

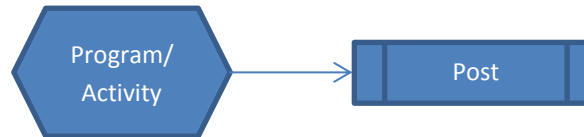
Key Survey Design Considerations for Program Evaluation in UC Cooperative Extension

Survey Designs

Adapted from University of Michigan's My Environmental Education Evaluation Resource Assistant Resource: Types of Evaluation Designs by Michaela Zint

Post Survey Design

Data collected at end of the program/activity.



Advantages

- Measures customer satisfaction and self-reported changes in knowledge, attitude, and intention.
- Useful when time is an issue or participants are not available before the program/activity begins.

Disadvantages

- There is no comparison data, so it is difficult to determine attribution and the magnitude of outcomes.
- Source of bias: social desirability

Pre and Post Survey Design

The same survey is used to collect data before the program/activity and again at the end.



Advantages

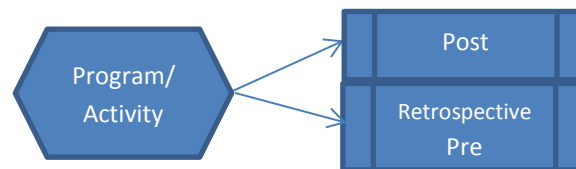
- Measures or tests knowledge gain between pre and post.

Disadvantages

- Requires some thoughtful planning and coordination in order to match pre and post survey responses to an individual for analysis.
- Source of bias: response shift

Post with Retrospective Pre Survey Design

Data collected at end of the program/activity. Participants are asked to assess current levels AFTER the event and to reflect back to their previous levels BEFORE the event.



Advantages


- Measures self-reported changes in knowledge, attitude, confidence, and intention with comparison data.
- Useful when a traditional Pre Survey is not feasible.
- Known to minimize response-shift bias that occurs with traditional Pre and Post Survey Design.

Disadvantages

- Source of bias: social desirability, recall, effort justification, cognitive dissonance. Consider pairing with a follow-up to mitigate these biases (see Post, Retrospective Pre, and Follow Up Survey Design on next page).

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Follow Up Survey Design
Data collected 3-6 months after program/activity.



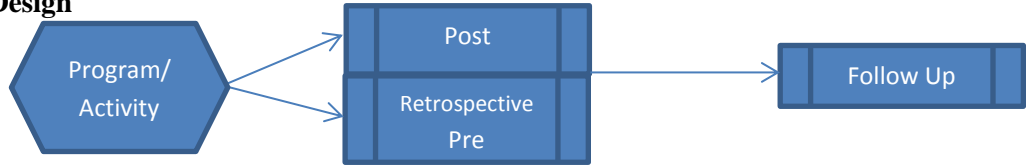
Advantages

- Only Follow Up Surveys can measure self-reported behavior change! Can also measure self-reported changes in knowledge and attitude.
- This type of evaluation design is useful when time is an issue or participants are not available after the program/activity ends.
- Can conduct multiple, paired, follow-ups over a longer period of time to assess sustained behavior change, if applicable.

Disadvantages

- There is no comparison data, so it is difficult to determine attribution and the magnitude of outcomes.
- Source of bias: recall

Post, Retrospective Pre, and Follow Up Survey Design
Three data collection points collected. Participants are asked to assess current levels AFTER the event, reflect back to their previous levels BEFORE the event, and complete a similar instrument in 3-6 months.



Advantages

- Rigorous but still practical survey method to measure self-reported behavior change.
- Follow-up comparison data is considered to be more conservative than data collected in other survey designs (mitigates bias).

Disadvantages

- Requires a lot of thoughtful planning and coordination compared to other survey designs to “pair” individual respondents’ data.
- Biases are still present but are minimized by a more conservative follow up response.

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There are many survey designs, such as using a control group, that are recommended to minimize biases and allow for attribution of outcomes to program. The five examples in the visuals above are presumed most practiced and relevant for UC Cooperative Extension contexts.

Key Survey Design Considerations for Program Evaluation in UC Cooperative Extension

Post, Retrospective Pre, and Follow Up Survey Design

This section provides considerations and tips for the Post, Retrospective Pre, and Follow Up Survey Design. There are many resources available at low or no cost online about creating and analyzing the other survey designs (for suggestions and technical assistance, contact ANR's office of Program Planning and Evaluation).

I. DESIGNING SURVEY QUESTIONS

Identify your event's intended outcomes so that your survey questions measure indicators of those outcomes. If you are presenting a lot of information, you may want to select some key recommended practices or important information as the focus of your survey questions. This design involves creating two surveys, the Post with Retrospective Pre survey that is administered at the end of a program/activity, and a Follow Up survey that is administered 3-6 months later. The table below includes considerations for designing your questions.

Post with Retrospective Pre Survey	Follow Up Survey
<p>Design questions to collect data about participants' immediate reactions to the event and perceptions of change in knowledge/attitude. Furthermore, Retrospective Pre responses provide baseline data for behavior change and Post responses tell you about participants' intention for behavior change.</p> <p>Types of questions to include:</p> <ul style="list-style-type: none"> • Post and Retrospective Pre questions about behaviors/practices prior to the event and intended behaviors/practices after the event • Post and Retrospective Pre questions about knowledge, attitude, confidence, etc. • Customer reaction questions about the quality of the training, improvements, future needs, etc. • <i>Name of event, date, location, name of trainer(s)</i> • <i>Participant ID code (name, assigned random code, or self-selected code; these are explained in more detail later in the handout)</i> • <i>Demographics. Consider required categories for reporting as well as categories that may be helpful for analyzing differences between groups: years in professions, type of position, region, etc.</i> • <i>Thank participants for their time.</i> 	<p>Design questions to collect data that is ideally about perceived behavior change. Keep it short and sweet. You may want to include more questions, but consider this: Is it very important to know if your participants sustained knowledge after six months, or is it more important to know if your participants made changes to their behavior?</p> <p>Types of questions to include:</p> <ul style="list-style-type: none"> • Behavior change questions (use the SAME strategies/practices/behaviors listed in the PRP survey so that responses may be compared) • Open-ended questions about any successes or barriers, if any, experienced in implementing the practices learned from the program/activity. • <i>Name of event, date, location, name of trainer(s)</i> • <i>Participant ID code (name, assigned random code, or self-selected code; these are explained in more detail later in the handout)</i> • <i>Demographics. Consider required categories for reporting as well as categories that may be helpful for analyzing differences between groups: years in professions, type of position, region, etc.</i> • <i>Thank participants for their time.</i>

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Sample behavior change questions with CATEGORICAL response scale

Post and Retrospective Pre Survey:

	AFTER the training, do you intend to do the following practices? Select one response below.				BEFORE the training, did you do the following practices? Select one response below.				
	Not at all	Slightly	Somewhat	Absolutely	Not at all	Slightly	Somewhat	Absolutely	Not applicable
Identify natural enemies									
Use reduced-risk pesticides									

Follow Up Survey:

	Do you do the following practices? Select one response.				
	Not at all	Slightly	Somewhat	Absolutely	Not applicable
Identify natural enemies					
Use reduced-risk pesticides					

Tips for analysis:

- Remove any unpaired data.
- Conduct “changes scores” analysis when response scales are categorical. Assume a rank to each response category (not at all=1, slightly=2, somewhat=3, absolutely =4). Subtract the follow up response and the pre response for each participant to see if individuals progress from a lower level or a higher level. You can report the number of individuals who progress for each question.
- Use histograms to show the percent of participants that respond a certain way to each question (e.g., changes between the percent of respondents who select “absolutely” between pre/post). Show the changes between pre, post, and follow up.
- Consider what the results mean for your program/activity. Did you notice more or less change than expected? If so, do you think it is related to the audience of the event, the way the survey was designed, or components of your program/activity? Do your open-ended questions help you to understand the way your participants responded? If you compare responses between groups (types of positions, years in profession, etc.), what does that tell you about your program/activity?

Key Survey Design Considerations for Program Evaluation in UC Cooperative Extension
Sample behavior change question with CONTINUOUS response type

Post with Retrospective Pre Survey:

AFTER the training, how many acres of native bee habitat do you intend to establish?	BEFORE the training, how many acres of native bee habitat were on your land?	Check if not applicable
_____ acres	_____ acres	

Follow Up Survey:

How many acres of native bee habitat are established on your land?	Check if not applicable
_____ acres	

Tips for analysis:

- Remove any unpaired data.
- Conduct “change scores” analysis as mentioned on previous page. This is especially recommended for smaller numbers of respondents.
- Conduct paired sample t-tests to compare the mean responses between pre and follow up for each question. Use caution with interpretation and only conduct with a large and representative number of participants.
- Use histograms to show the mean response of participants for each question to show changes between pre, post, and follow up.
- Consider what the results mean for your program/activity. Did you notice more or less change than expected? If so, do you think it is related to the audience of the event, the way the survey was designed, or components of your program/activity? Do your open-ended questions help you to understand the way your participants responded? If you compare responses between groups (types of positions, years in profession, etc.), what does that tell you about your program/activity?

II. METHOD OF FOLLOW UP SURVEY DELIVERY

Think about the best method for sending out the Follow Up Survey to participants several months after the program/activity. There are many methods for administering a Follow Up Survey, including mailing a paper survey, e-mailing with a link to electronic survey, conducting a phone survey, or sending a text message. Consider what method will receive the best response rate with your audience, as well as what is feasible for you. Once you decide on a method, make a plan for how you will collect the contact information you need from participants.

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III. CONTACT INFORMATION

Collecting contact information for the Follow Up Survey can occur before the program/activity (i.e., during the registration process) or after (i.e., a part of the End of Session Survey that is later detached for confidentiality). When you request contact information, always inform participants that you will be using it for program evaluation purposes. If you collect the contact information during registration, consider if it is important to you to track no-shows so you can not include them in the Follow Up Survey.

IV. PAIRED SAMPLES

Consider how you will “pair” responses to both surveys to an individual. It is highly recommended to pair responses so that you can compare responses of individuals (i.e., paired samples), rather than compare average group responses (i.e., independent samples). Furthermore, if you are planning to do more complex statistical analysis with your data, paired samples reduce sampling error compared to independent samples. Obtaining paired samples requires thoughtful planning and attention to detail. Consider three options below.

NAMES	ASSIGN RANDOM CODES	SELF-CREATED CODE WITH STRUCTURE
<p>Using names would be the easiest way to pair two responses. The participant writes his/her name on the End of Session Survey as well as on the Follow Up Survey, and the name becomes the link between the responses. The challenge with this is that anonymity is no longer maintained, and a person may respond differently when his/her name is attached to the responses.</p>	<p>Assigning a random code to participants is a good way to maintain confidentiality for survey responses. Anonymity is lost, but you can ensure participants that the code will only be used for analysis purposes and not for identifying respondents. Create a procedure to ensure that the random code is placed on End of Session Survey and the Follow Up Survey for that individual. An advantage to assigning and placing codes on the surveys is that the participants are not required to memorize/keep track of their code.</p>	<p>Let participants create their own code that they write on to their PRP and Follow Up surveys. Confidentiality and some anonymity will be maintained. You may want to provide the code structure that participants will be able to easily recall in several months. Example: <i>Create a code that includes the last four digits of your cell/home phone number plus their birth month (i.e., 2700july).</i> The problem with this is that there is a risk of obtaining duplicates or respondents forgetting which phone number they used. Another challenge is that participants may choose to skip this question on PRP and/or on the Follow Up survey for various reasons, so you may end up with unpaired responses. Use this option with caution!!!</p>

Sources

- Colosi, Laura and Dunifon, Rachel. (2006). What’s the difference?: “Post then Pre” & “Pre then Post.” Cornell University Cooperative Extension.
- Hill, Laura Griner and Betz, Drew L. (2005). Revisiting the retrospective pretest. *American Journal of Evaluation* 26(4) 501-517.
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- Zint, Michaela. (2009). An introduction to My Environmental Education Evaluation Resource Assistant (MEERA), a web-based resource for self-directed learning about environmental education program evaluation. *Evaluation and program planning* 09/2009; 33(2):178-9.

This handout is compilation of resources and personal experiences. It is a work in progress (version 12/17/15).

Comments/suggestions? Contact Kit Alviz with ANR’s office of Program Planning and Evaluation at kit.alviz@ucop.edu