DepED
DEPARTMENT OF EDUCATION

Inquiries, Investigation, and Immersion

Quarter 2 Module 1- Lesson 1

Finding the Answers to the Research Questions (Data Analysis Method)

DEPARTMENT OF EDUCATION
REGION V BICOL

Inquiries, Investigations, and Immersion
Quarter 2 Module 1 – Lesson 1: Finding the Answers to the Research Questions (Data Analysis Method)

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Module 1

Finding the Answers to the Research Questions
Lesson 1- Data Analysis Method

This module will give you guidance on the appropriate method analysis of data obtained. It will enable you to think critically and solve problems, organize and evaluate information, and understand and manipulate data. It will guide beginner researchers to investigate, communicate results, conceptualize framework of the research paper, and practice the research integrity and intellectual honesty.

In the previous weeks, you learned about the understanding and ways to collect data along with the research design, population and sampling method, and data collection procedure.

Lesson 1 of this module will help you familiarize on the data analysis method along with the intellectual honesty in research.

Learning Target

In this module, you are expected to analyze data with intellectual honesty using suitable techniques.

Vocabulary List

The following terms will be encountered in the lesson:

- *Data* - factual information [as measurements or statistics] used as a basis for reasoning, discussion, or calculation.
- *Data Analysis* - a process of understanding data or known facts or assumptions serving as the basis of any claims or conclusions you have about something.
- *Bias* - defined as any tendency which prevents unprejudiced consideration. In research, bias occurs when “systematic error [is] introduced into sampling or testing by selecting or encouraging one outcome or answer over others”
- *Plagiarism* - is presenting someone else’s work or ideas as your own, with or without their consent, by incorporating it into your work without full acknowledgement. All published and unpublished material, whether in manuscript, printed or electronic form, is covered under this definition.
- *Intellectual honesty* - is honesty in the acquisition, analysis, and transmission of ideas. A person is being intellectually honest when he or she, knowing the truth, states that truth.

Warming Up

Task 1. *The Prior*

A. Using a concept web, write words/ideas that you can connect to the given words (DATA and ANALYSIS). From those words you thought, try to construct your own meaning of DATA ANALYSIS. Use a separate sheet of paper in answering the activity.

Your own definition of the word DATA ANALYSIS

_____
_____.

B. Familiarize yourself with dos and don'ts in citing sources in research. Then group the words accordingly using the template. Use a separate sheet of paper in answering the activity.

Plagiarism	Honesty	Selective Reporting	Impartiality
Disinformation	Fabrication	Transparency	Logical Fallacies
Proper Citation	Bias	Intellectual Property Rights	False Analogies

Correct Practice	Wrong Practice

Learning About It

Data Analysis Methods

In reporting the results, the researcher stays close to the statistical findings without drawing broader implications or meaning from them. Further, this section includes summaries of the data rather than the raw data (e.g., the actual scores for individuals). A results section includes tables, figures, and detailed explanations about the statistical results.

Before writing this section:

- Rewrite the Chapters 1-3 before or after data analysis and before writing Chapter 4.
- Rewrite the chapters in past tense, wherever applicable, and make corrections for actual data collection and data analysis procedures.

What is the first thing that comes to mind when we see data? The first instinct is to find patterns, connections, and relationships. We look at the data to find meaning in it.

Similarly, in research, once data is collected, the next step is to get insights from it. For example, if a clothing brand is trying to identify the latest trends among young women, the brand will first reach out to young women and ask them questions relevant to the research objective. After collecting this information, the brand will analyze that data to identify patterns — for example, it may discover that most young women would like to see more variety of jeans.

Data analysis is how researchers go from a mass of data to meaningful insights. There are many different data analysis methods, depending on the type of research. Here are a few methods you can use to analyze quantitative and qualitative data.

Analyzing Qualitative Data

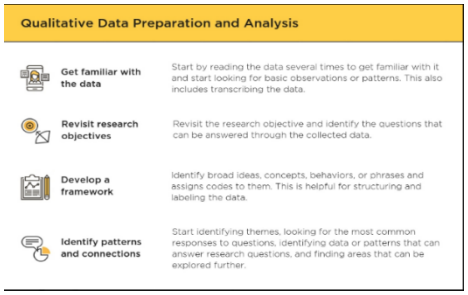
Qualitative data analysis works a little differently from quantitative data, primarily because qualitative data is made up of words, observations, images, and even symbols. Deriving absolute meaning from such data is nearly impossible; hence, it is mostly used for exploratory research. While in quantitative research there is a clear distinction between the data preparation and data analysis stage, analysis for qualitative research often begins as soon as the data is available.

Data Preparation and Basic Data Analysis

Analysis and preparation happen in parallel and include the following steps:

1. **Getting familiar with the data**: Since most qualitative data is just words, the researcher should start by reading the data several times to get familiar with it and start looking for basic observations or patterns. This also includes transcribing the data.

2. **Revisiting research objectives**: Here, the researcher revisits the research objective and identifies the questions that can be answered through the collected data.
3. **Developing a framework**: Also known as coding or indexing, here the researcher identifies broad ideas, concepts, behaviors, or phrases and assigns codes to them. For example, coding age, gender, socio-economic status, and even concepts such as the positive or negative response to a question. Coding is helpful in structuring and labeling the data.



4. **Identifying patterns and connections**: Once the data is coded, the research can start identifying themes, looking for the most common responses to questions, identifying data or patterns that can answer research questions, and finding areas that can be explored further.

Qualitative Data Analysis Methods

Several methods are available to analyze qualitative data. The most commonly used data analysis methods are:

- **Content analysis**: This is one of the most common methods to analyze qualitative data. It is used to analyze documented information in the form of texts, media, or even physical items. When to use this method depends on the research questions. Content analysis is usually used to analyze responses from interviewees.
- **Narrative analysis**: This method is used to analyze content from various sources, such as interviews of respondents, observations from the field, or surveys. It focuses on using the stories and experiences shared by people to answer the research questions.
- **Framework analysis**. This is more advanced method that consists of several stages such as familiarization, identifying a thematic framework, coding, charting, mapping and interpretation.
- **Discourse analysis**: Like narrative analysis, discourse analysis is used to analyze interactions with people. However, it focuses on analyzing the social context in which the communication between the researcher and the respondent occurred. Discourse analysis also looks at the respondent's day-to-day environment and uses that information during analysis.
- **Grounded theory**: This refers to using qualitative data to explain why a certain phenomenon happened. It does this by studying a variety of similar cases in different settings and using the data to derive causal explanations. Researchers may alter the explanations or create new ones as they study more cases until they arrive at an explanation that fits all cases.

These methods are the ones used most commonly. However, other data analysis methods, such as conversational analysis, are also available.

Qualitative data analysis can also be conducted through the following three steps:

Step 1: Developing and Applying Codes. Coding can be explained as categorization of data. A 'code' can be a word or a short phrase that represents a theme or an idea. All codes need to be assigned meaningful titles. A wide range of non-quantifiable elements such as events, behaviors, activities, meanings etc. can be coded.

There are three types of coding:

1. *Open coding*. The initial organization of raw data to try to make sense of it.
2. *Axial coding*. Interconnecting and linking the categories of codes.
3. *Selective coding*. Formulating the story through connecting the categories.

Coding can be done manually or using qualitative data analysis software such as

NVivo, Atlas ti 6.0, Hyper RESEARCH 2.8, Max QDA and others.

When using manual coding you can use folders, filing cabinets, wallets etc. to gather together materials that are examples of similar themes or analytic ideas. Manual method of coding in qualitative data analysis is rightly considered as labor-intensive, time-consuming and outdated.

In computer-based coding, on the other hand, physical files and cabinets are replaced with computer based directories and files. When choosing software for qualitative data analysis you need to consider a wide range of factors such as the type and amount of data you need to analyze, time required to master the software and cost considerations.

Moreover, it is important to get confirmation from your dissertation supervisor prior to application of any specific qualitative data analysis software.

The following table contains examples of research titles, elements to be coded and identification of relevant codes:

Research title	***Elements to be coded***	***Codes***
Born or bred: revising The Great Man theory of leadership in the 21st century	Leadership practice	Born leaders Made leaders Leadership effectiveness
A study into advantages and disadvantages of various entry strategies to Chinese market	Market entry strategies	Wholly-owned subsidiaries Joint-ventures Franchising Exporting Licensing

Impacts of CSR programs and initiative on brand image: a case study of Coca-Cola Company UK.	Activities, phenomenon	Philanthropy Supporting charitable courses Ethical behavior Brand awareness Brand value
An investigation into the ways of customer relationship management in mobile marketing environment	Tactics	Viral messages Customer retention Popularity of social networking sites

Qualitative data coding

Step 2: Identifying themes, patterns and relationships. Unlike quantitative methods, in qualitative data analysis there are no universally applicable techniques that can be applied to generate findings. Analytical and critical thinking skills of researcher plays significant role in data analysis in qualitative studies. Therefore, no qualitative study can be repeated to generate the same results.

Nevertheless, there is a set of techniques that you can use to identify common themes, patterns and relationships within responses of sample group members in relation to codes that have been specified in the previous stage.

Specifically, the most popular and effective methods of qualitative data interpretation include the following:

- ***Word and phrase repetitions*** – scanning primary data for words and phrases most commonly used by respondents, as well as, words and phrases used with unusual emotions;
- ***Primary and secondary data comparisons*** – comparing the findings of interview/focus group/observation/any other qualitative data collection method with the findings of literature review and discussing differences between them;
- ***Search for missing information*** – discussions about which aspects of the issue was not mentioned by respondents, although you expected them to be mentioned;
- ***Metaphors and analogues*** – comparing primary research findings to phenomena from a different area and discussing similarities and differences.

Step 3: Summarizing the data. At this last stage you need to link research findings to hypotheses or research aim and objectives. When writing data analysis chapter, you can use noteworthy quotations from the transcript in order to highlight major themes within findings and possible contradictions.

It is important to note that the process of qualitative data analysis described above is general and different types of qualitative studies may require slightly different methods of data analysis.

Analyzing Quantitative Data

Data Preparation

The first stage of analyzing data is data preparation, where the aim is to convert raw data into something meaningful and readable. It includes four steps:

Step 1: Data Validation

The purpose of data validation is to find out, as far as possible, whether the data collection was done as per the pre-set standards and without any bias. It is a four-step process, which includes…

- **Fraud**, to infer whether each respondent was actually interviewed or not.
- **Screening**, to make sure that respondents were chosen as per the research criteria.
- **Procedure**, to check whether the data collection procedure was duly followed.
- **Completeness**, to ensure that the interviewer asked the respondent all the questions, rather than just a few required ones.

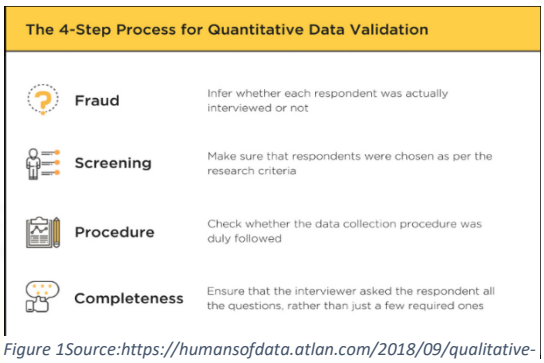


Figure 1Source:https://humansofdata.atlan.com/2018/09/qualitative-quantitative-data-analysis-methods/

To do this, researchers would need to pick a random sample of completed surveys and validate the collected data. (Note that this can be time-consuming for surveys with lots of responses.) For example, imagine a survey with 200 respondents split into 2 cities. The researcher can pick a sample of 20 random respondents from each city. After this, the researcher can reach out to them through email or phone and check their responses to a certain set of questions.

Step 2: Data Editing

Typically, large data sets include errors. For example, respondents may fill fields incorrectly or skip them accidentally. To make sure that there are no such errors, the researcher should conduct basic data checks, check for outliers, and edit the raw research data to identify and clear out any data points that may hamper the accuracy of the results.

For example, an error could be fields that were left empty by respondents. While editing the data, it is important to make sure to remove or fill all the empty fields.

Step 3: Data Coding

This is one of the most important steps in data preparation. It refers to grouping and assigning values to responses from the survey.

For example, if a researcher has interviewed 1,000 people and now wants to find the average age of the respondents, the researcher will create age buckets and categorize the age of each of the respondent as per these codes. (For example, respondents between 13-15 years old would have their age coded as 0, 16-18 as 1, 18-20 as 2, etc.)

Then during analysis, the researcher can deal with simplified age brackets, rather than a massive range of individual ages.

Quantitative Data Analysis Methods

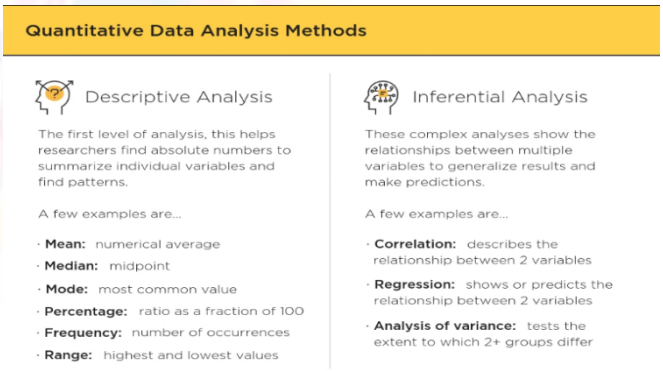
After these steps, the data is ready for analysis. The two most commonly used quantitative data analysis methods are descriptive statistics and inferential statistics.

Descriptive Statistics

Typically descriptive statistics (also known as descriptive analysis) is the first level of analysis. It helps researchers summarize the data and find patterns. A few commonly used descriptive statistics are:

- **Mean**: numerical average of a set of values.
- **Median**: midpoint of a set of numerical values.
- **Mode**: most common value among a set of values.
- **Percentage**: used to express how a value or group of respondents within the data relates to a larger group of respondents.
- **Frequency**: the number of times a value is found.
- **Range**: the highest and lowest value in a set of values.

Descriptive statistics provide absolute numbers. However, they do not explain the rationale or reasoning behind those numbers. Before applying descriptive statistics, it's important to think about which one is best suited for your research question and what you want to show. For example, a percentage is a good way to show the gender distribution of respondents.



Descriptive statistics are most helpful when the research is limited to the sample and does not need to be generalized to a larger population. For example, if you are comparing the percentage of children vaccinated in two different villages, then descriptive statistics is enough.

Since descriptive analysis is mostly used for analyzing single variable, it is often called univariate analysis.

Intellectual Honesty in Research

Intellectual Honesty is an applied method of problem solving, characterized by an unbiased, honest attitude, which can be demonstrated in a number of different ways including:

- Ensuring support for chosen ideologies does not interfere with the pursuit of truth;
- Relevant facts and information are not purposefully omitted even when such things may contradict one's hypothesis;

- Facts are presented in an unbiased manner, and not twisted to give misleading impressions or to support one view over another;
- References, or earlier work, are acknowledged where possible, and plagiarism is avoided.

Ten Signs of Intellectual Honesty

1. **Do not overstate the power of your argument**. One's sense of conviction should be in proportion to the level of clear evidence assessable by most. If someone portrays their opponents as being stupid or dishonest for disagreeing, intellectual dishonesty is probably in play. Intellectual honesty is most often associated with humility, not arrogance.

2. **Show willingness to publicly acknowledge that reasonable alternative viewpoints exist**. The alternative views do not have to be treated as equally valid or powerful, but rarely is it the case that one and only one viewpoint has a complete monopoly on reason and evidence.

3. **Be willing to publicly acknowledge and question one's own assumptions and biases**. All of us rely on assumptions when applying our world view to make sense of the data about the world. And all of us bring various biases to the table.

4. **Be willing to publicly acknowledge where your argument is weak.** Almost all arguments have weak spots, but those who are trying to sell an ideology will have great difficulty with this point and would rather obscure or downplay any weak points.

5. **Be willing to publicly acknowledge when you are wrong.** Those selling an ideology likewise have great difficulty admitting to being wrong, as this undercuts the rhetoric and image that is being sold. You get small points for admitting to being wrong on trivial matters and big points for admitting to being wrong on substantive points. You lose big points for failing to admit being wrong on something trivial.

6. **Demonstrate consistency.** A clear sign of intellectual dishonesty is when someone extensively relies on double standards. Typically, an excessively high standard is applied to the perceived opponent(s), while a very low standard is applied to the ideologues' allies.

7. **Address the argument instead of attacking the person making the argument.** Ad hominem arguments are a clear sign of intellectual dishonesty. However, often times, the dishonesty is more subtle. For example, someone might make a token effort at debunking an argument and then turn significant attention to the person making the argument, relying on stereotypes, guilt-by-association, and innocent-sounding gotcha questions.

8. When addressing an argument, do not misrepresent it. A common tactic of the intellectually dishonest is to portray their opponent's argument in straw man terms. In politics, this is called spin. Typically, such tactics eschew quoting the person in context, but instead rely heavily on out-of-context quotes, paraphrasing and impression. When addressing an argument, one should shows signs of having made a serious effort to first understand the argument and then accurately represent it in its strongest form.

9. Show a commitment to critical thinking.

10. Be willing to publicly acknowledge when a point or criticism is good. If someone is unable or unwilling to admit when their opponent raises a good point or makes a good criticism, it demonstrates an unwillingness to participate in the give-and-take that characterizes an honest exchange.

While no one is perfect, and even those who strive for intellectual honesty can have a bad day, simply be on the lookout for how many and how often these criteria apply to someone. In the arena of public discourse, it is not intelligence or knowledge that matters most – it is whether you can trust the intelligence or knowledge of another. After all, intelligence and knowledge can sometimes be the best tools of an intellectually dishonest approach.

Keeping You in Practice

Practice Task 1. *Honest Test*

A. Certain forms of communications may influence your beliefs or decision making. These communications may include: product advertisements, sales materials, blog posts, social media, news reports, medical advice, nutritional advice, editorials, sermons, appeals to support some issue, organization, or cause; political speeches, books, lectures, research reports, documentary films, rumors, or routine conversations. Accomplish the table below based on the forms of communication. Use a separate sheet of paper in answering the activity.

Column A	Column B
Intellectually Honest Form of Communication	Misleading Form of Communication

.

Practice Task 2. *Gather and Analyze*

Collect at least 5 data sets using interview method on the preference of housemates or neighbors for TV shows and their reasons for their choice. Write down their opinions using the different stages of data analysis. Present a summary of your findings. Use a separate sheet of paper in answering the activity.

Practice Task 3. *Justify*

Why should researchers identify the data analysis method that is appropriate to your study? Explain your answer in a separate sheet of paper.

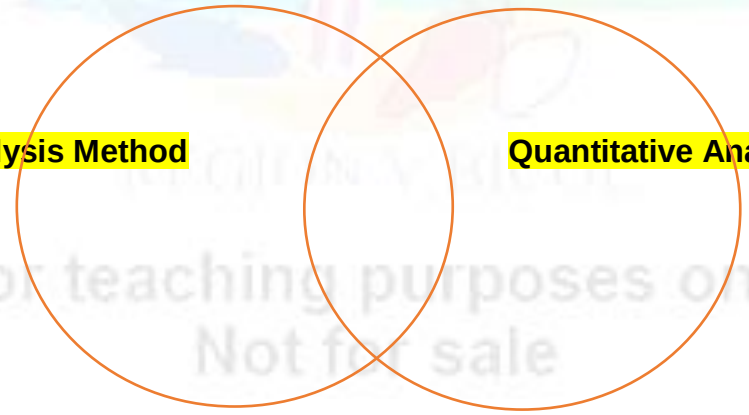
_____
_____
_____

Rubric:	Critical Thinking	-	30%
	Appropriateness	-	20%
	Content	-	30%
	Organization	-	20%
			100%

Additional Tasks

Task 1: *The Venn*

Give the differences and similarities of Qualitative and Quantitative data analysis using Venn diagram. Do this on a separate sheet of paper.



Task 2: Analyzing Data

Analyze and evaluate the result of the conducted survey of the researchers. From Grades 11 and 12 informants' various responses, the problem is being answered which aims to enumerate the teachers' attitudes that are perceived by the students. Based on the data gathered there are favorable and unfavorable attitudes that the informants perceived as they connected with their teachers. Use a separate sheet of paper in answering the activity.

TEACHERS' ATTITUDES	NO. OF RESPONSES FROM THE INFORMANTS
Favorable Attitudes	
Long patience	32
Caring to students	34
Kind personality	31
Dedication to teaching	40
Enthusiasm	24
Punctual	18
Unfavorable Attitudes	
Lack of confidence	3
Strict	29
Arrogant	2
Standard level	30
Teaching nonchalantly	6
Always late	4

Table 1. Teachers' Attitudes that Perceived by the Students

- Consider the following the rubrics:

Procedure	25%
Execution	25%
Interpretation	50%
	100

Cooling Down

A. Identification

Instruction: Provide the correct answer of each item and write it in your notebook or separate sheet of paper.

_____ 1. It is applied method of problem solving, characterized by an unbiased, honest attitude.

_____ 2. This is how researchers go from a mass of data to meaningful insights

_____ 3. Interconnecting and linking the categories of codes.

_____ 4. It is also known as descriptive analysis—the first level of analysis

_____ 5. Can be a word or a short phrase that represents a theme or an idea

B. Enumeration

Instruction: Enumerate the items asked and write your answers in a separate sheet of paper.

6-10 What are the methods to analyze qualitative data?

11-12 What are two most commonly used quantitative data analysis methods.

13-18 Enumerate the few commonly used descriptive statistics.

19-20 Give 2 importance of intellectual honesty in research.

C. Essay

1. Why is it important that a researcher must have in-depth understanding of the different data analysis methods? (2 points)
2. Write in your own words one (1) paragraph description of either quantitative or qualitative data analysis. Include its relevance in your research problem and how it will assist you to qualify the data gathered. (5 points)

Learning Challenge

Task 1: ***Defining Interpretation of Data***

- What is interpretation of data referred to in research?

Task 2: ***Determining Presentation of Data***

- What are the ways to present the data gathered in your study?

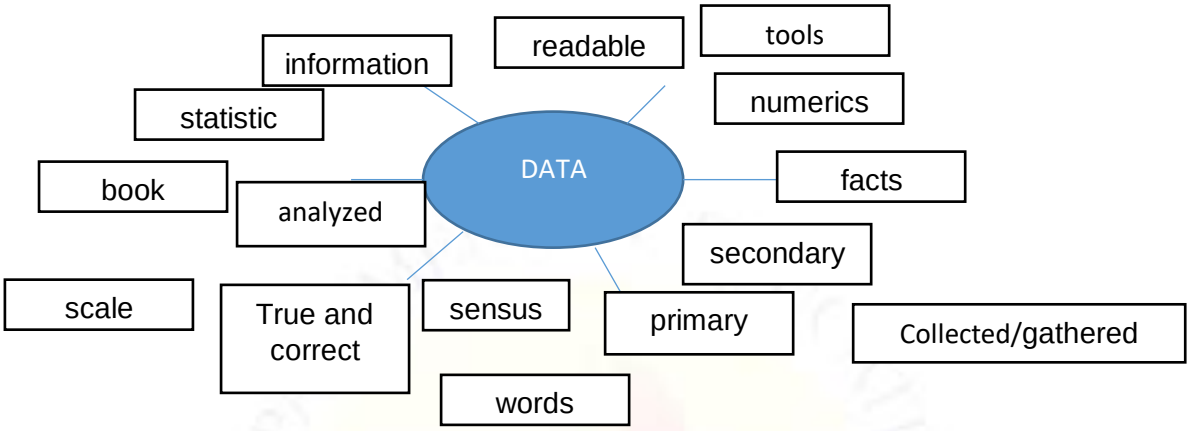
Points to Ponder

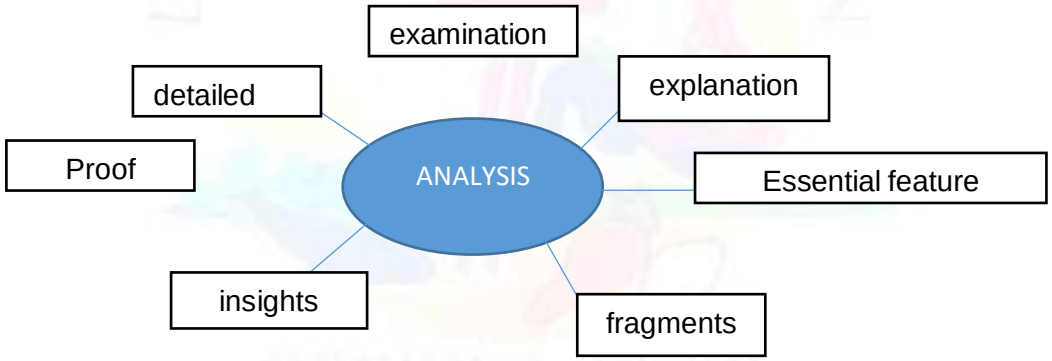
- ❖ Data analysis is perhaps the most important component of research. Weak analysis produces inaccurate results that not only hamper the authenticity of the research but also make the findings unusable. It's imperative to choose your data analysis methods carefully to ensure that your findings are insightful and actionable.
- ❖ Exercise moral virtue, find the facts, increase respect, seek insights, and search for common ground whenever you share ideas with others. Because false beliefs are often harmful, we have moral obligation to seek true beliefs. Challenge dishonesty in yourself and other

Answer Key

WARMING UP: ***The Prior***

A.





Definition:

Data Analysis (in research) research data analysis is a process used by researchers for reducing data to a story and interpreting it to derive insights. The data analysis process helps in reducing a large chunk of data into smaller fragments, which makes sense. (*LeCompte* and *Schensul)*

B. Familiarize yourself with do's and don'ts in citing sources in research. Then group the words accordingly using the template.

Plagiarism Honesty Selective Reporting Impartiality Disinformation Logical Fallacies Proper Citation Bias Intellectual Property Rights False Analogies

Correct Practice	Wrong Practice
Honesty	Plagiarism
Proper Citation	Selective Reporting
Intellectual Property Rights	Impartiality
	Disinformation
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	Bias
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Practice Task 1. *Honest Test*

A. Certain forms of communications may influence your beliefs or decision making. These communications may include: product advertisements, sales materials, blog posts, social media, news reports, medical advice, nutritional advice, editorials, sermons, appeals to support some issue, organization or cause; political speeches, books, lectures, research reports, documentary films, rumors, or routine conversations. Accomplish the table below based on the forms of communication.

Column A	Column B
Intellectually Honest Form of Communication	**Misleading Form of Communication**
Medical advise	Product advertisement
Sermons	Social media
appeals to support some issue	editorials
research reports	rumors routine conversations
documentary films	sales materials
nutritional advice	news reports
blog posts	political speeches
Books	
, lectures	

.

Practice Task 2. *Gather and Analyze*

Answers may vary.

Practice Task 3. *Justify*

Answers may vary.

Additional Tasks

Task 1: *The Venn*

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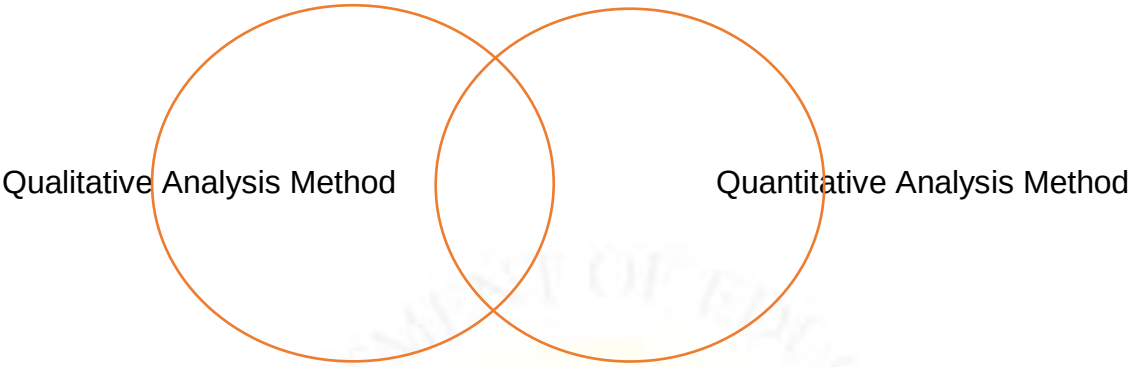
Give the differences and similarities of Qualitative and Quantitative data analysis using Venn diagram.



Qualitative Analysis Method	Similarities	Quantitative Analysis Method
made up of words/ Text-based		Number-based
Subjective	Both can display data graphically	Objective
More in-depth information on a few cases	Both produce data to analyze	Less in-depth but more breadth of information across a large number of cases
No statistical tests		Statistical tests are used for analysis
Content and narrative analysis		Descriptive statistics
seeks to discover patterns such as changes over time or possible causal links between variables.		

Task 2: *Analyzing data*

- Analyze and evaluate the result of the conducted survey of the researchers. From Grades 11 and 12 informants' various responses, the problem is being answered which aims to enumerate the teachers' attitudes that perceived by the students. Based from the data gathered there are favorable and unfavorable attitudes that the informants perceived as they connected with their teachers.

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Table 1. Teachers' Attitudes that Perceived by the Students

- Consider the following the rubrics:

Procedure	25%
Execution	25%
Interpretation	50%
	100

Table 1 shows the result from the conducted survey regarding the teachers' attitudes that the fifty-one students of Grades 11 and 12 perceived. Based on the table, 32 out of 51 informants perceived that some of their teachers have long patience, 34 out of 51 respond that their teachers are caring about them, 31 out of 51 informants view their teachers possessing the kind personality, out of 51 informants 40 of them see their teachers as dedicated to teaching, 24 out of 51 respond that their teachers shows enthusiasm, 18 informants respond that some of their teachers are punctual.

However, teachers also have their unfavorable attitude that they need to somehow modify, if possible. As shown in the table, 3 out of 51 informants observed that some of their teachers lack of confidence in teaching, 29 of them perceived some teachers as strict, 2 informants noticed that there is/are teacher/s who are being arrogant, 30 out of 51 perceived some of their teachers having standard level (regardless how low or high it is), there are 6 students out of 51 view their teachers teaching nonchalantly, and out of 51, 4 students observed that some of their teachers are always late in class.

Based on the result, the researchers found the most observable teachers' positive and negative attitudes that constantly perceived by the students. In favorable attitudes, (78% of the informants respond) dedication to teaching is the most remarkable in the teachers they perceived their teachers as dedicated to what they are doing. Second, the students observed that their teachers are caring to the students (with 67% of the informants' response) regardless of their way of showing care. Third, 63% of the informants agreed that some of their teachers have long patience attitude and can compromise with the students' behaviors. Then 61% of

the students affirmed that some of their teachers have kind personality who is considerate in so many ways. There are students who also perceived their teachers as enthusiastic (47% of response) in their fields who show active interest to whatever they are doing. There are students who observed that some of their teachers are punctual (35% agreed), who arrive and do things at expected time.

In teachers' unfavorable attitudes, the most perceivable attitude is having a set standard level (59%) to the students regardless of how low or high it is. Next is teacher's acquiring an attitude of being strict (57% agreed). There are some informants who also observed that some of their teachers teach nonchalantly (12%) as some teachers discuss lesson apathetically. Some of the students (8% of the informants) agreed that some of their teachers came late in class. And 6% of the students noticed that some of their teachers are lacking of confidence in teaching. With regards to the variable, informants have their own feeling of emotions that they felt whenever they encounter those attitudes of the teachers. Majority (67%) of the respondents said that they are happy when they see and feel their teachers possessed the positive attitudes.

This result implies that teachers indeed affect students' willingness, activeness and motivation in different aspects of life learning. There are informants stated that the mood of the teachers affect the entire class, teachers' attitude influence the learners' behavior and performance inside the classroom in front of the educators.

The results give the researchers an idea that the students are aware of the teachers' attitudes, and its impact to their learning holistically. Nevertheless, based on the result, the teachers of Mariano Suarez High School have favorable attitudes that create productive students as they collaborate with one another, and also unfavorable attitudes that need to minimize for better individuals.

COOLING DOWN

A. Identification

1. Intellectual Honesty
2. Data Analysis
3. Axial Coding
4. Descriptive Statistics
5. Code

B. Enumeration

6. Content analysis
7. Narrative analysis
8. Framework analysis
9. Discourse analysis
10. Grounded theory
11. Descriptive Statistics
12. Inferential Statistics
13. Mean

14. Median
15. Mode
16. Percentage
17. Frequency
18. Range
19. Answer may vary
20. Answer may vary

C. Essay

Answer may vary.

LEARNING CHALLENGE

Task 1: Defining Interpretation of Data

Answers may vary

Task 2: Determining Presentation of Result

Answers may vary

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