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Basic Data Analysis Steps (Pre and Post Data Analysis, Post Data Analysis)

Project STAR

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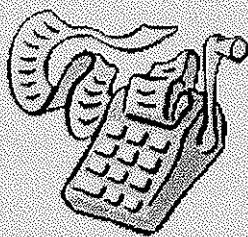
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Basic Data Analysis Steps

Pre and Post Data Analysis
Post Data Analysis



DRAFT

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Basic Data Analysis Steps

This packet is intended to assist AmeriCorps staff members who have had little or no data analysis experience. This document illustrates a simple way to analyze information using the example of a youth reading attitude survey. For further information, call Project STAR (800-548-3656) or visit the Web page at <http://projectstar.org>.

Steps Pre and Post Survey

(If you have "post" data only please turn to page 5.)

1. Gather necessary materials:
 - Evaluation Plans
 - Raw data
 - A good calculator
 - Important people's contact information (telephone numbers of program/activity leaders, people who collected data, evaluators)
 - Plenty of scratch paper and a "Data Analysis Summary Sheet" (see page 8)
 - Blank copy of the measurement instrument (to be used as a tally sheet)
2. Read over the Evaluation Plan. Determine if the information contained on the form is current. If not, make necessary updates.

Example: If you wrote in your Evaluation Plan's "Activity" section that tutoring would occur once a week and tutoring really occurred three times a week, **REVISE** the Evaluation Plan to reflect the change.

3. After you make all corrections/updates to the Evaluation Plan, check the Evaluation Plan to see if any **CLARIFICATIONS** need to be made.

Example: Let's say your "Standard of Success" (Number 6 on the Evaluation Plan, page 9) states that "Eighty percent (80%) of youth will improve in reading". Try to clarify or specify more fully what you believe will happen and by how much. For instance, "Eighty percent (80%) of the youth will increase their reading attitude from the pre to the post reading attitude survey, by one or more points on four out of ten items."

4. After you make all clarifications, review your Standard of Success and your measurement instrument. Is your instrument collecting the appropriate information that will allow you to determine if your program/activity reached the stated Standard of Success? If yes, continue on. If no, call Project STAR to discuss your options.

Example: If your instrument is a book check-out form and your Standard of Success reads, "Eighty percent (80%) of the youth will increase their reading attitude...", the instrument will not collect the information which will allow you to respond to your Standard of Success.

5. Decide which items on your instrument respond to your Standard of Success.

Example: You might have items on the survey that inquires about program improvement or the satisfaction with the services; for instance "my tutor was a good listener". For the time being, omit this item (and any others) which do not specifically address your Standard of Success. The above item would not be helpful in measuring attitudes towards reading.

6. Count the number of completed surveys you have and pair the pre and the post surveys together for each youth.
 - A. Record the number of youth responding to the pre survey on the summary sheet.
 - B. Record the number of youth responding to the post survey on the summary sheet.
 - C. Record the number of youth who responded to both the pre and the post survey on to the summary sheet (these surveys will be used to calculate amount of change that occurred from the pre to the post survey).

7. Take the pile of matched surveys of youth that responded to both the pre and the post survey and separate them into **three** piles.
 - Pile #1 should be pre and post surveys of youth that achieved the stated Standard of Success. Add the number of post surveys you have in this pile and transfer this number to the summary sheet.
 - Pile #2 should be pre and post surveys of youth that improved but did not reach the stated Standard of Success. Add the number of post surveys you have in this pile and transfer the number to the summary sheet.
 - Pile #3 should be pre and post surveys of youth that maintained or decreased from the pre to the post survey. Add the number of post surveys you have in this pile and transfer the number to the summary sheet.
8. To determine the percentage (%) of youth who achieved the stated Standard of Success, divide the number of post surveys in Pile #1 by the total number (Pile #1 + Pile #2 + Pile #3). Transfer this % to the summary sheet.

Formula:
$$\frac{\text{Pile \#1}}{\text{Pile \#1} + \text{Pile \#2} + \text{Pile \#3}} = \underline{\hspace{1cm}} \times 100 = \underline{\hspace{1cm}} \%$$

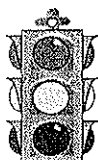
Example:

<u>Pile #1</u>	<u>Pile #2</u>	<u>Pile #3</u>	<u>Total</u>
60	15	5	80

$$\frac{60}{60 + 15 + 5} = \frac{60}{80} = .75 \times 100 = 75\%$$

Statement:

Seventy-five percent (75%) of the youth participating in this Activity increased their reading attitudes as measured by the pre and post reading attitude surveys by one or more points on four out of ten items.



NOTE: If it is easier for you and you have the resources, you can color code the piles with stickie notes (post-its). Pile #1 = Green, Pile #2 = Yellow, Pile #3 = Red.

9. To determine the percentage (%) of youth who improved or increased, add the number of post surveys in Pile #1 and Pile #2 together and divide by the total number (Pile #1 + Pile #2 + Pile #3). Transfer the answer to the summary sheet.

Formula: $\frac{\text{Pile \#1} + \text{Pile \#2}}{\text{Pile \#1} + \text{Pile \#2} + \text{Pile \#3}} = \underline{\hspace{1cm}} \times 100 = \underline{\hspace{1cm}}\%$

Example:

<u>Pile #1</u>	<u>Pile #2</u>	<u>Pile #3</u>	<u>Total</u>
60	15	5	80

$$\frac{60 + 15}{60 + 15 + 5} = \frac{60 + 15}{80} = \frac{75}{80} = .9375 \times 100 = 94\%$$

Statement: Seventy-five percent (75%) of the youth participating in this Activity increased their reading attitudes as measured by the pre and post reading attitude surveys by one or more points on four out of ten items. Although this is 5% less than the stated Standard of Success (80%), 94% of the students did make some improvement in their attitudes about reading.

Steps Post Data Only

(the first couple of steps are the same as having pre and post data)

1. Gather necessary materials:
 - Evaluation Plans
 - Raw data
 - A good calculator
 - Important people's contact information (telephone numbers of program/activity leaders, people who collected data, evaluators)
 - Plenty of scratch paper and a "Data Analysis Summary Sheet" (see page 9)
 - Blank copy of the measurement instrument (to be used as a tally sheet)
2. Read over the Evaluation Plan. Determine if the information contained on the form is current. If not, make necessary updates.

Example: If you wrote in your Evaluation Plan's "Activity" section that tutoring would occur once a week and tutoring really occurred three times a week, **REVISE** the Evaluation Plan to reflect the change.

3. After you make all corrections/updates to the Evaluation Plan, check the Evaluation Plan to see if any **CLARIFICATIONS** need to be made.

Example: Let's say your "Standard of Success" (Number 6 on the Evaluation Plan, page 10) states that "Eighty percent (80%) of youth will increase in reading". Try to clarify or specify more fully what you believe will happen and by how much. For instance, "Eighty percent (80%) of the youth will demonstrate positive attitudes about reading and books as indicated by their positive responses to six or more items on the ten item survey".

4. After you make all clarifications, review your Standard of Success and your measurement instrument. Is your instrument collecting the appropriate information that will allow you to determine if your program/activity reached the stated Standard of Success? If yes, continue on. If no, call Project STAR to discuss your options.

Example: If your instrument is a book check-out form and your Standard of Success reads, "Eighty percent (80%) of the youth will demonstrate positive attitudes about reading and books...", the instrument will not collect the information which will allow you to respond to your Standard of Success.

5. Decide which items on your instrument respond to your Standard of Success.

Example: You might have one item on the survey that inquires about program improvement or the satisfaction with the services; for instance "my tutor was a good listener". For the time being, omit this item (and any others) which do not specifically address your Standard of Success. The above item would not be helpful on a survey measuring attitudes towards reading.

6. Count the number of youth taking the post survey and record that number on the Data Analysis Summary Sheet.

7. Take all completed surveys and separate them into **three** piles.

- Pile #1 should be post surveys of youth that met your stated Standard of Success. (Example: 60 youth out of 80 gave positive answers to 6 or more items on a 10-item attitude survey.) —transfer total to Summary Sheet.
- Pile #2 should be post surveys of youth that responded positively on fewer than 6 items on the 10-item survey. (Anyone who answered positively to 1 to 5 items.) —transfer total to Summary Sheet.
- Pile #3 should be post surveys of youth that did not respond positively to any of the 10 items on the survey.—transfer total to Summary Sheet.

8. To determine the percentage (%) of youth who met the stated Standard of Success, divide the number of post surveys in Pile #1 by the total number (Pile #1 + Pile #2 + Pile #3).

Formula:
$$\frac{\text{Pile \#1}}{\text{Pile \#1} + \text{Pile \#2} + \text{Pile \#3}} = \text{ } \times 100 = \text{ } \%$$

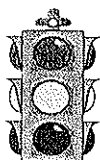
Example:

<u>Pile #1</u>	<u>Pile #2</u>	<u>Pile #3</u>	<u>Total</u>
60	18	2	80

$$\frac{60}{60 + 18 + 2} = \frac{60}{80} = .75 \times 100 = 75\%$$

Statement:

Seventy-five percent (75%) of the youth demonstrated a positive attitude about reading and books as indicated by their positive responses to six or more items on the ten items reading attitude survey.



NOTE: If it is easier for you and you have the resources, you can color code the piles with stickie notes (post-its). Pile #1 = Green, Pile #2 = Yellow, Pile #3 = Red.

To determine percentage (%) of youth with at least a little bit of a positive attitude toward reading, add the number of post surveys in Pile #1 and Pile #2 together and divide by the total number (Pile #1 + Pile #2 + Pile #3).

The total should be the same as your answer to #5.

Formula:
$$\frac{\text{Pile \#1} + \text{Pile \#2}}{\text{Pile \#1} + \text{Pile \#2} + \text{Pile \#3}} = \underline{\hspace{1cm}} \times 100 = \underline{\hspace{1cm}}\%$$

Example:

<u>Pile #1</u> 60	<u>Pile #2</u> 18	<u>Pile #3</u> 2	<u>Total</u> 80
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$$\frac{60 + 18}{60 + 18 + 2} = \frac{60 + 18}{80} = \frac{78}{80} = .975 \times 100 = 98\%$$

Statement: Seventy-five percent (75%) of the youth demonstrated a positive attitude toward reading and books as indicated by their positive responses to six or more items on a ten item reading attitude survey. Although this was 5% less than the stated Standard of Success of 80%, 98% of the students exhibited a somewhat positive attitude about reading.

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Call Project STAR (800-548-3656) for alternative ways to analyze your data if your Standard of Success does not lend itself to the described example.

Additional data analysis information can be found in Project STAR's Data Analysis packet.

Data Analysis Summary Sheet

Activity: _____

AmeriCorps program: _____

Date: _____ Your Name: _____

Necessary Information to write report:	Number or Percent (%)
1. Number of youth who started the program: [Participated during the first _____ week(s)]	
2. Number of youth who end the program: [Participated during the last _____ week(s)]	
3. Total number of youth who participated in the program:	
4. Total number of youth for whom you have baseline data: ¹	
5. Number of youth for whom you have "end-of-period" data:	
6. Number of youth for whom you have both baseline and "end-of-period" data:	
7. Number of youth who improved/increased to the stated Standard of Success. (Pile #1 or Green Pile):	
8. Number of youth who improved but did not meet the stated Standard of Success (Pile #2 or Yellow Pile):	
9. Number of youth who maintained or weakened (Pile #3 or Red Pile):	
10. Percent (%) of youth who achieved the stated Standard of Success:	%
11. Percent (%) of youth who showed some kind of improvement:	%
12. Optional: Number of youth who showed another form of improvement. Describe: _____	
13. Optional: Percent of youth who showed that form of improvement described in #12:	%
14. Other:	
15. Other:	

¹ Write N/A if you do not collect baseline data

Program Name Project STAR
Getting Things Done (Community Service)

Objective number or title _____

* Question numbers below refer to the objectives worksheets included with your AmeriCorps Renewal Application. 1/24/97

Activity: From <u>question 1</u> on the objectives worksheet*. ("Describe briefly the service activity you will be evaluating.")	
1. Who will receive services May be included in either <u>question 1 or 5</u> on worksheet. ("Describe briefly the service activity you will be evaluating." or "Estimate the number of people this activity will serve.")	
2. Number served From <u>question 5</u> on worksheet. ("Estimate the number of people this activity will serve.")	
3. Desired result From <u>question 2</u> on worksheet. ("Explain what change the described activity will produce.")	
4. Indicators (What concrete, observable things will you look at to see whether you are making progress toward your desired result?)	
5. Method of measure From <u>question 3</u> on worksheet. ("Describe the method you will use to determine if the described change occurs.")	
6. Level (standard) of success From <u>question 4</u> on worksheet. ("Try to define a level of success you hope to achieve.")	
7. Name/title of instruments used From <u>question 3</u> on worksheet. ("Describe the method you will use to determine if the described change occurs.")	
7a. Who and how many people will respond/fill out the instruments? (Note: this may not apply for all instruments, for example, testing water quality.)	
8a. Who is to collect the data? 8b. How often?	
9a. Who will aggregate the data? (tally on paper or enter into computer) 9b. How often?	
10a. Who will analyze the data? 10b. How often?	
11. Who will turn the data into a report?	