

# Ed Tech Rapid Cycle Evaluation Coach

## Guide: Craft Your Research Question

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A carefully crafted research question grounds the development of an RCE in a clear statement of the evaluation’s goals. This guide highlights the key components of a well-defined research question and provides examples for each of the four types of research questions that you can answer using the RCE Coach.

### INGREDIENTS OF AN EFFECTIVE RESEARCH QUESTION

Exhibit 1 illustrates the key ingredients of a focused research question, or the “**A, B, C, and Ds**”. The blueprint for an effective research question is structured as follows:

Does **A** do **B** among **C** compared with **D**?

Thinking through the details of the intervention; its intended goal; and the target population of students, teachers, or schools at this stage will make the rest of the process much easier. However, you might not know every aspect detailed in this table at this point. If that’s the case, the table can help identify critical aspects of the evaluation that you will want to discuss with key stakeholders as soon as possible.

### EXPECTED ANSWERS TO A WELL-FORMED RESEARCH QUESTION

A rapid cycle evaluation will provide one of three answers:

1. Yes, **A** is likely to do **B** among **C**, compared with **D**.
2. No, it is not likely that **A** does **B** among **C**, compared with **D**.
3. More data are needed to reach a strong conclusion.

The answer you get could drive important decisions within your school or district. The Coach’s guide for Planning Your Next Steps will help you think through how you will use the evidence you uncover through this process. Because a well-designed evaluation aims to provide a clear answer to the precise question it was designed to address, it is important to confirm with evaluation stakeholders that the question addresses a learning objective that can help inform decisions and actions.

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## Exhibit 1. Components of a well-crafted research question

The blueprint: Does A do B among C compared with D?	
<p><b>“A”</b> is the name of the educational technology you are testing. Consider including how often and for how long the users interact with or are exposed to the program.</p>	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• “eZumi Learning”</li> <li>• OR</li> <li>• “12 hours of professional development on the use of TrueStar”</li> <li>• “Six weeks of using a modified version of eZumi three times per week”</li> </ul>
<p><b>“B”</b> is the intended effect of using the technology. To identify “B” you will have to determine your outcome of interest (what you hope to change by using the technology), the direction of the intended change (increase or decrease), and the measure you will use to determine the effect (if applicable). An outcome is knowledge, skills, attitudes, or other desired benefits that are attained as a result of an activity (for example, engaging with the educational technology). We encourage you to meet with your team and determine the outcome you are most interested in measuring during your evaluation.</p>	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• “Increase achievement on an interim test of math proficiency”</li> <li>• “Increase the number of videos posted in a four-week period”</li> <li>• “Increase minutes of technology use”</li> <li>• “Decrease absences”</li> </ul>
<p><b>“C”</b> is the group of people for whom you want to see results. What group of people are you trying to affect? For example, students might be using the technology to increase their own achievement or teachers could be using the technology to increase their students’ achievement. In both cases, the answer to Part C would be students.</p>	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• “6th-grade students”</li> <li>• “3rd- through 5th-grade teachers”</li> <li>• “Students who were not proficient on last spring’s state math test”</li> <li>• “Algebra teachers who have previously used eZumi in their classroom”</li> <li>• “5th-grade English learners”</li> </ul>
<p><b>“D”</b> is the group of people you want to compare the group defined in “C” against. This group should be as similar to those identified in C as possible. In an ideal world, the only difference between the two groups would be the intervention. When thinking about this group, consider where the technology is being used. If the technology is being used in only three of five classes, then the other two classes might be the appropriate comparison group. Please note that it could be necessary to look at school- or district-wide data to obtain data for an appropriate comparison group.</p>	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• “Similar 5th-grade English learners with no access to eZumi Learning”</li> <li>• “Similar 5th-grade English learners who use Wizlet Math instead of eZumi Learning”</li> <li>• “Similar algebra teachers who received only six hours of professional development on the use of TrueStar”</li> </ul>

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## RESEARCH QUESTION EXAMPLES

The RCE Coach is designed to help answer four key types of research questions. Exhibit 2 lists examples of each type.

### Exhibit 2. Examples of research questions, by type

Category of research question	Examples of clear, narrow research questions
Does this technology achieve its intended outcomes?	<ul style="list-style-type: none"> <li>• Does a semester of daily use of Everest Learning Lab by teachers increase math test scores among middle school students compared with middle school students whose teachers do not use Everest Learning Lab?</li> <li>• Does a semester of daily use of Everest Learning Lab by teachers increase math test scores among students who are below grade level in math achievement compared with similar students whose teachers do not use Everest Learning Lab?</li> <li>• Does TrueStar increase math achievement among 2nd graders compared with similar 2nd graders who are using eZumi?</li> </ul>
Does this training help users engage with this technology more and/or better?	<ul style="list-style-type: none"> <li>• Does providing teachers with two days of training on how to implement a flipped classroom using Everest Learning Lab increase the number of videos posted in a four-week period, compared with teachers who did not receive the training?</li> </ul>
Does providing information to [parents, teachers, or students] change behavior?	<ul style="list-style-type: none"> <li>• Does sending automatically generated, weekly text reminders to parents increase time spent reading in eZumi over the course of a month among elementary school students, compared with similar students whose parents did not receive reminders?</li> <li>• Does an automatically generated text message to parents when a student is absent in homeroom increase students' attendance over the course of a semester, compared with similar students whose parents did not received text messages?</li> </ul>
Does this modification to the technology (or how it is implemented) make it work better?	<ul style="list-style-type: none"> <li>• Does changing the order of the content in eZumi for two months increase performance on benchmark assessments among middle school students, compared with similar students who see the content in the default (or different) order?</li> <li>• Does altering the interface to be more visual and less verbal increase lesson completion rates over the course of three weeks among students, compared with students who see the default interface?</li> <li>• Does using TrueStar in an after-school, peer-guided setting increase students' test scores on a benchmark assessments among English learner students compared to English learner students who use TrueStar in an independent lab-based setting?</li> </ul>

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