Guide: Determine Your Approach

There are multiple ways to conduct an RCE in your school or district. Before you can begin working through your evaluation, we'll help you find the approach that works best for you. The decision tree provided here will help you understand the pathway that suits your unique context. Please note that by answering the questions in this step of the RCE Coach, the Coach can determine this for you.

The RCE Coach is a powerful tool that helps you move quickly to make decisions based on rigorous evidence—but you'll have to gather some data to get there. It is never too early to start thinking about how you will do that, how the approach you choose will affect those efforts, and whether you'll have to bring in any additional team members to help with that process.
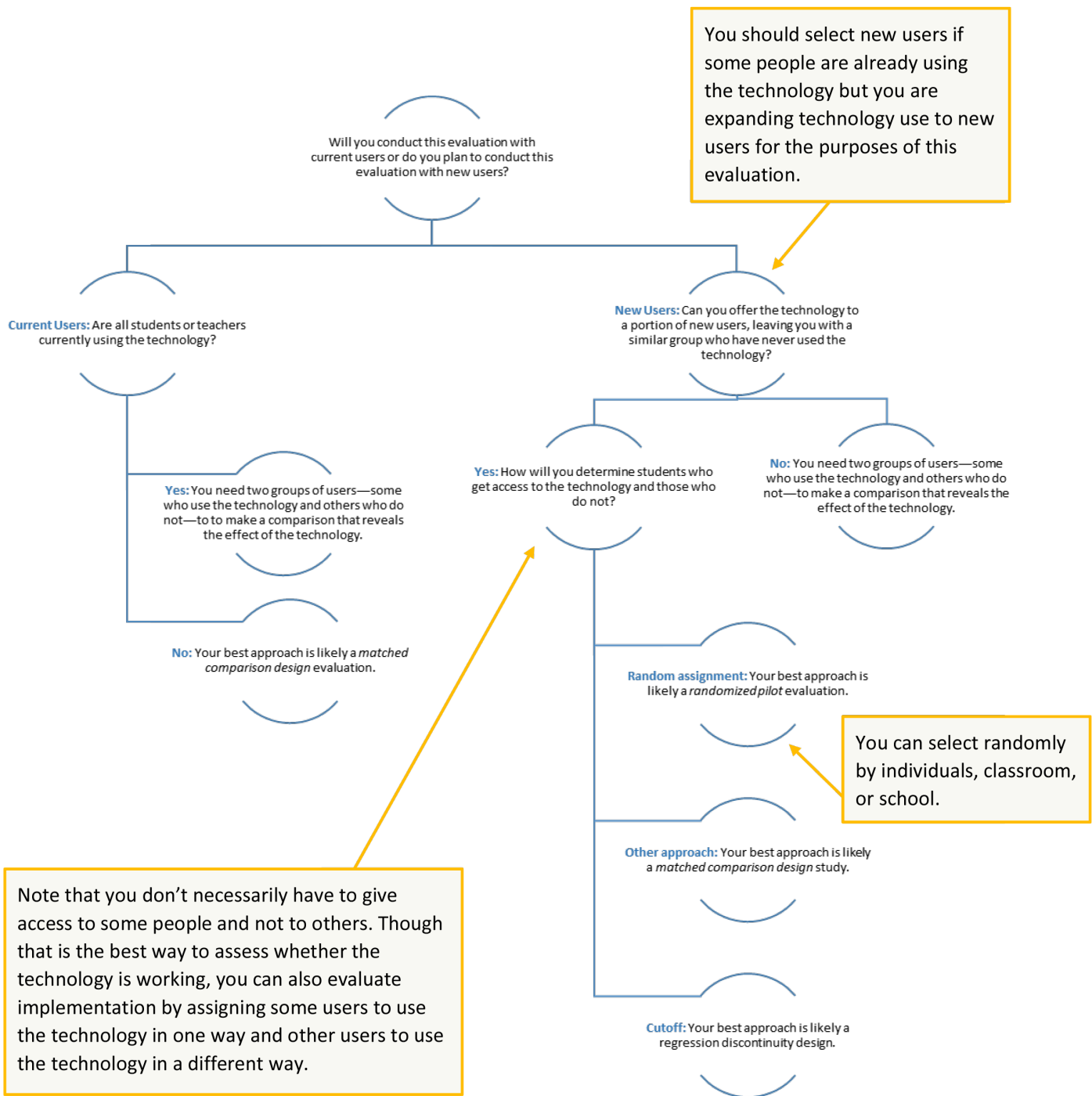
Note that there are four potential approaches (two of which are currently supported):

1. Randomized pilot

2. Matched comparison design

3. Regression discontinuity design

4. None of the above

Please follow the decision tree in Exhibit 1 to determine your recommended approach. The decision tree will also help you to understand what changes you can make to ensure you can continue with either a randomized pilot or matched comparison design.

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Exhibit 1. Decision tree

Will you conduct this evaluation with current users or do you plan to conduct this evaluation with new users?

You should select new users if some people are already using the technology but you are expanding technology use to new users for the purposes of this evaluation.

Current Users: Are all students or teachers currently using the technology?

New Users: Can you offer the technology to a portion of new users, leaving you with a similar group who have never used the technology?

Yes: You need two groups of users—some who use the technology and others who do not—to to make a comparison that reveals the effect of the technology.

Yes: How will you determine students who get access to the technology and those who do not?

No: You need two groups of users—some who use the technology and others who do not—to make a comparison that reveals the effect of the technology.

No: Your best approach is likely a *matched comparison design* evaluation.

Random assignment: Your best approach is likely a *randomized pilot* evaluation.

You can select randomly by individuals, classroom, or school.

Note that you don't necessarily have to give access to some people and not to others. Though that is the best way to assess whether the technology is working, you can also evaluate implementation by assigning some users to use the technology in one way and other users to use the technology in a different way.

Other approach: Your best approach is likely a *matched comparison design* study.

Cutoff: Your best approach is likely a regression discontinuity design.

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CHOOSING AN ASSIGNMENT METHOD

The method you choose will affect how confident you can be that your technology causes the outcomes you observe and how your findings will apply to a broader population of students.

Random assignment—recommended

Random assignment is similar to putting the names of your students in a hat and randomly picking some of the names. If you put in 10 names and select 5, those you pick would get to pilot (or try) the technology, and those not selected would continue with your existing program or curriculum. In this scenario, each individual would have a 50 percent chance of being chosen. The Coach can conduct this process for you using a digital hat and show you the similarities between the groups. This process can also work with teachers, classes, or even schools.

Advantages

- The resulting treatment and comparison groups will, on average, be similar in both observed (for example, gender) and unobserved (for example, motivation) characteristics, giving you the most confidence that any differences in outcomes between the groups are due to using the technology.
- Random assignment is a fair way to decide who gets to use a technology first, because everyone has the same chance of being chosen.
- Findings are relevant for the overall population with which you are working (that is, everyone in the hat).

Disadvantage

- Some students get to use the technology earlier than others, which might be a problem for some stakeholders.

Cutoff

Using a cutoff means selecting who uses the technology based on where students rank in relation to an existing threshold. For example, students just below a low-score threshold are assigned to use the technology. We assume that students close to a cutoff are very similar; therefore, you can compare those just below the cutoff with those just above it.

Advantage

- A cutoff enables you to compare similar users without using random assignment.

Disadvantages

- Findings apply only to students near the cutoff, not to the whole population.
- This procedure might be less fair than random assignment. With this method, scoring 1 point below the cutoff gives you a 100 percent chance of using the technology, whereas scoring 1

point above the cutoff means you have a 0 percent chance of using the technology, even though both groups of students might be equally in need of it.

- This method is not currently supported by the RCE Coach. Contact us if you'd like to discuss testing this method.

Other approach

Assignment to the treatment and comparison groups takes place in a nonrandom manner based on specific criteria. For example, the classrooms assigned to the pilot or treatment group are those with access to computers or the schools that will pilot the technology are chosen based on a competition or application process.

Advantages

- This process might align better with how you've assigned technology use in the past.
- It might be logistically easier, particularly if you're selecting based on who has better access to computers or the Internet.

Disadvantage

- Stakeholders might not consider this process to be fair. The group that meets the criteria might already have advantages over other students.
- It might not align with need. Those who need the technology more or would gain more from using it might be less likely to receive access than if you used random assignment.
- It's not always possible to create a good comparison group. If the Coach fails to create similar groups of users and nonusers, you will not be able to determine whether the educational technology is moving the needle. It's possible that groups appear similar, but unobserved differences, not included in your data, are driving outcomes.

NOTE: Across all of these methods, you do not have to create or compare groups at the individual level. If there are logistical barriers to working with individuals, you can create groups at higher levels, such as classrooms or schools. However, at higher levels you will need more study participants to be confident in your results.