

# Guide to Analyzing AdvancED Survey Findings

2007 Edition



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## Overview

Quality schooling depends upon reliable data from a variety of sources for informed decision making. Among the most important sources of information are the school's stakeholders. Students, teachers, support staff, parents, and community members hold a significant stake in the success of their school.

Using an inventory or survey to collect information about stakeholders' perspectives is a common method of collecting data. It is efficient, cost-effective, and can provide a variety of viewpoints in a short amount of time. Some risks are also inherent in any data collection methodology. Biased items or poor response rates can lead to misinterpretation. Also, the extent to which "perceptions" reflect reality is often questioned. However, in combination with other information, surveys provide meaningful data to help generate conclusions. This guide is provided to help you use survey data to inform your decisions.

## Understanding the Qualities of Items and Responses

**Inventories, surveys, and questionnaires** are made up of **items**. An item can be a question, a statement, or even a partial statement; however, its purpose is to elicit a **response**. Sometimes a set of responses is already provided to choose from and other times it is necessary for participants to generate their own responses.

Items which require participants to choose from a set of pre-determined responses are called **forced-choice** or **closed-ended** items. Some examples of forced-choice items include the following:

- Your Gender  
Responses: Male, Female
- The educational program offered to students is of high quality  
Responses: Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree, Do not Know or Does not Apply

One type of forced-choice item is an **ordered response** item. The most common use of an ordered response item is to measure an individual's attitude, opinion, or behavior. Measuring perceptions generally requires an equally-divided set of responses where responses form a continuum from low to high. In the example above, "Strongly Agree" has the highest value, "Agree," a slightly lower value, etc. The lowest value is "Strongly Disagree." Other examples of ordered responses are frequency of occurrences or level of satisfaction.

Each ordered response is given a response weight. The "Likert" scale, or a five-point agreement scale, utilizes five response weights beginning with "Strongly Disagree" valued at 1, "Disagree" valued at 2, "Neutral" valued at 3, "Agree" valued at 4, and "Strongly Agree" valued at 5. One advantage of using ordered response items on a survey is to allow for the use of two of the most common methods of summarizing data: the mean (average) and standard deviation (SD).

Communicating the results of an ordered response item requires that both the number and percent of item responses be shown, as well as common statistics such as the mean/average and standard deviation.

Reporting Data from Ordered-Response Items									
	Number of Cases	Average	Standard Deviation	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	NA
				5	4	3	2	1	
				N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
<b>My schoolwork is fun.</b>	25	3.2	1.4	5 (20%)	5 (20%)	10 (40%)	0 (0%)	5 (20%)	

Chart 1

Sometimes two or more ordered-response items relate to the same topic and the response weights from each item can be combined to create a *Topic* or *Subscale* rating. The combination of ratings from “like” items creates a measure of something broader than any individual item. A topic rating may be used instead of individual item ratings in an analysis.

There is another type of forced-choice item that has responses that are not ordered. This type of item is known as a **categorical response** item. In the example of *Gender*, *Male* is not greater or higher than *Female*; they are just different from each other. Other examples of common categorical responses are *Grade in School*, *Job Role*, or *Yes/No*.

A final type of item is one where the respondent needs to compose a response. This is called an **open-ended** item. This type of item is used to gather information and generate insight. Written open-ended responses are not easy to systematically analyze but provide a diversity of perspectives to help further an understanding of a particular topic or issue.

An example of an open-ended item is:

- What are three ways for improving the quality of the instructional programs at Lighthouse Elementary School?

Respondents might share their perceptions of strengths, weaknesses, or areas for improvement in an open-ended item.

## Summarizing Responses to Items

There are many common ways to summarize responses from **forced-choice** items. They include the following:

- **Frequency Counts**  
This is often called “N” or “number of cases” which is the number of persons responding to a specific item or choosing a specific response
- **Percent**  
The percent of individuals who select a particular response in relation to the entire set of responses for an item

- **Measures of Central Tendency**  
 These are known as the average (mean), median, and mode  
 Mean = The mathematical average of a set of ordered item responses.  
 Median = The single value in a distribution of ordered item responses above and below which 50% of the responses fall.  
 Mode = The most frequent item response. Sometimes there may be more than one mode if two or more item responses have the same frequency.
- **Measure of Variability**  
 Standard Deviation (SD) is a measure of the dispersion or variability around the mean—it provides a measure of the extent to which responses vary on a specific item
- **Topic/Subscale or Composite Score**  
 A summary rating of all items in a topic or the entire survey that is calculated by adding the item weights from each response for all the items and then dividing by the number of responses
- **Summaries of Text**  
 Summarizing responses from open-ended items can be quite challenging. Some strategies to summarize responses include the following:
  - Accumulate all the responses from each item in a database or word processing document. Associate a respondent ID# with each response since it may be helpful in analyzing respondent's views across items.
  - Create a set of categories related to the content of the responses and tabulate the number of respondents whose responses relate to each category.

Strategies for analyzing qualitative data will be discussed briefly in the final section of this guide.

## Interpreting Survey Data—Five Common Errors

Interpreting survey data is greatly facilitated by understanding the concept of “error.” There are a number of different types of errors that make the interpretation of survey responses somewhat problematic. A survey that is too short or isn’t focused on a well-defined topic may have little reliability or *internal consistency*. A survey that is taken under poor conditions can cause the unreliability of responses. Using summary statistics to describe the performance of a small number of respondents can lead to misinterpretation. A change in procedures from one administration to the next can result in erroneous conclusions. Additionally, the reading level of survey items might affect the validity of responses.

The extent to which survey items provide consistent and stable information is the extent to which they will provide good information for making decisions. There are a number of different sources of error to consider in interpreting the results of surveys. The following are some errors that are most frequently encountered. Some strategies to approach each scenario can be found in Appendix A.

## Non-Respondents

An important first step in interpreting findings is to know if the collected surveys represent the entire group that was to be surveyed. An individual may not have received a survey at all or may have received a survey but did not respond. The following are several scenarios that illustrate how non-response can lead to error.

**Scenario 1:** The *Survey of Instructional and Organizational Effectiveness* was sent to all principals in a large urban school district and only 50% of the 120 surveys were returned. In examining the characteristics of the respondents, 66% of the surveys were from women principals; however, 66% of the principals were men.

**Q** *What could be done to make the sample a better representation of the principals?*

**Scenario 2:** A school district sent out *Parent Opinion Inventories* to all parents in two high schools. A total of 36% of the inventories were returned after telephone contact was attempted with the parents. In examining the data, it was determined that only 4% of the parents at School 1 completed the inventory whereas 52% of the parents completed the inventory in School 2.

**Q** *What should be done to make the sample a better representation of School 1?*

**Scenario 3:** School Improvement Team members gave out 125 *Community Opinion Inventories* to their neighbors and only ten were returned.

**Q** *What should the School Improvement Team do to make the sample a better representation of the community?*

A common means of determining if missing data may be problematic is to collect demographic information and then compare this information to the known demographic information of the population. For example, if your school is racially diverse, and you would like to ensure that your respondents represent the same racial diversity, you might use a stratified sampling technique to create an equivalent sample before analyzing the inventories. See the *Guide to Administering Your Surveys* to read more about different sampling strategies.

## Missing Survey Responses

Missing data is a constant problem with interpreting survey data. Finding the extent to which respondents did not complete various items can help you gain an understanding of the meaning of the responses.

**Scenario 4:** Students were administered the *High School Technology Survey*; however, there were a large number of students who left the following two items blank.

- I know how to use a variety of computer input and output devices.
- I can compare and contrast the impact of various technologies on daily life.

**Q** *What questions should you ask to determine why students did not respond to the items?*

**Scenario 5:** Teachers completed the *Teacher Opinion Inventory* at the end of their Friday staff development meeting. The inventory was expected to take 20 minutes, however; by the time the teachers received their inventories, only 10 minutes

remained until their classes started. This resulted in only 50% of the teachers responding to item #40, and 17% responding to item #50.

Q *What should be done to deal with the problem of missing data?*

## Poor Quality Survey Items

Error due to poor quality survey items is a constant threat to interpretation. Although it doesn't seem like writing good items should be so hard, there are times that items are vague or prejudiced due to the viewpoint of an item writer. Some rules of thumb for quality items include the following. An example of a "problem item" follows each item-writing rule.

- a) Carefully examine items that have double negatives. These are difficult for respondents.  
Teachers are not willing to help me when I am not in school.
- b) Bias in items leads a respondent to answer in a certain way, evoke emotions, or present a limited portrayal of an issue.  
The new dress code is a disgrace to humanity.
- c) Two items in one question make it difficult to determine whether they are responding to one or both questions.  
Teachers need more time for staff development and grading assignments.
- d) The wording in an item has shared meaning for all the respondents. There should be no acronyms or jargon that might confuse a respondent.  
ADA reports are helpful in assessing student attendance.
- e) When an item requires that information be recalled from the past, it should include a time frame.  
I participated in staff development.
- f) If background information is needed, include it with the survey.  
I agree with the current dress code.
- g) There are multiple items on important topics to help in determining if there is any bias in items. Following is an example of two items that might provide better information than either one alone.  
Staff development is important for increasing student achievement.  
Student achievement is impacted by appropriate staff development.
- h) Make sure that the items are accurate.  
The students should eat lunch in classrooms when the cafeteria is closed.  
(*The cafeteria had never been closed during the lunch hours.*)

## Measurement Error

One way to minimize error is to use topic or subscale ratings. A subscale is an aggregation of the responses across related items. Using a topic rating will provide a more stable measurement if you are examining items for pre/post gain because it minimizes the error inherent in any single item.

The relationship between the items and their topic or subscale is very important. The extent to which items measure the same topic is the extent to which each subscale score is said to be reliable or internally consistent. The guide, *Validity and Reliability of AdvancED Surveys*, contains “Cronbach Alpha” correlation coefficients for each subscale and total items for each AdvancED survey. The alpha reliability coefficient is based on a series of correlations between item responses and the total score. It ranges from -1.0 to +1.0. Reliability of .90 to 1.00 is excellent, .80 to .89 is good and .70 to .79 is fair. If lower than .70 or a negative coefficient, then the reliability is questionable.

## Survey Administration Problems

The method used in administering a survey is one of the easiest places to look for error. If a survey is not considered to be important, the respondents may not provide thoughtful responses. It is extremely important that the survey administrator have a positive attitude in order to motivate respondents to give their best effort.

**Scenario 6:** *The Student Opinion Inventory* was administered to all students in an elementary school during their gym period. Each student sat on the floor in the gym, received an inventory and was asked to complete it.

**Q** *What would be a better way to administer the inventory?*

**Scenario 7:** At the end of a faculty meeting, staff are given the *Teacher Technology Survey* and asked to return the survey by the next day to the principal’s secretary. All surveys have the teacher’s name on the top of the scan sheet.

**Q** *How would you be able to better assure teachers that their responses are confidential?*

To assist you in looking for error in your own survey administration, a worksheet can be found in Appendix B.

## Analyzing Forced-Choice Survey Data

Analysis, or breaking a whole into parts, is based on comparisons. A number of comparisons can be made with survey item responses. There are generally four types of strategies used in an analysis of survey responses:

### 1. Snapshot Analysis

An analysis of the variation or distribution of responses on one survey at one administration.

### 2. Longitudinal Analysis

An analysis of survey responses across time for the same item or topic.

### 3. Multiple-Variables Analysis

An analysis of differences in responses across groups of respondents.

### 4. Interaction Analysis

An analysis of the relationships between responses.

These analyses can be used to help refine the overall direction of a school or system by illuminating strengths, limitations, and/or changes needed. The following pages are some questions and examples of how one might analyze survey responses using each strategy.

## 1. Snapshot Analysis

A snapshot presents a picture of responses at one point in time. A set of responses to a survey that was administered in the fall to all students at a specific grade level is an example of a snapshot. Although a “snapshot analysis” is not adequate for determining whether schools have improved, it can provide staff with some valuable information, especially for use in a school or district/system profile. The following two charts are examples of snapshot analyses.

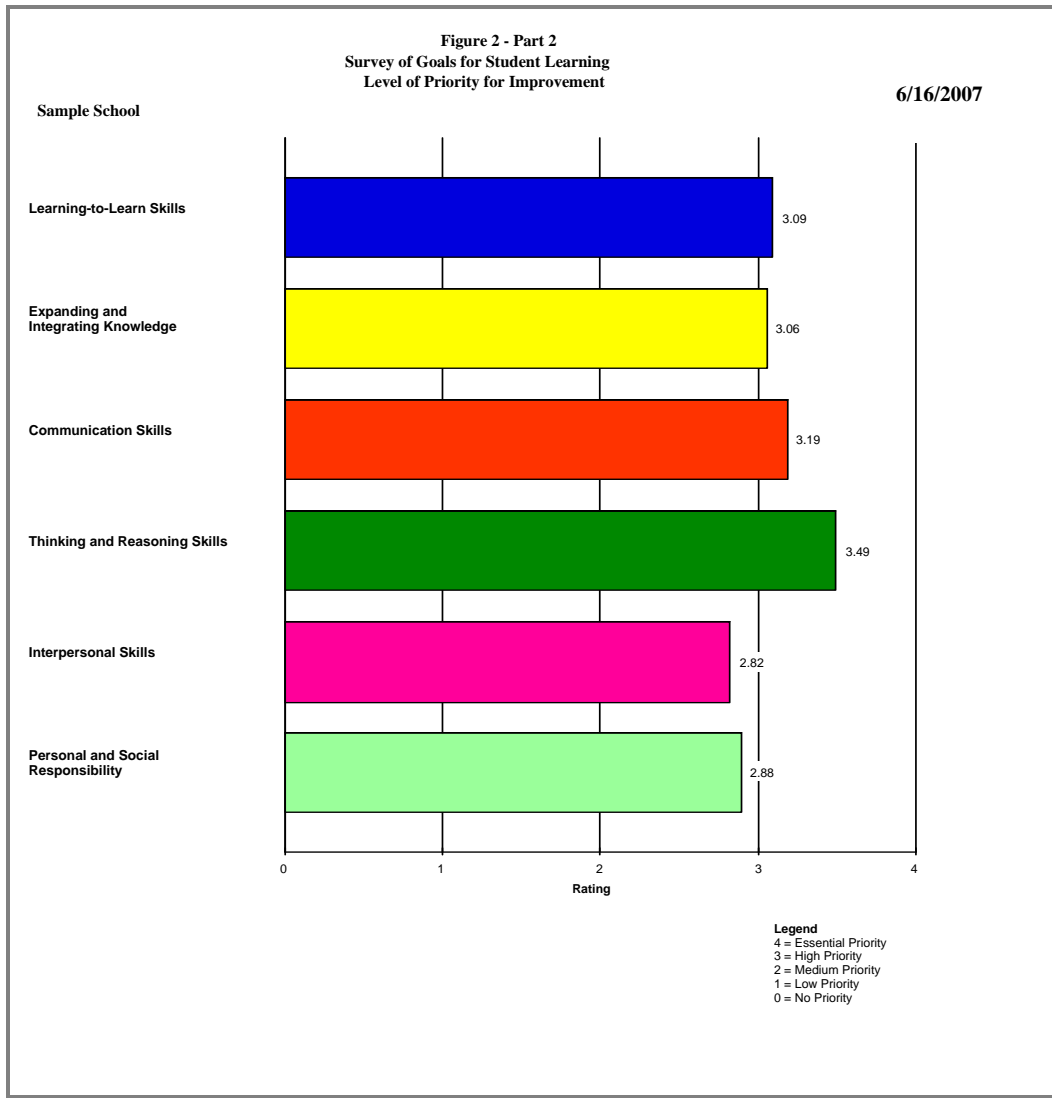


Chart 2  
Snapshot Analysis – Survey of Goals for Student Learning Report

### Item Response Frequencies and Percents

Examining the number of respondents who completed each item and the percent per response is one of the most common methods to analyze forced-choice survey responses.

- Q What is the most often chosen response for a particular item?
- Q Do missing responses have any impact on the interpretation of the percent for each response?
- Q If the responses from two or three “like” questions are examined, is there a clearer picture of the overall attitude of the respondents?
- Q Which items have the most responses in the favorable or unfavorable categories?

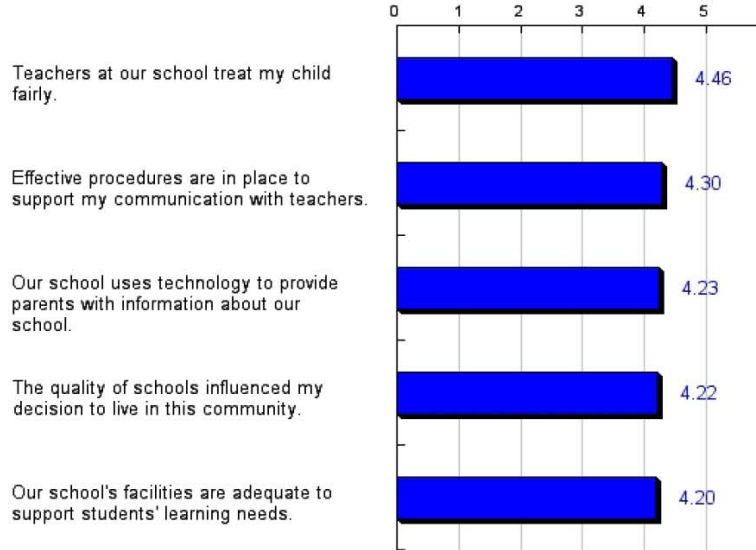
### **Item/Topic Mean or Average**

A “mean” is one of the measures of central tendency. It is common to use the averages or means to compare like ordered response items. When the means of a series of items are listed from the highest to the lowest, or lowest to highest, this is called a “rank order” list. This list can help to identify the items receiving the most and least favorable responses.

*In using an average to convey responses, the following questions might be asked:*

- Q How might you describe the mean? For instance, a mean of 4.0 (using a five point agreement scale) suggests that on the average respondents “agree.” Means above 3.5 and below 2.5 are closer to the next value on the scale as are means above 4.5 and below 1.5. Generally, a mean of 4 or above is good and below 3 is an area of possible concern.
- Q Does the distribution of the individual responses to an item make the “mean” a good measure of central tendency? Would a median or mode be better?
- Q What are the highest and lowest rated items or topics in a survey using the mean values to determine the ranking?

Top 5 Items



SA - Strongly Agree - 5  
 A - Agree - 4  
 N - Neutral - 3  
 D - Disagree - 2  
 SD - Strongly Disagree - 1  
 NA - Do Not Know/Not Applicable - No Weight

(Note: score of 3 or above indicates neutral to positive opinions.)

Question Number 30, "Class sizes at our school are appropriate for effective learning," has the same average as the last item.

Chart 3  
 Snapshot Analysis - Rank Order Report

### Item/Topic Standard Deviation

The standard deviation (SD) is a measure of dispersion or variability around the mean or average. A standard deviation for an individual item is a measure of the extent to which respondents varied in their responses to a specific item. Greater standard deviations indicate a greater variation among survey respondents. A standard deviation for a topic is based on the deviation in responses for all items included in the topic.

*In using a standard deviation to convey the meaning of a response, the following question might be asked:*

**Q** Is the standard deviation of an item 1/6 of the range of the item responses?

With a five-point scale, a standard deviation near .83 is considered to be fairly typical. A standard deviation below .53 suggests that an item has less variation among respondents and a standard deviation of 1.13 or more indicates greater variation.

### Maximizing the use of a Snapshot Analysis

Some strategies that can be helpful in interpreting snapshot data include the following:

- Summarize the data in several ways. A frequency distribution of scores, along with a review of central tendency and dispersion statistics is helpful.
- Monitor the extent to which a school assessed the respondents who were supposed to take the survey. It is harder to identify the number of non-respondents with only a snapshot.
- Be careful in comparing topics from different *Opinion Inventories*. The items within each topic are often different in each inventory.
- There are a number of like items on *Opinion Inventories*. Consider comparing equivalent items.

A worksheet for completing a snapshot analysis can be found in Appendix C, Worksheet 2.

## 2. Longitudinal Analysis

A “longitudinal” analysis presents a comparison of survey responses at two or more points in time. A comparison of responses from surveys that were administered in the fall and the spring to faculty who participated in a staff development strand is an example of a longitudinal analysis.

### Longitudinal Comparison of Survey Administrations

A longitudinal analysis is most commonly used to portray trends over time. Baseline data or the current status of attitudes, opinions, or behaviors is very important in both a profile and also in providing the basis for examining change. The mean or average for items/topics is frequently used to compare values longitudinally, across time.

*In examining averages over time, the following questions might be asked:*

**Q** Are there any differences in the means or averages over time? Does the data show upward, downward, or no trends?

- Q Do the individual responses to each item provide you with additional information on why the averages or standard deviations may be different across time?
- Q Were there any changes in the administration procedures from one administration to the next? If so, could this have affected the results of the trend?
- Q Are you making decisions that require more precise measurements?  
The topic averages provide more stability and less error.

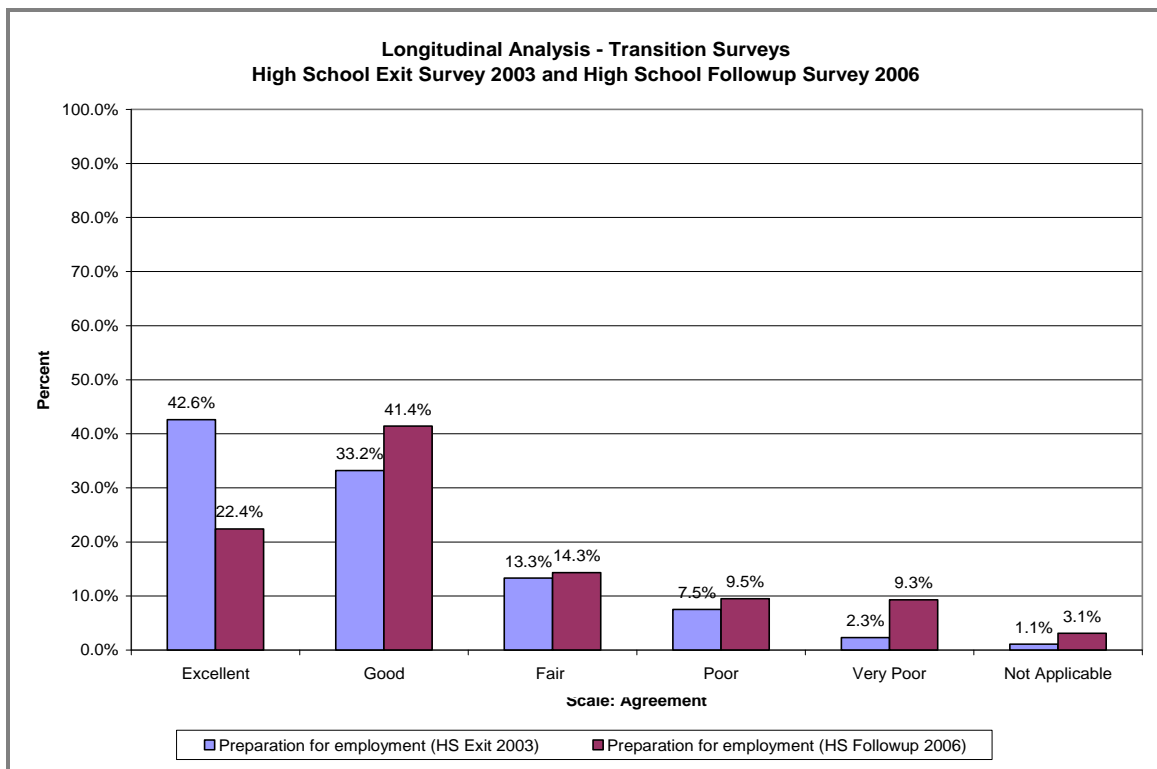


Chart 4

### Maximizing the Use of a Longitudinal Analysis

Some strategies that can be helpful in interpreting longitudinal data include the following:

- Make sure that the administration is consistent from one survey to the next.
- Place individual item data from multiple administrations in a database like Excel® or DataPoint® to provide easier comparisons.
- Examine the demographic characteristics of the respondents at each point in time to be sure that they are comparable.
- If you are using a baseline and post-test analysis to examine change, be careful to analyze the items that are most closely related to an intervention. You will increase the ability to show change.

A worksheet for completing a longitudinal analysis can be found in Appendix C, Worksheet 3.

### 3. Multiple-Variable Analysis

Comparing items from several different groups within a survey or between surveys are all examples of a “multiple-variable analysis.” Examining the difference in perceptions of the school’s quality of the education between experienced and non-experienced faculty is an example of a multiple variable analysis. Comparing different respondent groups (teachers vs. community) is another example.

#### A Multiple-Variable Analysis of Groups within a Survey Administration

A common analysis of survey data is a comparison of the characteristics of subgroups of respondents. For example, you may believe that the responses from beginning teachers are different from those of experienced teachers. This can be analyzed by comparing item/topic responses, averages, and standard deviations between these two groups. By analyzing the responses of a specific group, it may be easier to pinpoint specific areas of strength or limitations.

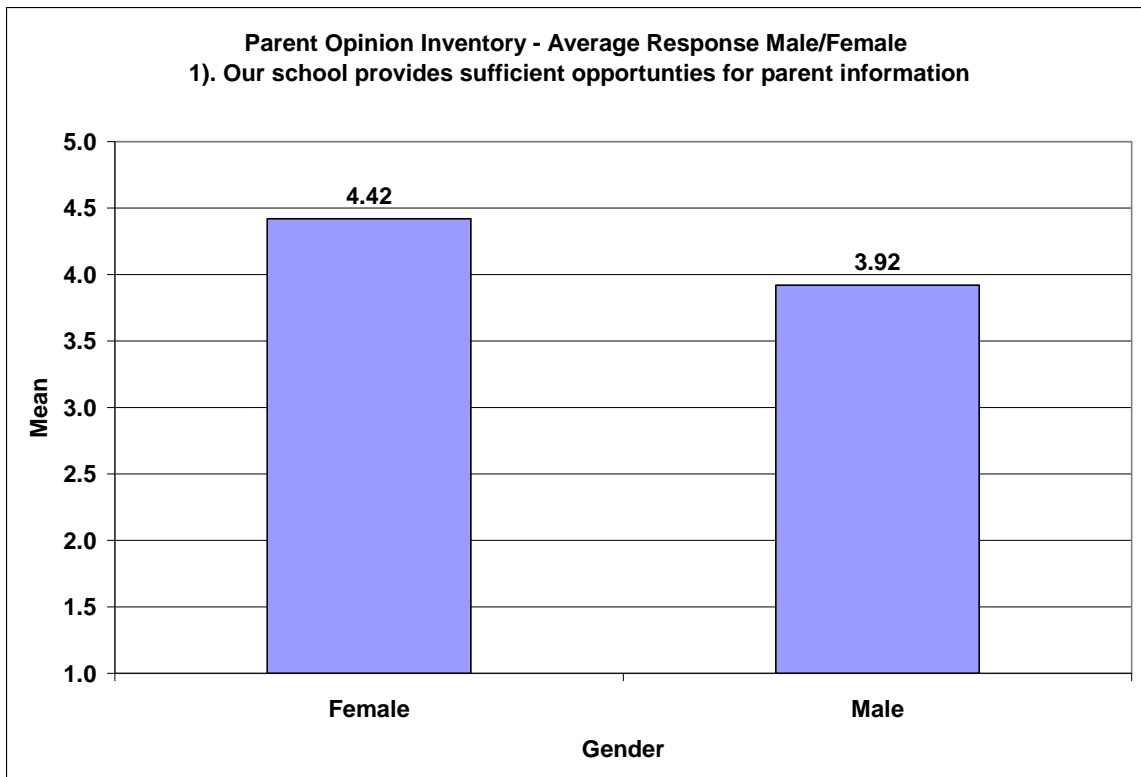


Chart 5  
Disaggregated Report by Gender

*In examining differences between disaggregation groups, the following questions might be asked:*

- Q** Did you collect data from all the disaggregation groups that were important to you? Sometimes you can create a disaggregation group by using an item on the survey.  
For example, with an item on “satisfaction with the school” you can create a group of satisfied and dissatisfied respondents and then compare their responses on other items.

- Q Are there any differences in the means/averages/standard deviations between disaggregation groups?
- Q Do the individual responses to each item provide you with additional information on why the averages or standard deviations may be different?

### A Multiple-Variable Analysis of Comparison Groups

Oftentimes comparisons between multiple-respondent groups are helpful. You might compare your school to another school in your system. Also, the *National Pattern of User Response Report* provides a summary of all the responses that AdvancED has collected during a specific school year. Looking at your own results from multiple perspectives is helpful in analyzing survey response data.

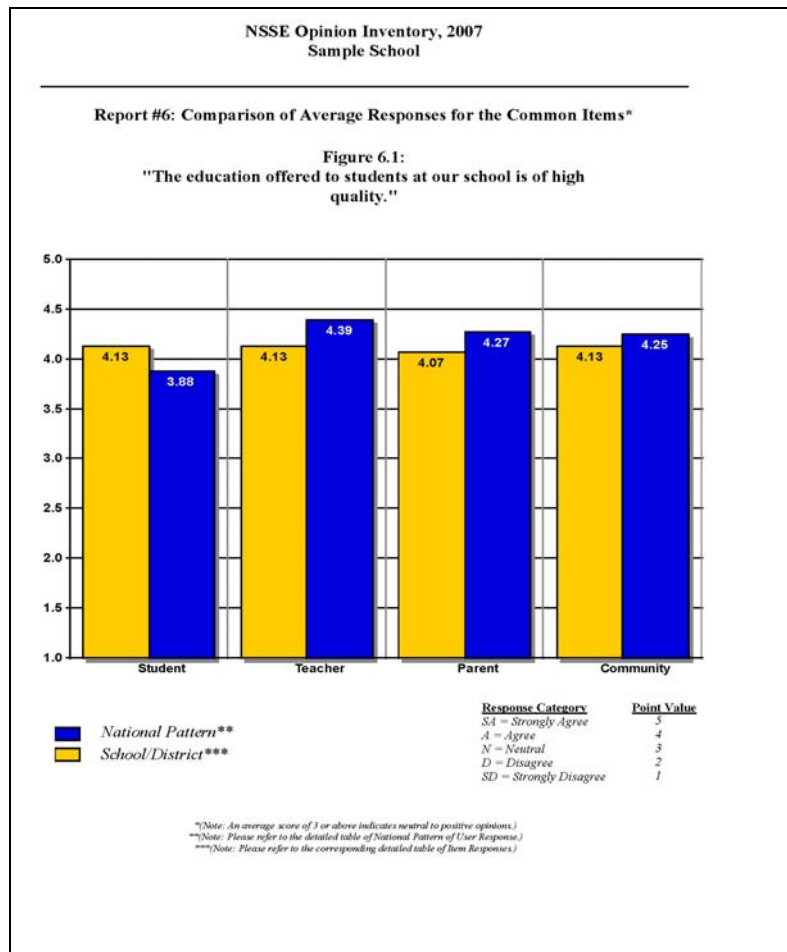


Chart 6

In examining differences between respondent groups, the following questions might be asked:

- Q** Are there any differences in the means or averages between respondent groups? Do the individual responses to each item provide additional information as to why the averages or standard deviations are different?
- Q** Do the different respondent groups come from the same population? Do the groups have similar demographics such as a similar socio-economic status?
- Q** Do the individual responses to each item provide you with additional information on why the average or standard deviations may be different?

**Maximizing the Use of a Multiple-Variable Analysis**

Some tips that can be helpful in interpreting multiple variables include the following:

- Review the type of data (i.e., ordered or categorical) that you will include in a multivariate analysis. Different types of data may impact the interpretation.
- Use a statistical analysis when appropriate to determine the extent to which the groups are significantly different from each other (e.g., t-test, F-test, effect size).

A worksheet for completing a Multiple-Variables Analysis can be found in Appendix C, Worksheet 4.

**4. Interaction Analysis**

Examining interactions or relationships between two survey items or topics is an “interaction analysis.” Scatter-plots or cross tabulation tables are both displays that can be used to examine the relationship of two items or topics with each other.

The visual presentation of data in this format provides an easy way to see if there are factors that might contribute to better understanding of the meaning of the data.

Interaction Analysis Showing the Relationship Between Two Items					
Item 15: There are no problems with bullies at my school. (read down)					
Item 13: The principal and teachers care about the students. (read across)					
SCALE		Don't agree	Not Sure	Agree	TOTAL
Don't agree	Count		2	8	<b>10</b>
	% of Total	0	4.9%	19.5%	<b>24.4%</b>
Not sure	Count			5	<b>5</b>
	% of Total	0	0	12.2%	<b>12.2%</b>
Agree	Count		1	25	<b>26</b>
	% of Total	0	2.4%	61.0%	<b>63.4%</b>
<b>TOTAL</b>	Count		3	38	<b>41</b>
	% of Total	0	7.3%	92.7%	<b>100.0%</b>

**Elementary Student Opinion Inventory**

Chart 7

In examining interactions, the following questions might be asked:

- Q Is the relationship between the two item/topics linear? Do respondents tend to agree or disagree on both items?
- Q Does a scatter-plot show a linear relationship between the two items or is it curvilinear? Could a Pearson  $r$  be computed to express the extent to which there is a relationship?
- Q Does missing data affect the interaction?

### Maximizing the use of an Interaction Analysis

Some tips that can be helpful in interpreting an interaction include:

- Use a statistical analysis to help determine the strength of a relationship. A weak relationship may not be worthy of additional analysis. There are also interactions that may not be linear. Use a visual display to determine if the data suggests other types of relationships.
- Use techniques to investigate causal pathways. For example, if perceptions of satisfaction are different for males and females, then it is important to understand other factors that might be related to gender. Finding likely root causes can be helpful in interpreting interaction data.

A worksheet for completing an interaction analysis can be found in Appendix C, Worksheet 5.

The last worksheet (6) in Appendix C provides a way to analyze the results from more than one survey.

## Analyzing Open-Ended Survey Data

Although text information is exceedingly rich data, it can be very time consuming to analyze. Two common strategies for analyzing comments are a **content analysis** and determining **summary quotations**.

### Content Analysis

A “Content Analysis” is a process of developing coding categories that are then utilized to categorize individual responses. For example, if one of the open-ended questions is “What are the three best things about this school?” One might expect responses that relate to a number of common categories. By reviewing comments, specific categories can be generated and then used as the basis for generating a frequency count for the category.

For example, three students’ answers to the question “What are the three best things about this school?” might look like the following:

Respondent 01 – I like my friends. They are great to hang out with.  
Football is a great activity.  
My technology teacher has really helped me learn.

Respondent 02 – I feel very safe in my school.  
My math teacher is willing to help me, even before school,  
if I need extra help.  
Lighthouse school is the best school in the state. People  
are so caring.

Respondent 03 – I don't like anything about this school.

Reviewing the comments, it would appear that there are several categories that were identified by students. Once these categories are identified, it is possible to provide a count for each time a respondent mentions a certain category. Using a student ID code in association with a category allows “marks” to be placed on the grid to denote a response. When the entire analysis is completed, a table could be created including the frequency counts for each category.

Respondent #			
Category	01	02	03
Friends	✓		
Activities	✓		
Teacher	✓	✓	
Nothing			✓

Chart 8

### Summary Quotations

Sometimes a respondent will write an articulate response to an open-ended question, which captures the essence of a state of affairs, issue, or problem. It is common to use a quote from a respondent in a report. However, it is important to use quotes judiciously. Sometimes a compelling quote can create a different picture than that created by other data. In using quotes, analyze the extent to which they are consistent with other findings that you have obtained.

## Using Surveys for Decision Making and Planning

Surveys present a snapshot of information to school staff. Surveys reflect a point in time in a context that is always changing. In most cases, survey data confirm what one already believes to be true. If it does not, this does not necessarily mean that any individual or the survey is incorrect. It means that more information is needed to interpret the survey results. Such follow-up investigations may involve school/community meetings, one-to-one interviews, review of school practices and policies, or a more detailed survey on a specific topic. AdvancED *Custom Surveys* allow you to design your own survey with the support of AdvancED staff. You can choose to administer it in either web format or paper-scannable format. Using AdvancED surveys is one tool in the search to better understand a school or system is a valid use of the instruments as they have been developed.

## Appendix A

### Possible Strategies for the Scenarios

**Scenario 1** – Take the 60 completed surveys and use a stratified random sampling procedure to select surveys based on gender. Place the surveys in two piles, dividing them by male and female respondents. Number the surveys from females and use a random number table to select female surveys that will yield a ratio of 34% females to 66% males; then you can use the surveys selected for the analyses.

**Scenario 2** – Use only the results from School 2. Talk with the staff at School 1 to find out what would be the best strategies to increase the parents' response rate. Begin the survey collection process again at School 1.

**Scenario 3** – Take a map of the attendance area of the school and divide it into smaller areas to sample from. Send a letter from the superintendent or principal with a survey to each sampled community member asking for his/her help in completing the survey. Ask each school improvement team member to follow-up with specific community members.

**Scenarios 4 and 5** – Items that have low response rates are not interpretable. It is better to leave these items out of any analyses. You may want to collect some qualitative information on why certain items were not responded to. This may be helpful in interpreting the lack of survey data more accurately.

**Scenario 6** – If the staff administering the survey wants quality data, they need to administer the survey in a quiet environment, with no distractions and supervision. *Guide to Administering Your Surveys* contains a number of ideas for minimizing error in administering a survey.

**Scenario 7** – Confidentiality can be enhanced by a number of safeguards. First, clearly describe to the participants how the data will be handled. Collect the data in a location that assures participant privacy. Asking staff external to the school to collect and analyze data will help in a politically charged situation. An ID# should be used rather than participant's name if it is important to follow-up with those who have not responded.

# Appendix B Interpreting Surveys—Common Errors

Worksheet 1

Name of Survey \_\_\_\_\_ Name of School \_\_\_\_\_



### Non-Respondent Error

Number of individuals who are targeted to receive a survey

\_\_\_\_\_ Number of surveys analyzed

\_\_\_\_\_ Percent response rate

Which of the following describes your response rate?

Check one:

- 90% – excellent
- 70 to 89% – good
- 50 to 69% – fair
- <50% *or* <15 responses is a concern



### Missing Survey Responses Error

List the item number where 25% or more of the respondents left the item blank or chose “not applicable.”

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Which of the following describes your missing values?

Check one:

- No items listed – excellent
- 1 to 10% of the total items – good
- 11 to 20% of the total items is fair
- More than 21% of the total items – a concern



### Poor Quality Survey Item Error

Read through each item on the survey and list the item number of any item that is not clear in your school or district context.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Which of the following describes the items that are not relevant to your school?

Check one:

- No items listed – excellent
- 1 to 10% of the total items – good
- 11 to 20% of the total items – fair
- More than 21% of the total items – a concern



### Measurement Error

Please write in the Average and Standard Deviation of each “topic” or “subscale” on the survey.

	Average	Standard Deviation
Topic 1	_____	_____
Topic 2	_____	_____
Topic 3	_____	_____
Topic 4	_____	_____
Topic 5	_____	_____
Topic 6	_____	_____

Are any of the averages or standard deviations significantly different from the rest?

Check one:

- They are all the same – excellent
- There are few differences – good
- There are a number of differences – fair
- Much variation between topics – possible concern



### Survey Administration Error

Please check any of the problems that may have occurred with the survey administration.

- Inadequate time to complete the survey
- Distractions during the survey administration
- Lacked confidentiality
- Poor respondent attitude

Which of the following describes the survey administration conditions?

Check one:

- Excellent administration – no problems
- Good administration – only a minor problem
- Fair administration – a number of minor problems
- Major administration problems – concern

### Summary

Count the number of each rating:

\_\_\_\_\_ Excellent  
\_\_\_\_\_ Good  
\_\_\_\_\_ Fair  
\_\_\_\_\_ Concern

With two or more concerns, or fair, the data should be interpreted with caution.

## Analyzing Survey Responses

### 1a. Snapshot Analysis for a 3-point scale survey e.g., Elementary Student Opinion Inventory

Worksheet 2

School/System \_\_\_\_\_

<b>ITEMS</b>	*Item Percent	The item number(s) with the greatest percentage of favorable responses (>79%)
		The item number(s) with the greatest percentage of unfavorable responses (>24%)
	*Item Responses	The item number(s) for the item(s) with the highest average (Avg.) rating (>1.99 on a 3-point scale)
		The item number(s) for the item(s) with the lowest average rating (<1.5 on a 3-point scale)
	***Standard Deviation of Item Responses	The item number(s) for the item(s) with the highest standard deviation (>.87 est. on a 3-point scale)
		The item number(s) for the item(s) with the lowest standard deviation (<.27 on a 3-point scale)
<b>TOPICS</b>	**Average (Avg.) Topic Responses	Initials for the topic(s) or category(s) with the highest average (Avg.) rating (>1.99 on a 3-point scale)
		Initials for the topic(s) or category(s) with the lowest average (Avg.) rating (<1.5 on a 3-point scale)
	***Standard Deviation of Topic Responses	Initials for the topic(s) or category(s) with the highest standard deviation (>.87 est. on a 3-point scale)
		Initials for the topic(s) or category(s) with the lowest standard deviation (<.27 est. on a 3-point scale)
*The item response percent helps you determine outliers among items **The average item response helps you determine the central tendency of scores ***The standard deviation helps you determine the variation of scores		
<b>What conclusions can you draw from this data?</b>	Strengths:	
	Needs Improvement:	
What other information do you need to better support your conclusion(s)?		

# Analyzing Survey Responses

## 1b. Snapshot Analysis for a 4-point scale survey e.g., Inventory of School Effectiveness

Worksheet 3

School/System \_\_\_\_\_

<b>ITEMS</b>	*Item Percent	The item number(s) with the greatest percentage of favorable responses (>79%)
		The item number(s) with the greatest percentage of unfavorable responses (>24%)
	*Item Responses	The item number(s) for the item(s) with the highest average (Avg.) rating (>2.99 on a 4-point scale)
		The item number(s) for the item(s) with the lowest average rating (<2.0 on a 4-point scale)
	***Standard Deviation of Item Responses	The item number(s) for the item(s) with the highest standard deviation (>1.00 on a 4-point scale)
		The item number(s) for the item(s) with the lowest standard deviation (<.40 on a 4-point scale)
<b>TOPICS</b>	**Average (Avg.) Topic Responses	Initials for the topic(s) or category(s) with the highest average (Avg.) rating (>2.99 on a 4-point scale)
		Initials for the topic(s) or category(s) with the lowest average (Avg.) rating (<2.0 on a 4-point scale)
	***Standard Deviation of Topic Responses	Initials for the topic(s) or category(s) with the highest standard deviation (>1.00 on a 4-point scale)
		Initials for the topic(s) or category(s) with the lowest standard deviation (<.40 on a 4-point scale)
<p>*The item response percent helps you determine outliers among items            **The average item response helps you determine the central tendency of scores            ***The standard deviation helps you determine the variation of scores</p>		
<b>What conclusions can you draw from this data?</b>	Strengths:	
	Needs Improvement:	
What other information do you need to better support your conclusion(s)?		

# Analyzing Survey Responses

## 1c. Snapshot Analysis for a 5-point scale survey e.g., Opinion Inventories

Worksheet 4

School/System \_\_\_\_\_

<b>ITEMS</b>	*Item Percent	The item number(s) with the greatest percentage of favorable responses (>79%)
		The item number(s) with the greatest percentage of unfavorable responses (>24%)
	*Item Responses	The item number(s) for the item(s) with the highest average (Avg.) rating (>3.99 on a 5-point scale)
		The item number(s) for the item(s) with the lowest average rating (<2.5 on a 5-point scale)
	***Standard Deviation of Item Responses	The item number(s) for the item(s) with the highest standard deviation (>1.13 on a 5-point scale)
		The item number(s) for the item(s) with the lowest standard deviation (<.53 on a 5-point scale)
<b>TOPICS</b>	**Average (Avg.) Topic Responses	Initials for the topic(s) or category(s) with the highest average (Avg.) rating (>3.99 on a 5-point scale)
		Initials for the topic(s) or category(s) with the lowest average (Avg.) rating (<2.5 on a 5-point scale)
	***Standard Deviation of Topic Responses	Initials for the topic(s) or category(s) with the highest standard deviation (>1.13 on a 5-point scale)
		Initials for the topic(s) or category(s) with the lowest standard deviation (<.53 on a 5-point scale)
<p>*The item response percent helps you determine outliers among items            **The average item response helps you determine the central tendency of scores            ***The standard deviation helps you determine the variation of scores</p>		
<b>What conclusions can you draw from this data?</b>	Strengths:	
	Needs Improvement:	
What other information do you need to better support your conclusion(s)?		

## Analyzing Survey Responses

### 2. Longitudinal Analysis

Worksheet 5

School/System \_\_\_\_\_

<b>ITEMS</b>	**Average (Avg.) Item Responses	The item numbers for the 9 items with the greatest positive change or trend in average (Avg.) ratings from the first to the last administration of the survey
		The item numbers for the 9 items with the greatest negative change or trend in average ratings from the first to the last administration of the survey
		The item number(s) for the item(s) of interest to you with no change from the first to the last administration of the survey
	***Standard Deviation of Item Responses	The item number(s) for the item(s) that show the greatest positive change in standard deviation
		The item number(s) for the item(s) with the greatest negative change or trend in standard deviation
<b>TOPICS</b>	**Average (Avg.) Topic Responses	Initials for the topic(s) or indicators with the greatest positive change or trend in average (Avg.) rating
		Initials for the topic(s) or indicator(s) with the greatest negative change or trend in average (Avg.) rating
		Initials for the topic(s) or indicators that are of interest to you with no change from the first to the last administration of the survey
	***Standard deviation of Topic Responses	Initials for the topic(s) or category(s) that show the greatest positive change in standard deviation
		Initials for the topic(s) or category(s) that show the greatest negative change in standard deviation
<p>*The item response percent helps you determine outliers among items                      **The average item response helps you determine the central tendency of scores                      ***The standard deviation helps you determine the variation of scores</p>		
<b>What conclusions can you draw from this data?</b>	Strengths:	
	Needs Improvement:	
What other information do you need to better support your conclusion(s)?		

# Analyzing Survey Responses

## 3. Multiple-Variable Analysis

Worksheet 6

School/System \_\_\_\_\_ Name of Survey \_\_\_\_\_

In order to best use this analysis, you should generate “predictions” about which group you expect to be higher or lower on different items and topics. Then complete the worksheet.

ITEMS	**Average (Avg.) Item Responses	The item numbers for the items with the greatest positive difference (higher for the item you expect to rate higher) in average (Avg.) ratings between groups
		The item numbers for the items with the greatest negative difference or no difference in average ratings between groups
		The item number(s) for the item(s) of interest to you with no change from the first to the last administration of the survey
	***Standard Deviation of Item Responses	The item number(s) for the item(s) that show the greatest positive difference in average (Avg.) rating
		The item number(s) for the item(s) with the greatest negative change or no difference in average (Avg.) rating
TOPICS	**Average (Avg.) Topic Responses	Initials for the topic(s) or indicators with the greatest positive difference or trend in average (Avg.) rating
		Initials for the topic(s) or indicator(s) with the greatest negative difference or trend in average (Avg.) rating
		Initials for the topic(s) or indicators that are of interest to you with no change from the first to the last administration of the survey
	***Standard Deviation of Topic Responses	Initials for the topic(s) or category(ies) that show the greatest positive change in standard deviation
		Initials for the topic(s) or category(ies) that show the greatest negative change in standard deviation
<p>*The item response percent helps you determine outliers among items                      **The average item response helps you determine the central tendency of scores                      ***The standard deviation helps you determine the variation of scores</p>		
What conclusions can you draw from this data?	Strengths:	
	Needs Improvement:	
What other information do you need to better support your conclusion(s)?		

## Analyzing Survey Responses

### 4. Interaction Analysis

Worksheet 7

In order to use this analysis, you need to begin with the individual case data. Use the following template to structure an interaction analysis. A spreadsheet program such as Excel® is very helpful.

Name of Survey \_\_\_\_\_ School/System \_\_\_\_\_

Interaction Analysis Showing the Relationship Between Two Items							
Statement A (read down) Statement B (read across)							
SCALE		1	2	3	4	5	TOTAL
1	Count % of Total						
2	Count % of Total						
3	Count % of Total						
4	Count % of Total						
5	Count % of Total						
<b>TOTAL</b>	Count % of Total						<b>100%</b>

Chart 9

What conclusions can you draw from this data?

Strengths

Needs Improvement

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What other information do you need to better support your conclusion(s)?

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# Analyzing Results from Multiple Surveys

School/System \_\_\_\_\_

Worksheet 8

**Instructions:** Use the conclusions from your completed worksheet “Analyzing Survey Responses” to generate a list of “strengths” and “needs improvement” that are based on two or more surveys. After these are complete, generate some questions that would help you better understand the data.

## Surveys Administered:

### Opinion Inventories

- \_\_\_\_\_ Community
- \_\_\_\_\_ Parent
- \_\_\_\_\_ Preschool Parent
- \_\_\_\_\_ Elementary Student
- \_\_\_\_\_ Middle/High School Student
- \_\_\_\_\_ Teacher
- \_\_\_\_\_ Preschool Teacher
- \_\_\_\_\_ Support Staff

### Indicators Surveys

- \_\_\_\_\_ Survey of Goals for Student Learning
- \_\_\_\_\_ Survey of Instructional and Organizational Effectiveness

### Breakthrough Surveys

- \_\_\_\_\_ Data Readiness Inventory
- \_\_\_\_\_ Survey of Beliefs
- \_\_\_\_\_ Inventory of School Effectiveness
- \_\_\_\_\_ Survey of Implementation

### Technology Surveys

- \_\_\_\_\_ Teacher
- \_\_\_\_\_ Fifth Grade Student
- \_\_\_\_\_ Eighth Grade Student
- \_\_\_\_\_ Twelfth Grade Student

### Transition Surveys

- \_\_\_\_\_ Eighth Grade Exit Survey
- \_\_\_\_\_ High School Exit Survey
- \_\_\_\_\_ High School Follow-up Survey

Strengths

Needs Improvement

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Questions

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