Initiative Design Questions

USING ILLUME IMPACT FOR ANALYSIS?
Ask yourself these questions.

1. Is persistence the outcome you are measuring?

Currently, Illume Impact only provides analysis for one outcome: **persistence from one term to another**. This is the same definition of persistence that is used in Illume Students and Inspire for Advisors and is defined as "the probability of a student enrolling in a specified future term and staying enrolled past the add/drop date."

For example, if your institution is on a Fall - Fall persistence model, Illume Impact will be measuring the impact of an initiative offered in one Fall term on persistence into the next Fall term.

If you are trying to measure the impact of an initiative on another outcome, such as course completion or graduation, Illume Impact cannot provide this analysis. The ability to measure other outcomes may be added to Illume Impact in the future.

2. Do you have enough students for analysis?

Illume Impact **requires at least 100 participants** and **100 comparison students** for analysis. However, *if fewer than 1,000 students* are used for analysis, there is a lower likelihood of measuring statistically significant results. Drill-down results (i.e. Impact by Student Group) will also be affected, as the sample size for a specific student group could be very small. The number of eligible comparison students should be at least as large as the number of participants.

For example, let's say your institution offered a college success course last term that was available to all students and you wanted to know if participation in that course influenced whether students persisted to the following term. Ideally, you would have 1,000 or more students who took the class who would be considered the participant group in the analysis. You would also need at least 1,000 students who could have taken the course but did not to use as the eligible comparison group. If there were fewer than 1,000 students who took the course, you could still perform the analysis but there is a lower likelihood of measuring statistically significant results. If fewer than 100 students took the course, you could not use Illume Impact to do the analysis.

3. Are you going to analyze a past initiative?

If you are analyzing an initiative that occurred in the past, it must have occurred **within the last 4 years**. Illume Impact only has access to your student data from the previous 4 years.

All initiatives analyzed using Illume Impact must be analyzed after persistence outcomes are available for the students who participated in the initiative and the eligible comparison students. If you are interested in analyzing the impact of an initiative being offered during the current term, you must wait to submit the initiative until the next term when persistence outcomes for the students who participated in the initiative are known.

For example, if your institution is on a Fall to Fall persistence model, you must wait to submit the initiative until the next Fall term when persistence outcomes are measured.

If you are planning an initiative for the future that you would like to analyze with Illume Impact, consider all the questions in this document while planning the initiative to ensure the initiative is a good candidate for analysis using Illume Impact.

4. Is this a program-level initiative?

For best results, Impact should be used to analyze **programmatic initiatives that occurred across the span of a term**. Because students are matched based on characteristics observed on the census date (or day 14 if the census date is unknown) of the term, it is more difficult to isolate specific confounding variables that may influence results for an initiative that occurred at a single point during the term. For example, if one email was sent to students on day 60 of the term, the matching is based on data from several weeks earlier. The students' persistence predictions and/or propensity scores may have shifted since then, and this may no longer be a good match.

5. Who was eligible to participate in this initiative?

Do you know exactly who was eligible to participate and who was not? Do you know who participated and who did not from that eligible population? If not, then you must answer those questions before you move on. For example: Were all students eligible to participate? If so, are there any exceptions? Were participants randomly selected/assigned? Or, were participants selected/assigned based on specific, non-random criteria?

Consider how participation is defined in these examples:

- A free online tutoring resource is offered to 5,000 randomly selected undergraduate students. If you are interested in analyzing the impact of **making this tutoring resource available**, participants would include all 5,000 students and comparison students would include all remaining undergraduate students. However, if analyzing the impact of **using the tutoring resource**, participants would be a subset that logged in from the 5,000 students and comparison students would include the remaining students who were given access and never logged in.
- The Writing Center offers three review sessions for any writing assignment. Before analyzing the impact of Writing Center tutoring on persistence, determine whether participation is defined as attending a single review session or completing the series of three sessions.

6. Were there enough participants and eligible comparison students in the same term for matching?

In general, more confounding factors are expected when initiative participants and comparison students are matched across different terms. Illume Impact considers student data that may not account for other factors that could influence student success in different time periods, such as change in global economic factors, effects from different interventions, or changes at the institution.

If initiative participation criteria are based upon factors that are highly correlated or indicative or persistence or propensity to participate (e.g. persistence prediction score, GPA, academic standing), then it is unlikely that there will be enough comparison students to match against in the same term for comparison. This type of initiative would not be ideal for analysis in Illume Impact because some or all the eligible comparison students would need to come from another term.

7. Is your data in the correct format?

Data uploaded to Illume Impact must be in a .tsv (tab-separated values) or .csv (comma-separated values) file format. This file should contain:

- The student id numbers for participant and eligible comparison students
- The term in which they were eligible to participate
- And whether they participated or were eligible but did not participate

This information should be in the same format as it appears in your student information system. When uploading the file, you will be shown the exact formatting (length of student ID and format of term ID).

If you do not have all three pieces of information for the students in the groups, then it must be gathered before the initiative can be uploaded to Impact for analysis. For more specific details on the format of the data file, see the ***Data Readiness Checklist***.

8. What are the potential confounding factors?

There are **confounding factors,** or other circumstances that could affect the initiative participants or comparison group and make it difficult to determine what exactly influenced outcomes. For example, if an institution wanted to pilot a new software bundle but only one advisor chose to use it, then any difference in outcomes between students who were assigned that advisor and those who weren't could be attributed to the software or to the advisor or both. In other words, since the advisor's characteristics can't be accounted for when identifying the comparison group through PPSM, impact analysis results must include caveats about the potential confounding factors.

Consider the following common confounding factors during initiative design prior to impact analysis:

- Either the participating group or comparison group contains a single study unit: e.g. one of the groups is representative of a single advisor/faculty member/course/department/etc. In this case, it would be difficult to attribute the difference in outcomes to the initiative or the advisor/faculty member/course.
- The participating group and the comparison group are systematically different in a way that may be directly related to persistence outcomes, e.g. the participants have a high GPA and the comparison group has a low GPA. Since Illume Impact measures persistence outcomes, if the participation criteria is chosen based upon something that may correlate to persistence it will be challenging to find enough comparison students to match with the participants.
- Another initiative is offered in conjunction with the same group at the same time, e.g. first-time full-time students are required to attend a Student Success Course *and* special advising sessions during their first term. This can be a problem because it will be difficult to isolate the effects of one initiative.
- The participating group and the comparison group are from different time periods or terms and persistence outcomes were measured at different points in time. This can make analysis difficult because there may have been different factors that affected students based upon when they participated in the initiative.

Even using PPSM with Illume Impact, these confounding factors cannot simply be eliminated or ignored from analysis. If confounding factors are a possibility, any impact analysis should include appropriate caveats and results should be interpreted accordingly.