that you'd like to see in a future iteration of Intervention Effectiveness, please contact your Strategic Leader or the Member Support Team.

### **How often is data loaded into Intervention Effectiveness?**

Data is loaded into Intervention Effectiveness each night. Data from your Student Information System (SIS) will load into Intervention Effectiveness on a two-day lag, because the data loads for Intervention Effectiveness cannot run until after that data has loaded into the Navigate platform.

- For example: if a student changes their major on Monday, that data will update in Navigate on Tuesday, and will update in Intervention Effectiveness on Wednesday.

For data that does not come from your SIS, but rather is generated in the Navigate platform (e.g., appointments, creating/updating Watch Lists), you will see the update in Intervention Effectiveness the next day.

- For example: if you edit the name of a campaign, or add a new Watch List on Monday, you will see that information in Intervention Effectiveness on Tuesday.

### **I added a Watch List or Tag today, why don't I see it in Intervention Effectiveness?**

Please see above to learn more about the cadence for data updates in Intervention Effectiveness.

## Frequently Asked Questions, Continued

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### FAQs

#### **Why can't I use the "email dashboard" feature I see in the tool?**

Intervention Effectiveness is developed in a separate application from the rest of the Navigate platform. As explained above, users at your institution log into the tool through a single user login that is a generic login for your institution. The "email dashboard" link in the tool is a standard option that we cannot turn off in the application where we've developed Intervention Effectiveness, but we will not be able to provide that feature to members until we are able to provision access to individual users at your institution through separate accounts.

#### **Why do I have to see all of the campaigns and Watch Lists instead of just my own?**

Because everyone at your institution logs into Intervention Effectiveness through a single login (see above), we are currently unable to filter down the Watch Lists and campaigns to only reflect those that you have run or saved in Navigate.

#### **How do you handle double majors?**

Students are included when you filter for a specific major if they had declared that major at the end of the selected start term, regardless of whether the major was their primary, secondary, etc. major.

#### **Can I change (or request that EAB change) the ranges—for instance credit or GPA—that are showing up in the charts?**

At this time, the ranges for each attribute are standard for every member and cannot be changed. They are based on the ranges in the Historical Trend Analytics. If you have suggestions for improvements to the ranges, please contact your Strategic Leader, or the Member Support Team.

#### **Why would we see average cumulative GPA for students in a current term, and how could that number be different from the previous term if this term has not yet ended?**

We see cumulative GPA in a current term because students always have a current cumulative GPA associated with them in their academic record. Some institutions send data for cumulative GPA nightly, while others only send it once or a few times a term. We would expect to usually see a different average GPA for the current term than the prior term even if no individual students have had changes to their GPA because the group of students enrolled in the end term (which is currently in session) is likely not the same group of students enrolled in the prior term. This will change the average cumulative GPA of the group, because the different students will not all have the same cumulative GPA as each other.

#### **Why do I see a concentration or major in the dropdown that makes no sense with my college selection?**

The filtering works differently in the Analytics dashboards and reports than in Advanced Search. In advanced search, if you select the College of Health Sciences and then go to the Major dropdown, you'll only see majors within that college. In analytics, you will see majors that students within the College of Health Sciences are enrolled in. For example, Student X could be enrolled in pre-Nursing, and also be enrolled in a Spanish major, and you'd see those both appear in the dropdown when you select the College of Health Sciences because both of those are in her academic record.

#### **I selected a student population using the Category filter and there are fewer students returning in the results than I expect, what is the reason for this?**

Categories are removed from students who are marked as Inactive in the Navigate platform. As a result, this means that categories cannot effectively be used as a filter for retroactive analyses in some situations, as students who were in that category previously and still meet the criteria for it despite being inactive will have been removed from that category. This could be the case if your institution uses categories to record a student's entering class – they were still a part of that entering class even if they are inactive or no longer attend the institution. If you are concerned that some students in the population you are selecting by Category may be inactive, consider using a Watch List instead.



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