

Designing TVTP Pre- and Posttests

What are pre- and posttests?

Pre- and posttests are a common form of evaluating programs that seek to improve participant knowledge of a certain topic. They commonly consist of two identical tests that participants fill out before and after a training or similar intervention to enable the program and researchers to compare the difference in knowledge between these two points in time.

What do pre- and posttests do?

- › Pre- and posttests can measure knowledge gain from your training.
 - » Though you may want to ask participants about their confidence in their knowledge or ask them to self-report their level of knowledge, to empirically observe knowledge change, pre- and posttests must also include quiz-like questions with correct and incorrect answers.
 - » Pre- and posttests only measure knowledge change. They cannot be used to assess the value, accuracy, or benefits of a training.
- › Pre- and posttests can demonstrate how much participants knew about certain topics prior to training and how much they understood each part of the curriculum following a training. This helps projects adjust their interventions to be more effective and to demonstrate their outcomes.
- › If you want to measure the retention of knowledge in the long-term, you can incorporate these same test questions into follow-up tests. Follow-up tests are typically sent three to six months after the intervention.

When should I use a pre- and posttest design?

If you are holding an event to increase the knowledge of participants on a particular topic (e.g., a training). These events have predefined curriculum so you know ahead of time what participants should be taking away from the event.

Example #1: Jane is designing a training for law enforcement officials on risk and protective factors for targeted violence and terrorism. She has already designed the curriculum and plans to ask participants for feedback to learn more about what they did or did not like from the training. Jane also wants to know if the training participants absorbed the material and if her training was able to increase their knowledge on risk and protective factors.

Recommendation: Jane should use a pre- and posttest with identical test questions in this scenario to measure the knowledge gained by participants.

Example #2: Jane's grant includes funds to turn her in-person training for law enforcement organizations into an asynchronous, online webinar so that more law enforcement agencies can learn about this topic in the future.

Recommendation: Jane can use the same pre- and posttest in this scenario. In addition to measuring the outcomes of her webinar, the tests will also help her consider if there is a difference in the knowledge gain between her in-person trainings and the online trainings. This would also help to identify if there are certain areas that participants did not understand as well online. For online testing, Jane will need to determine if she can program the tests into the webinar software or if she will need to distribute the tests to participants in some other way, such as emailing it to them when they register for the webinar and when they've completed it.

When do I not need to use a pre- and posttest?

If the event that you are hosting is not focused explicitly on increasing knowledge of a specific curriculum.

Example #3: Michael is hosting a workshop that will convene representatives from various community-based organizations to network and share information about what their respective organizations are doing to address the issue of targeted violence. This will include speakers and panelists who will discuss their experiences addressing targeted violence.

Recommendation: It would not be appropriate for Michael to use a pre- and posttest for these workshop participants because they are not being trained on a set curriculum. In this case, his data collection would be more appropriate if he conducted a post-event survey focusing on participant satisfaction with the workshop and gauging the number of new connections that his workshop created.

How do I design a pre- and posttest?

Step #1: Determine what knowledge and understanding you want to measure. What are your learning objectives? What are the key concepts and ideas taught in the training?

Step #2: Develop major concepts and ideas into appropriate question formats. There should be a correct answer to each question.

✓ Recommendations

- › Good questions are simple, short, specific, and straightforward
- › The pre- and posttests should ask identical questions
- › Close-ended questions are usually best.
 - » Multiple choice questions
 - » True/False questions

Other Things to Consider

- › Most pre- and posttests have 8 to 10 questions in total, but they can be shorter or longer depending on the intervention.
- › Participants are more likely to take your pre- and posttests if you reserve time at the beginning and end of a training for participants to complete them, as opposed to asking them to fill it out before they come to the training or after they have left the training.
- › You do not need to administer pre-and posttests separate from other survey questions you are interested in asking. These test questions can be incorporated alongside questions asking about satisfaction, confidence, or other measures you may be interested in.
- › Ideally, you should choose a method to link each participant's pre- and posttests to each other based on the participant context and test format. This will enable you to examine the changes in knowledge at the individual level and can help you understand if participants from certain demographic or professional backgrounds performed differently. Some ways to do this include:
 - » If you are not concerned with collecting Personal Identifiable Information (PII), asking participants to write their name on their pre- and posttests
 - » Assigning each participant a random study identification number and asking them to write that number on their pre- and posttests. You can use a private list or spreadsheet to keep track of participants' numbers in case they forget between the pre- and posttest.
 - » For more sensitive populations, you can ask them to write down a color and pick a number between 1-100 (as an example) and ask them to write this on the pre- and posttest (e.g. Green17).
 - » For virtual contexts, provide a unique test link to each participant.
- › If you choose to implement a follow-up test, it should include the same test questions from the pre- and posttest questionnaires. Follow-up tests can also be used to ask if participants have applied any of the skills or knowledge gained from your event, in which case you can ask open-ended questions alongside the test questions.

⊗ Things to Avoid

- › Open answer questions (e.g., short answer questions, essay questions)
- › “Check all that apply” questions
 - » Instead, ask each item in a grid with yes/no responses. This will confirm that all response options were read and considered.
- › Overcomplicated or “trick” questions with confusing scenarios or response options
 - » You do not want people answering incorrectly because they didn't understand the question properly.

Pre- / Posttest Example Questions

What to avoid	Why to avoid it	What to ask instead
<p>I understand what risk factors may make someone vulnerable to violent extremism.</p> <ul style="list-style-type: none"> a. Agree b. Neither agree nor disagree c. Disagree 	<ul style="list-style-type: none"> ▶ This question asks the participant to self-report whether they understand something, rather than empirically demonstrating whether they know it. ▶ This question is asking for their opinion regarding their understanding. There is no correct answer to this question. 	<p>Which of the following is a risk factor that may make someone vulnerable to violent extremism?</p> <ul style="list-style-type: none"> a. Social isolation b. Depression c. Family-based discord
<p>Disengagement involves changing which of the following?</p> <ul style="list-style-type: none"> a. Feelings b. Beliefs c. Behaviors d. Religion e. A and B f. B and C g. A, B, and D 	<ul style="list-style-type: none"> ▶ This is a complex multiple choice question that can cause confusion or anxiety for the respondent. ▶ This question may take longer and increase the amount of time it takes to complete the test. 	<p>Disengagement involves changing one's _____?</p> <ul style="list-style-type: none"> a. feelings b. beliefs c. behaviors d. religion
<p>Please provide an example of a violent extremist ideology and why it fits this definition.</p> <p>_____</p> <p>_____</p> <p>_____</p>	<ul style="list-style-type: none"> ▶ This question is fill-in the blank. ▶ This question is double-barreled (it is asking respondents two questions at the same time). 	<p>Which is an example of a violent extremist ideology?</p> <ul style="list-style-type: none"> a. White supremacy b. Pacifism c. Mercantilism d. Sociology
<p>Can you describe a threat assessment?</p> <ul style="list-style-type: none"> a. Yes b. No 	<ul style="list-style-type: none"> ▶ This question asks the participant to self-report whether they know something as opposed to providing evidence that they know it. ▶ A respondent could think they know what a threat assessment is but in fact be wrong. 	<p>Which of the following does not describe a threat assessment?</p> <ul style="list-style-type: none"> a. Identifies potential threats b. Evaluates existing threats c. Accurately predicts terrorist capabilities d. Is conducted systematically

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