Ed Tech Rapid Cycle Evaluation Coach

Guide: Think About How You Will Use the Results

We'll use this tool to think about how the answer to your research question will inform the decisions you make regarding your technology. The following questions will help you prepare you to think about the relationship between your results and the technology costs and stakes associated with your decision. To complete this tool you will have to consider the following:

What would success look like?

How much risk are you willing to take when making a decision or a recommendation?

CONSIDER: When making decisions, it is important to think about the costs of the technology you're considering and the risks associated with your decision.
For example, you might be trying to decide:

- Whether to keep paying for a software tool you're already using
- Whether to buy licenses for a tool you're piloting on a trial basis
- Whether to change how teachers and/or students use the tool, based on a new approach tested in your evaluation

A. WHAT IS THE COST OF THE EDUCATIONAL TECHNOLOGY?

The cost of a technology will probably be a factor in your decision about how big its effect has to be in order to be a good value. Cost might also influence how certain you want to be that the technology has the desired effect.

The cost of a technology could simply be the cost per user. It could also be the savings realized by replacing one technology with another less expensive technology. Cost can also be measured in something other than dollars, such as teacher preparation time saved.

How much do you pay (or save) per student, teacher, or school to use the educational technology?

Examples

- It costs about $20 per student to use the educational technology.
- It saves about $1,000 per classroom to use the educational technology.
- We're not sure. We believe using this tool will save teachers 20 minutes per day on preparation time.

B. WHAT WOULD SUCCESS LOOK LIKE?

The Coach will calculate the probability that the educational technology has an effect at least as large as the number you choose here. The Coach uses the units of whatever you are using to measure outcomes. For example, if you are looking at student performance on a test, the units would be points.

CONSIDER: This number could be 0 or even negative. A 0 means that you would consider any increase in the outcome a success, as long as it is positive. If the technology saves you a lot of money, you might be willing to consider any change that is greater than a small negative number a success.

The RCE Coach will tell you "There is an X percent probability that the intervention increases the outcome by Y units or more." In this step you select the value for Y.

What is the direction of intended change? (Do you hope to increase or decrease your outcome of interest?)

What measure will you use to test whether there was an effect?

Examples

- Midyear math assessment
- End-of-year state reading assessment

What is the unit used to measure your outcome of interest?

Examples

- Test score points
- Percentage points

By how many units would your outcome have to increase or decrease for you to consider the technology a success?

To answer this question, think about what impact size would be meaningful in your context. If you hope to see an increase in a reading test score, would a 1 point increase, on average, be a meaningful increase? What about 5 points? When deciding what a meaningful change would be, you should consider factors such as the maximum possible points and current performance. A 10-point increase on a test with a maximum possible score of 100 is very different from a 10-point increase on a test with a maximum score of 500. Similarly, if students score 80 out of 100 on average, there is less room for improvement than if they score 50 out of 100 on average, and that might affect the size of the improvement that you would find meaningful.

C. HOW CONFIDENT DO YOU WANT TO BE?

Rarely do we have enough evidence to be nearly certain (close to 100 percent certainty) that an educational technology product produces the desired results. Most of the time, we have to make choices with incomplete evidence. Thinking forward to your results, what probability would you need to be comfortable concluding that the educational technology is moving the needle?

As you think about what the probability threshold would be for you to conclude that the technology had the intended effect, consider the stakes involved. You might want a higher level of certainty if your results will influence a high-stakes decision than if your results will be used for a lower-stakes decision. For example:

- High stakes—if you are deciding whether to implement a district-wide curriculum
- Low stakes—if you are deciding how to use a small amount of class time

Though it might be tempting to set a high probability threshold for any kind of evaluation, it is important to note that the higher the threshold the harder it will be to meet. This might not necessarily be because the technology isn't working, but could be driven by the number of users you are testing the technology with or your unit of assignment. With a very small number of users, you will be unlikely to achieve high confidence even if the product is very effective.

Example

The RCE Coach will tell you "There is an X percent probability that the intervention increases the outcome by Y units or more."

That is, there is a 91.1 percent probability that the intervention increases the outcome by 5 scale score points or more.

In this step, you are selecting the value to which you will compare X. If X is less than your chosen value, you would not be confident that the technology is moving the needle. If X is greater than your chosen value you would be confident that the technology is moving the needle.

That is, if you selected 95 percent in this step, you would conclude that the technology is not moving the needle because 91.1 percent is less than 95 percent.

D. WHAT WILL YOU DO IF …

This RCE will provide you with one of the following three answers to your research question. It is important that you think about what you will do under each scenario.

1. … it is likely that the educational technology has the intended effect?
2. … it is not likely that the educational has the intended effect?
3. … the results are inconclusive?

Examples

If it is likely that the educational technology has the intended effect …

- *We will roll out eZumi to all students in grades 3 through 5.*

If it is not likely that the educational technology has the intended effect …

- *We will not renew our eZumi license for the next school year.*

If the results are inconclusive …

- *We will collect more data to get a higher level of certainty about our results.*