Pre- and Post- Testing Module

This module will help the user understand what pre/post-test are, how it can best be used, and provide practice activities on how to complete one.
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*(Disclaimer: This guideline is NOT original work of mine. It has been modified and adapted based on the literature from [http://www.wa.gov/esd/training/toolbox/CreatingTestsGuidelines.pdf](http://www.wa.gov/esd/training/toolbox/CreatingTestsGuidelines.pdf) and my past experiences and reflection of working with pre- and post-tests. You may circulate this to your colleagues outside SFCG also, but make sure that they will not mention it as an original work of SFCG.)*
What are Pre- and Post-Test?

A pre-test and post-test is designed to be used with workshops or curricula that have learning objectives as their guiding framework. Learning objectives create realistic estimates for the trainers of what the participants will learn and be able to do by the end of the training. These learning objectives are established in the design of the project.

**Learning Objective Example**

- Women legislators become better equipped with skills in policy formulation, engaging with the media, articulating and promoting women’s issues and public speaking.
- Aspiring and elected/appointed female politicians become empowered as decision-makers and leaders.

The pre-test and post-test are meant to collect data from before and after an event that will allow us to determine whether there was any change in knowledge, attitude, or skill (behavior) (KSA). The questions are selected by using the learning objectives, established workshop modules, or curriculum lessons. The questions are the same on both tests, and except for minor changes in verb tenses, they should always be exactly the same. The questionnaires should be developed collaboratively by the training team insuring that everyone has the same understanding of the questions. Also, the training team should take into account issues of the literacy skills of participants when developing questions for the pre-and-post tests.

What are pre- and post-test for?

A pre-test is given to participants before they begin the training as a means of measuring how much they already know about the topic/issues or the concepts to be discussed in the course. At the conclusion of the training, the participants fill in the post-test that measures their ability to apply knowledge or perform a specific task learned in the course.

Comparing participants’ post-test results to their pre-test results enables you to see whether the training was successful in increasing participant knowledge/attitude/skills.
of the training content. In addition, a pre- and post-test give trainers an understanding of which concepts or competencies were well received and integrated during the training and which ones need additional time or need to be covered using alternative methods.

Why take two test?

- A pre-test collects data on what participants already know about the topic(s) to be covered in a course. They are used at the end of the event to provide a comparison of how knowledge/attitude/skill of individual participants have changed as a result of a training or course. Trainers can also use them pre-workshop to help them know, before they conduct a workshop, what areas of content may need more attention.
- Trainers can compare the results of the two tests and identify areas where participants need additional practice or where there are gap in knowledge that need to be reinforced with follow-up work.
- Pre-test scores that don’t improve during the post-test tell the trainer that the training content and delivery methods may need to be modified, the focus of the training might need to be readjusted, or the test questions might not be looking at the appropriate aspects of the training.

How do I get started?

Step 1

Look at the learning objectives and content outline for the training. Identify the specific points that the participant must know (or is expected to know) by the end of the training. If a training or course does not have learning objectives, then they need to be developed before designing pre/post-tests. In the SFCG program, Radio For Peacebuilding (R4PB), for example, learning objectives are created during a Curriculum Summit and other youth leadership training. Design may be initiated by identifying activities believed to address a need and then learning objectives for each activity are identified, or the learning objectives may be identified first and activities will flow from them.

You may be developing similar trainings for different audiences. For example the learning objectives for youth R4PB could be slightly different than the learning objectives for R4PB training for working radio professionals. Thus, the pre/post-tests for each may differ between the trainings, but, again, for each training type and different audience, the questions on the pre/post should be identical for that type or audience.
### Step 2

Choose the best test item format for the learning objective you are measuring. Test items can take many forms:

<table>
<thead>
<tr>
<th>Test format</th>
<th>Learning objectives</th>
<th>Examples from Leadership Wisdom Initiative, SFCG Indonesia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short answer</td>
<td>Conceptual understanding</td>
<td>Explain the difference between interest and position.</td>
</tr>
<tr>
<td>Multiple choice items</td>
<td>Practical understanding</td>
<td>What does “coaching” mean? A, B, C, or D</td>
</tr>
<tr>
<td>Story problems</td>
<td>Attitude change</td>
<td>Please describe, in your own words, what does it means to be a compassionate leader?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Has your perspective on what it takes to be a compassionate leader changed over the course of the leadership training? Please explain.</td>
</tr>
<tr>
<td>Hands-on simulations</td>
<td>Skill demonstration</td>
<td>Develop a skills check-list. Apply the check-list by asking participants to participate in a role-play that uses these skills. Toward the end of the training, provide opportunities to practice and use the check-list again to compare change.</td>
</tr>
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</table>

It is possible to have all three methods in a single training depending on what you want to know or what the content of the training teaches. When you feel it most appropriate or needed, include open ended questions occasionally as follow-ups to gain more insight on the most important questions.

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Examples:

**Testing the skills:** While testing skills is best done by having practice exercises that can be observed by trainers and fellow participants who can give immediate feedback, you can ask skill-related questions on a pre/post-test, e.g., Rate your comfort level with facilitating a focus group or I feel confident that I can write a radio script on land owners rights. Give a scale of 1 to 5 (always use an uneven number) where 1 can be best or worst and 5 is the opposite. See example below.

**Knowledge testing:** The learning objective states that the participant will be able to list the different types of dialogue methods.

**Example**

In a training program in communication, skills we want to evaluate the results of the knowledge gained by administering a pre/post-test to each person enrolled in the training. One pre-test question reads “I can identify different types of communication methods” and the respondents are to answer on a five-point scale (Always, Often, Sometimes, Seldom, Never). One respondent indicates he “Seldom” can identify communication methods. During the training, the various methods become clearer to him and easier to understand. Thus, on the course post-test, he responds to the same item with “Often”. It appears that the program had a positive effect on knowledge where the participant’s frame of reference on the pre/post-test had changed.

**Perception testing:** If the learning objective states that people have changed perception or understanding about certain issue/subject or definition, it would be better to give a statement and ask them if they agree, disagree or are neutral. Or, ask them if it is true, false or ‘don’t know’. If the objective says that the participants of a peacebuilding M&E training will no longer consider ‘quantitative numbers’ as the only data that provides quality indicators for an evaluation, then we can ask a simple question related to this and ask them if they agree, or disagree.

**Conceptual understanding testing:** If the training objective states that the participants will have increasing understanding of leadership skills or the meaning of trust, then a multiple options question with different levels of leadership skills or trust levels based on a practical example would be a better question.

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**Case Example**
In the project, “Promoting International Freedom and Understanding in Indonesian Pesantrens”, the aim was to change student attitudes and understanding about tolerance and diversity. Pre and post project questionnaires were developed that provided clear indicators towards the patterns of these intended changes.

- **Step 3**
  Develop test administration instructions for the trainer. Provide the answers to the test questions, amount of time required for the test, and any other information the trainer needs to administer and correct the test. Probably the most important part of this is setting up an identification system that allows for comparing of individuals’ responses. There are various ways of doing this. People can put in the day and date of their birth (but do not ask for the year, as people are often sensitive about their age), the last four digits of one’s telephone number, the last four digits of an official identification card, e.g., driver’s license, U.S. Social Security number and the like. **If pre- and post-tests cannot be matched to each other, then they must be discarded.**

- **Step 4**
  Test your test! Ask another person to review your instructions and test items. Also, do a pilot test of the pre-test to check for the following points:
  - Are the instructions clear?
  - Is there enough information in each test item to determine the answer?
  - Are any test items misleading or confusing?
  - Are any of the questions leading, that is, do they too easily direct the respondent toward a particular answer by the way they are constructed?
  - How much time was needed to complete the test?
  Revise your test items and trainer instructions based on the feedback you receive.

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- **Step 5**
  In order to analyze the data, you need to develop a spread sheet (Excel, Access, SPSS, etc.) for entering the data from the pre and the post-test for each participant. This allows you to create graphs and charts, determine averages, etc. **Caution!!** The data for
the pre- and the post-test should be entered on separate pages. Once the data is entered, no one should change the data. All data analysis, creation of charts, graphs, etc. should be done on separate worksheets.

Hurray! You are done!

**How many test items should we write?**

There is no magic number of test items that you should create. However, you should write at least one test item for each learning objective, and probably no more than two if the objectives are complex or require thorough knowledge of a particular topic. Every session of a workshop usually has its own learning objectives. A pre/post-test needs to be a reasonable length. If they are too long, participants will not fill them out carefully. Generally, even a five-day workshop won’t have more than three to four sessions per day; a total of 20 questions max, which is in the normal range. An alternative would be to develop a pre and post for each day.

**How much time should be allotted for a test?**

Pre/post-tests are rarely designed to test participants on how quickly they can complete a test, therefore, it is better to provide enough time required for the participants (depending on their level) than not enough time. The reason for this is simple. Many adults experience test anxiety, read slowly to aid comprehension, have learning disabilities that often result in the need for additional time, or require more time to recall information from memory. Putting your test through a trial run will give you a better idea of the time needed to administer it.
Some tips for writing test items

General Tips

- Test items should be based on information that directly reflects the learning objectives.
- Don’t test on trivial details.
- Start with the easy, demographic questions to minimize test anxiety.
- Use clear and concise (and local) language when writing test items.
- Avoid using double negatives in the questions. This can make the test item difficult to understand and confuse the participant.
- Avoid trick questions that measure the participant’s ability to guess rather than their actual knowledge.

Multiple Choice Tips

- Test items should have only one correct answer. Make sure wrong answer choices are not plausible.
- Each test item should be independent and not based on a previous test item.
- Avoid unintentional clues such as “always,” “all,” and “never.”
- Don’t make the correct choice longer than the incorrect choices. If we do this, participants become “test-wise” and can guess the correct choice.
- It is advisable not to use “all of the above” or “none of the above” as choices.
- Create between 3 and 5 responses.

Example

If the question is: As a journalist, how do you rate your knowledge on rumor management skills?

We should provide a scale that includes all numbers between 1 and 5 (1, 2, 3, 4, 5) and ask participants to circle one.

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Self-Rating Tips

If we are asking participants to rate themselves on certain knowledge or understanding, we can give range 1 (poor or no knowledge) to 5 (excellent)
Case Example - Leadership Wisdom Initiative, SFCG Indonesia

<table>
<thead>
<tr>
<th>Topic</th>
<th>1 Strongly Disagree</th>
<th>2 Disagree</th>
<th>3 Neither Agree nor Disagree</th>
<th>4 Agree</th>
<th>5 Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I can identify specific situations that tend to create an intense emotional response (e.g., where I might lose my temper).</td>
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<td>2. I have the tools I need to help others address their own leadership challenges.</td>
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<tr>
<td>3. Good leaders should be able to figure out the best solution to a problem without asking others for help.</td>
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<tr>
<td>4. Leaders should only care about the group they represent.</td>
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<tr>
<td>5. Coaches should provide solutions to their clients regarding the best way to approach a situation.</td>
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</tr>
</tbody>
</table>

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**Additional Tips:**

**Performance Scenarios (simulation) Tips**
- Create performance scenarios that directly correlate to the learning objective, especially when you want a participant to demonstrate a specific skill.
- Make the simulated situation as realistic as possible.
- Provide directions that tell the participants what response they must provide (such as designing and operating an online Survey)
- If applicable, provide the parameters of the scenario (such as time limits) in the directions.

Example

If you are implementing a program on reconciliation, then you will focus on, _____, _____, _____, and _____.
- a. Peace, Justice, Compassion and Truth
- b. Compassion, Justice, Peace and Truth
- c. Peace, Justice, Mercy and Truth
- d. Forgiveness, Justice, Mercy and Truth
- e. Peace, Justice, Realization and Truth
• Develop a criteria check-list to assess skills pre and post.
• If applicable, provide the parameters of the scenario (such as time limits) in the directions.
• Develop a criteria check-list to assess skills pre and post.

**Fill-in-the-Blank Tips**

• Place blanks at or near the end of the test item.
• Use no more than 2 blanks per test item.
• Consider converting a fill-in-the-blank item to a multiple-choice item. These provide the participant with a defined set of choices and are easier for the trainer and data entry person to process.

**True/False or Agree/Disagree Statement Tips**

• True/False or Agree/Disagree forced choice questions may be useful with low literacy rates. But we need to remember there is always a 50/50 chance of getting the right answer whether participant knows or does not know.

If you follow the steps listed here, you will be able to create a successful pre/post-test that will provide you with the data you need to determine if an event met its training objectives.

**Enjoy creating pre- and post-tests!!**

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