Toolkit

Part 3: Reflection guide

In the *Planning guide* (part one of this toolkit), you developed a plan to test your instructional strategy. In the *Excel analysis tool* (part two of this toolkit), you analyzed the effects of the strategy. In this third and final part of the toolkit, you will interpret your findings and determine what your next steps should be.

Using findings from the *Excel analysis tool*

After entering your data into the *Excel analysis tool*, look at the baseline equivalence, effect size, and confidence boxes in the Results section. These data provide information about how the implementation of a strategy may relate to student achievement in a given situation. Use figure RG1 to help interpret your findings.

As you enter the post-test data, delete the pre-test scores of any students who did not take the post-test. After doing that, double-check that you still have a “yes” in the baseline equivalence box (first box). If you do not, the students in the two classes had differences in achievement prior to implementing the strategy that cannot be accounted for in the analysis. If this is the case, your results are not interpretable because the effects may be related to preexisting differences. The effect size (last box on the Results screen) compares the scores on average from the comparison and experimental groups to show how much larger (or smaller) the average score is in the class where your new strategy was used compared with a class where it was not used. A positive effect means that the students who received the strategy did better on average, while a negative effect size means that the students who did not receive the strategy did better on average. The larger the effect size, the larger the difference between the groups. For example, an effect size of 0.50 indicates a larger effect than an effect size of 0.01.

The confidence in the effect size(middle box**)** shows the level of certainty in the effect size by estimating what the range of the effect size would be if the study were repeated many times with different groups of students (confidence intervals). The reported effect size describes only the effect on your group of students, whereas the confidence shows what you could likely expect if you used the strategy again on another group. If there is no confidence, it is unclear whether this strategy would work again. The *Excel analysis tool* requires a confidence level of 90 percent (Steiger, 2004), which means that it is 90 percent sure that the effect size would fall within a certain range if the study were repeated many times. If the range crosses zero (goes from negative to positive; for example, $-$0.1 to 0.5), it is uncertain whether the intervention would have a positive or a negative effect if implemented with a different group of students. Thus the results receive a “no” for confidence in the effect size. If the range does not cross 0, the results receive a “yes” for confidence in the effect size.

While the findings from one study cannot be used to conclusively state whether a strategy is effective, they do give some information about how that strategy worked in your setting. Formulas for the analyses are provided in appendix A.

What do your results mean?

Once all of your scores are entered, the *Excel analysis tool* provides an effect size and information on the confidence in the effect size. Your effect size can either be positive or negative, and there can either be confidence in your effect size or no confidence in your effect size. Figure RG1 can help you interpret the four possible effect size findings from the *Excel analysis tool*.

Figure RG1. Interpreting effect sizes

a. If there is no confidence, interpret the results cautiously because they cannot be distinguished from a finding of no effect.

Source: Authors’ compilation.

Regardless of the magnitude of effect size (closer to either +1 or -1) or whether it was positive or negative, remember to consider and reflect on other information you have when interpreting the findings. Respond to the questions in worksheet 4below to reflect on your results. Refer to worksheet 2 in the *Planning guide* when reflecting on results to remind yourself of the context of your groups.

Worksheet 4: Reflection

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| 1. **Consider the results**
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| If you had a positive effect size and the confidence interval was “yes” . . . |
| Why do you think the strategy worked well for this group of students? |
| What else was happening that may have helped the strategy to work well? (For example, were you using another strategy or resources that may have also helped?) |
| If you had a negative effect size and the confidence indicator was “yes” . . . |
| Why do you think the strategy did not work well for this group of students? |
| What else was happening, other than the strategy, that may have caused the result? (For example, were students disengaged?) |
| If you had either a positive or negative effect size and the confidence interval was “no” . . . |
| Do you think the strategy worked well with your class? What evidence do you have of this? (For example, did you see an increase in student engagement?) |
| Do you think that the strategy did not work well with your class? What evidence do you have of this? What else was happening, other than the strategy that may have caused the result? (For example, was there a long break in the unit?) |

Worksheet 4: Reflection (continued)

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| **2. Consider implementation** |
| Do you feel you had a good understanding of how to implement the strategy? If not, what additional information did you need to implement the strategy? |
| Do you feel you implemented the strategy the way in which it was intended to be implemented? If not, what adjustments did you make? |
| Do you feel the strategy you chose was appropriate for the class or lesson? Why or why not? |

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| **3. Consider the characteristics of the assessments used** |
| Were the content assessment questions clearly aligned to the learning objectives identified in the lesson or unit? |
| Were enough content assessment questions available that related to each of the learning objectives, indicating that the assessment captured the breadth of knowledge students needed to understand from the unit? |
| Was there enough time between the pre-test and post-test for students to learn the material? |
| Were the questions at an appropriate difficulty level to allow for increases in learning to be captured from pre-test to post-test? |

Worksheet 4: Reflection (continued)

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| **4. Consider next steps:****Based on your responses to the reflection questions, what steps do you plan to take?** |
| If you had positive results, will you: |
| Implement the strategy the same way in other classes? |
| Implement the strategy for a longer period of time? |
| Combine the strategy with other strategies? |
| If you had negative results, will you: |
| Adjust the strategy and try it again in the same or another class? |
| Test the strategy with different classrooms? |
| Adjust your assessments to better reflect your content? |
| Implement the strategy for a longer period of time? |
| Try a new strategy? |
| If you had positive or negative effect size results with no confidence, will you: |
| Look at other evidence of whether the strategy worked? |
| Test the strategy again in another class, because you believe the strategy worked well? |
| Adjust the strategy or try a different strategy because you do not think the strategy worked well? |