

Practical Research 2

Quarter 1- Module 1

Characteristics, Strengths, Weaknesses, and Kinds of Quantitative Research

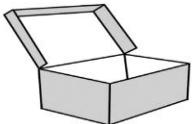


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What I Need to Know

Good day researchers! In this lesson, you are going to learn how to:

Describe characteristics, strengths, weaknesses, and kinds of quantitative research (CS_RS12-Ia-c-1)

Moreover, in this lesson, you will learn concepts and do practice activities that will help you do the following:

1. define quantitative research;
2. identify the characteristics of qualitative research;
3. compare and contrast the strengths and weaknesses of quantitative research; and
4. determine the kinds of quantitative research.



What I Know

Before you proceed to the different activities inside the module, answer first the short **pre-assessment activity** below.

Select your answer from the options provided after each item. Choose and encircle the letter of the correct answer. If there are no options provided, do as directed.

1. Which of the following best defines a quantitative research?
 - A. It is a research design in which findings are based on observations.
 - B. It is a simple investigation which hardly uses statistical treatment in stating generalizations.
 - C. It is a step-by-step process of investigation without quantifiable data.
 - D. It is a systematic investigation of something that exists by gathering quantifiable data and performing statistical techniques.
2. Which of the following best explains the good characteristic of quantitative research?
 - A. Quantitative research always does not need a bigger sample of population to arrive at a valid result.
 - B. Quantitative research can be utilized without the use of standardized instruments.
 - C. Quantitative research is the most reliable and valid way of concluding results, giving way to a new hypothesis or to disproving it.
 - D. Quantitative research puts emphasis on discovery.



3. Which statement below describes a weakness of quantitative research?
- A. Quantitative research can be costly, difficult and time consuming as most researchers are non-mathematicians.
 - B. Quantitative research does not need a lot of investment in time and resources when polishing results.
 - C. Quantitative research emphasizes objective measurements and statistical analysis of data which can be manipulated.
 - D. Quantitative research leaves a big grey area on the given results.
4. What is a research design?
- A. A research design emphasizes the objective measurements and the statistical analysis of data collected in various ways.
 - B. A research design is the comparison of the pretest and the posttest within one group to come up with the needed data.
 - C. It is the research problem of the study.
 - D. It refers to the overall strategy that you choose in order to integrate the different components of the study in a coherent and logical way to effectively address the problem.
5. Using at least 5-10 sentences, write a paragraph explaining the importance of research in today's world.



Lesson 1

Characteristics of Quantitative Research



What's In

In your Practical Research 1, you have studied about the **differences between qualitative and quantitative research**. Can you still remember the differences of these two research methods?

Below is a table of the two research methods. The characteristics of qualitative research method are given, whereas, some characteristics of quantitative research method are not given. Fill in the blank with the characteristic of quantitative research based on the given characteristics of qualitative research method.

Qualitative Research	Quantitative Research
Focuses on exploring ideas and formulating a theory or hypothesis	Focuses on testing theories and hypotheses
Is analyzed by summarizing, categorizing and interpreting	
Mainly expressed in words	
Requires few respondents	
Open-ended questions	
Key terms are: understanding, context, complexity, subjectivity	Key terms are: testing, measurement, objectivity, replicability



What's New

Let us start our lesson on the characteristics of quantitative research by analyzing the sample research titles below.

Research Title A: A Study of the Perceptions of Selected Grade 11 Students Regarding Technology and Senior High School Readiness

Research Title B: Socio-economic Status and Academic Performance of Selected Students of Concepcion Integrated School-Secondary Level

Let's Analyze:



1. Which of the titles above is a quantitative research? Why?

2. What key words in the title give you the idea that the research is quantitative? Explain.



What is It

One of the given research titles above is an example of a quantitative research.

A **quantitative research** is a research design that uses numbers in stating generalizations about a given problem or inquiry. These numbers are the results of objective scales of measurements of the units of analysis called *variables*. Furthermore, research findings are subjected to statistical treatment to determine significant relationships or differences between variables, the results of which are the bases for generalization about the problem.

Let us look at the sample titles above. Which is qualitative, and which is quantitative?

In the given sample titles, **Research Title A** is qualitative while **Research Title B** is quantitative. If you look at the key words, you would easily find out that a title is quantitative or not. In the given quantitative research title, we have the key words _____ that help us determine that the research is quantitative.

The **characteristics** of quantitative research according to Prieto, et al. are as follows:

1. Methods or procedures of data gathering include items like age, gender, educational status, among others, that call for measurable characteristics of the population.
2. Standardized instruments guide data collection, thus, ensuring the accuracy, reliability and validity of data.
3. Figures, tables or graphs showcase summarized data collected in order to show trends, relationships or differences among variables. The charts and tables allow you to see the evidence collected.



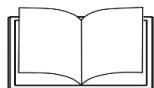
4. A large population yields more reliable data, but principles of random sampling must be strictly followed to prevent researcher's bias.

5. Quantitative methods can be repeated to verify findings in another setting, thus, reinforcing validity of findings.

6. Quantitative research puts emphasis on proof, rather than discovery.

What characteristics in the given quantitative research title above can you identify? _____

What variables in the title can you identify?



What's More

Answer the activities that will follow to practice your knowledge and skill about the characteristics of quantitative research.

Activity 1

Answer the questions below about quantitative research and its characteristics. Use your own words in answering the questions and do not copy word for word from the lecture above.

1. What is quantitative research?

2. What are the characteristics of quantitative research?

Activity 2

Study the quantitative research title below.

Title: **Effects of Covid-19 Pandemic in the Shoe Industry of Marikina City**

What makes it a quantitative research?



Activity 3

On the blank space before each item, write **Quantitative** if the statement defines quantitative research and **Qualitative** if it describes qualitative research.

- _____ 1. A structured method is used to collect data.
- _____ 2. It is conducted to understand the social reality of individuals, groups and cultures as nearly as possible as its participants feel it or live it.
- _____ 3. It seeks to explain the 'how' and 'why' of a particular phenomenon or behavior.
- _____ 4. The research is objective, elaborate and investigational.
- _____ 5. The results are logical, statistical and unbiased.



What I Have Learned

In this lesson, we focused on the characteristics of quantitative research.

What is a quantitative research? _____

What are its characteristics? _____



What I Can Do

Compile reports on Covid-19 cases in Marikina City for a week. Make a table based on the sample table from the Marikina City PIO below. Take note of the data from Day 1 to Day 7.





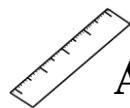
<https://web.facebook.com/search/top/?q=marikina%20pio>

Your table may look like this:

Daily Covid – 19 Cases per Barangay in Marikina City
From _____ to _____, 2020

Days	Barangka	Concepcion 1	Concepcion 2	Fortune	IVC
Day 1					
Day 2					
Day 3					
Day 4					
Day 5					
Day 6					
Day 7					

Remember to be accurate with your data as it is a basic characteristic of a quantitative research.



Assessment

Put the statement in each proper column. If the statement describes qualitative research, put it in Column A, if it describes quantitative research, put it in Column B.

COLUMN A (Qualitative)	COLUMN B (Quantitative)



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Statements:

1. Structured tools such as surveys, polls, or questionnaires are used to gather data.
2. Open-ended questions are created per objective of the research.
3. Data is represented by tables, charts, graphs, or any other non-numerical form.
4. More reliable results are taken from a large population in which principles of random sampling are strictly followed.
5. Researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them.



Additional Activities

Research additional information on the characteristics of quantitative research using books or internet sources. You can also watch YouTube videos regarding the topic. Take note of the characteristics given. Take note also of the links or your sources as this is a sign of a responsible researcher.

1. What additional information did you get from your research?

2. What can you say about quantitative research based from your sources?



Lesson 2

Strengths and Weaknesses of Quantitative Research



What's In

In the previous lesson, you studied about the ***characteristics of quantitative research.***

Using the table below, complete each column with the needed information. Write at least 5 strengths and 5 weaknesses of yours as a researcher.

Strengths	Weaknesses



What's New

Let us start our lesson on the strengths and weaknesses of quantitative research by doing the activity below. On the space before each number, write **S** if the statement is a strength of quantitative research, write **W** if it is a weakness. Then, explain your answer.

- _____ 1. The experiment filters out external factors, if properly designed and so, the results gained can be seen as real and unbiased.
Explanation: _____
- _____ 2. Quantitative studies require extensive statistical treatment, requiring stringent standards, more so with confirmation of results.
Explanation: _____
- _____ 3. Findings can be generalized if selection process is well-designed and sample is representative of study population.
Explanation: _____
- _____ 4. Related secondary data is sometimes not available or accessing available data is difficult/impossible.



- Explanation: _____
5. The results or generalizations are more reliable and valid.
Explanation: _____



What is It

The given statements above describe the strengths and weaknesses of quantitative research.

A lot of authors describe the strengths and weaknesses of quantitative research. In the internet, you could read these descriptions of the strengths of quantitative research by *Better Thesis*:

- **Strengths**

- Findings can be generalised if selection process is well-designed and sample is representative of study population
- Relatively easy to analyse
- Data can be very consistent, precise and reliable

As to weaknesses or limitations, the same site gives this information:

- **Limitations**

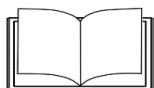
- Related secondary data is sometimes not available or accessing available data is difficult/impossible
- Data may not be robust enough to explain complex issues
- Difficult to understand context of a phenomenon

To explain further the strengths and weaknesses of quantitative research, Prieto et al. had given these valuable descriptions which are put in a table for your better understanding of the topic:

Strengths	Weaknesses
1. Quantitative research design is the most reliable and valid way of concluding results, giving way to a new hypothesis or to disproving it.	1. Quantitative research can be costly, difficult and time-consuming because most researchers are non-mathematicians.
2. Quantitative experiments filter out external factors, if properly designed, and so the results gained can be seen, as real and unbiased.	2. Quantitative studies require extensive statistical treatment, requiring stringent standards, more so with confirmation of results. When



Quantitative experiments are useful for testing the results gained by a series of qualitative experiments, leading to a final answer, and a narrowing down of possible directions to follow.	ambiguities in some findings surface, retesting and refinement of the design call for another investment in time and resources to polish the results.
3. Because of a bigger number of the sample of a population, the results or generalizations are more reliable and valid.	3. Quantitative methods also tend to turn out only proved or unproved results, leaving little room for uncertainty, or grey areas.



What's More

Answer the activities that follow to practice your knowledge and skill about the strengths and weaknesses of quantitative research.

Activity 1

Answer the following questions.

1. What are the strengths of quantitative research?

2. What are the weaknesses of quantitative research?

Activity 2

Review the strengths and weaknesses of quantitative research given by Prieto et al. then make the statements short by paraphrasing each.

Strengths	Weaknesses
1.	1.
2.	2.



3.	3.

Activity 3

Go back to the strengths and weaknesses of quantitative research by *Better Thesis and Prieto et al.* Using your own words, compare and contrast these by writing a paragraph of at least 10 sentences.



What I Have Learned

In this lesson, we focused on the strengths and weakness of quantitative research.

What are the strengths and weaknesses of a quantitative research?

What is the importance of knowing these concepts?





What I Can Do

Apply what you have learned on strengths and weaknesses of quantitative research by doing the activity that follows.

Watch news reports about Covid-19 pandemic and the actions done by the government on the problem. Get a report on the topic from the two different networks. Using a table, compare and contrast the report.

News Title:			
Network _____		Network _____	
Strengths	Weaknesses	Strengths	Weaknesses
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.
4.	4.	4.	4.
5.	5.	5.	5.



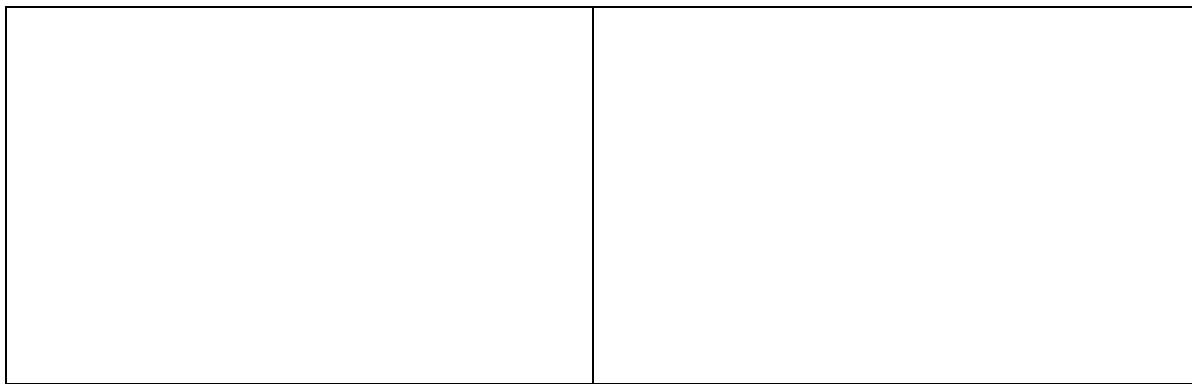
Assessment

Showcase the knowledge and skills you have learned in this lesson by answering the assessment activity.

Put the statement in each proper column. If the statement is a strength of quantitative research, write it under Column A. If it a weakness, write it in Column B.

COLUMN A (Strengths)	COLUMN B (Weaknesses)





Statements:

1. Because the data is in a numeric form, we can apply statistical tests in making statements about the data.
2. Providing data that is descriptive allows researchers to capture a snapshot of a user population.
3. Interpretation of data is difficult and data deficiency can lead to critical errors in the research.
4. Only someone with a firm grasp of how they should use and interpret quantitative statistics should conduct quantitative study.
5. Statistical analysis lets us derive important facts from research data, including preference trends, differences between groups, and demographics.



Additional Activities

Research additional information on the strengths and weaknesses of quantitative research using books or internet sources. You can also watch YouTube videos regarding the topic. List down the strengths and weakness that you find that are not presented in this lesson.

1. What additional information did you get from your research?

Title 1:

Source: _____

Additional Information:



Strengths	Weaknesses
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Title 2:

Source: _____

Additional Information:

Strengths	Weaknesses
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Lesson 3

Kinds of Quantitative Research



What's In

In the previous lessons, you have studied about the **characteristics, strengths and weakness of quantitative research**. Can you still remember the characteristics, strengths and, weaknesses of quantitative research without turning the pages and looking back at the lessons?

What is quantitative research? Quantitative research is _____.



. Quantitative research has strengths and these are weaknesses. The weaknesses of quantitative research are .



What's New

Let us start our lesson on the kinds of quantitative research design by doing the activity below. Inside the box are key terms. Read these key terms and put them under the proper column.

KEY TERMS			
<i>Discourse analysis</i>	<i>Evaluative</i>	<i>Experimental</i>	<i>Focus group discussion</i>
<i>Grounded theory</i>	<i>Participant observation</i>	<i>Phenomenology</i>	
<i>Pre-test design</i>	<i>Quasi-experimental</i>	<i>True experimental</i>	

Write the key terms here:

Quantitative Design	Qualitative Design
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.



What is It

The key terms above are terms used in research designs. We have two research designs, namely, quantitative design and qualitative design. We will focus our lesson on the quantitative design.

Let us first define research design. What is research design? Do you have an idea?

Research design refers to the overall strategy that you choose in order to integrate or put together the different components or parts of the study in a coherent and logical way. This will ensure you to effectively address the research problem. Just like constructing a building in which the architect needs to have a blueprint of the project, research design constitutes the blueprint for the selection, measurement and analysis of data. The research design that you use should be determined from the research problem.



You need to remember always that quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through various means like polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques.

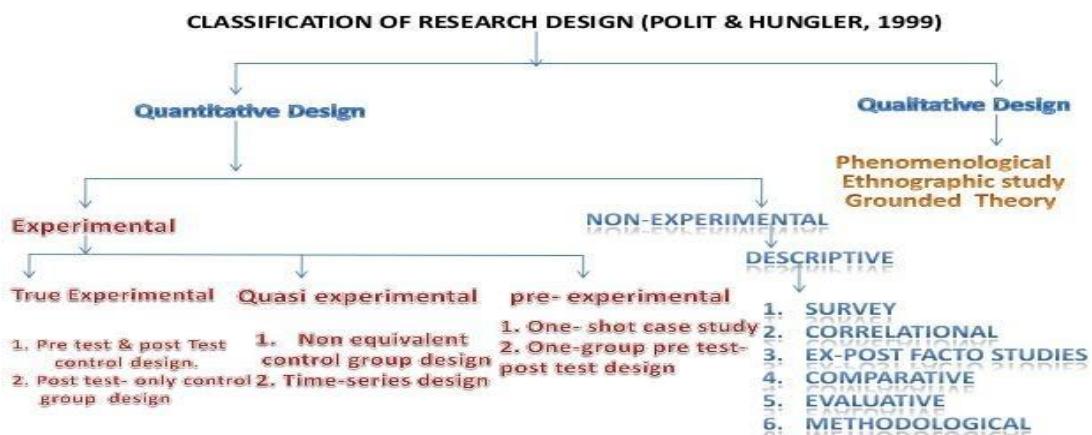
Quantitative research is data-based, remember? And it is objective.

Remember that the function of a research design is to ensure that the evidence obtained enables you to effectively address the research problem as clearly as possible.

Take note also that any sound design will do the following things:

1. Identify the research problem clearly and justify its selection.
2. Review previously published literature associated with the problem area.
3. Clearly and explicitly specify hypotheses [i.e., research questions] central to the problem selected.
4. Effectively describe the data which will be necessary for an adequate test of the hypotheses and explain how such data will be obtained.
5. Describe the methods of analysis which will be applied to the data in determining whether or not the hypotheses are true or false.

There are two kinds of quantitative research designs, namely, experimental and non-experimental.



Looking at the matrix, what can you say about the two quantitative research designs? _____

Experimental Research Design

Experimental research design allows you to control the situation. This allows you to answer the question, "What causes something to occur?" With this, you are able to identify the cause and effect relationships between variables and to distinguish the placebo effects from treatment effects. To explain further, this research design supports the ability to limit alternative explanations and to infer direct causal relationships in the study.

Experimental research design is of three types – true experimental, quasi-experimental and pre-experimental.

Below are the characteristics of *true experimental design*:

1. It describes how participants are allocated to experimental groups. A common method is completely randomized design, where participants are assigned to groups at random. A second method is randomized block design, where participants are divided into homogeneous blocks (for example, age groups) before being randomly assigned to groups.
2. It minimizes or eliminates confounding variables, which can offer alternative explanations for the experimental results.
3. It allows you to make inferences about the relationship between independent variables and dependent variables.
4. It reduces variability to make it easier for you to find differences in treatment outcomes.

You also need to remember that design of experiments involves: 1.) The systematic collection of data, 2.) A focus on the design itself, rather than the results, 3.) Planning changes to independent (input) variables and the effect on dependent variables or response variables, and 4.) Ensuring results are valid, easily interpreted, and definitive.

Furthermore, you bear in mind these most important principles:

- *Randomization*: the assignment of study components by a completely random method, like simple random sampling. Randomization eliminates bias from the results
- *Replication*: the experiment must be replicated by other researchers. This is usually achieved with the use of statistics like the standard error of the sample mean or confidence intervals.
- *Blocking*: controlling sources of variation in the experimental results.



Quasi-experimental Research design

In a quasi-experimental research design, you can collect more data, either by scheduling more observations or finding more existing measures.

A quasi-experimental design has almost the same components as a regular experiment, but there is one or more missing key components. The three key components of a traditional experiment are:

1. Pre-post-test design.
2. Treatment and control groups.
3. Random assignment of subjects to groups.

You may want to deliberately leave out one of these key components. This could be for ethical or methodological reasons. For example:

- It would be unethical to withhold treatment from a control group. This is usually the case with life-threatening illness, like cancer.
- It would be unethical to treat patients; for example, you might want to find out if a certain drug causes blindness.
- A regular experiment might be expensive and impossible to fund.
- An experiment could technically fail due to loss of participants, but potentially produce useful data.
- It might be logically impossible to control all variables in a regular experiment.

These types of issues crop up frequently, leading to the widespread acceptance of quasi-experimental designs — especially in the social sciences. Quasi-experimental designs are generally regarded as unreliable and unscientific in the physical and biological sciences.

Some experiments naturally fall into groups. For example, you might want to compare educational experiences of first, middle and last born children. Random assignment isn't possible, so these experiments are quasi-experimental by nature.

Now, do you know the general form of a quasi-experimental design thesis statement? The **general form of a quasi-experimental design thesis statement** is "*What effect does (a certain intervention or program) have on a (specific population)?* "

Let us have these examples:

Example 1: Does smoking during pregnancy lead to low birth weight?

Note that it would be unethical for you to randomly give one group of



mother's packs of cigarettes to smoke. You instead asks the mothers if they smoked during pregnancy and assigns them to groups after the fact.

Example 2: Does thoughtfully designed software improve learning outcomes for students?

In this study, you use a pre-post- test design and multiple classrooms to show how technology can be successfully implemented in schools.

I hope that you are getting the points now. Let us then tackle pre experimental research design.

Pre-experimental Research Design

Pre-experiments are the simplest form of research design. You have to remember that in pre-experiment either a single group or multiple groups are observed subsequent to some agent or treatment presumed to cause change.

Pre-experiment research design are of three types. These are: 1.) *One-shot case study design*, 2.) *One-group pretest-posttest design*, and 3.) *Static-group comparison*.

What is a one-shot case design?

In a *one-shot case study design*, a single group is studied at a single point in time after some treatment that is presumed to have caused change. The carefully studied single instance is compared to general expectations of what the case would have looked like had the treatment not occurred and to other events casually observed. No control or comparison group is employed.

In a *one-group pretest-posttest design*, a single case is observed at two time points, one before the treatment and one after the treatment. Changes in the outcome of interest are presumed to be the result of the intervention or treatment. No control or comparison group is employed.

In a *static-group comparison*, a group that has experienced some treatment is compared with one that has not. Observed differences between the two groups are assumed to be a result of the treatment.

Non-Experimental Research Design

Aside from the experimental research design, we also have the non-experimental research design.

Non-experimental research is the label given to a study when you cannot control, manipulate or alter the predictor variable or subjects, but instead, rely on interpretation, observation or interactions to come to a conclusion. Typically, this means that *you must rely on correlations, surveys or case*



studies, and cannot demonstrate a true cause-and-effect relationship. Non-experimental research tends to have a high level of external validity, meaning it can be generalized to a larger population.

Experimental research is appropriate when the researcher has a specific research question or hypothesis about a causal relationship between two variables—and it is possible, feasible, and ethical to manipulate the independent variable and randomly assign participants to conditions or to orders of conditions. It stands to reason, therefore, that non-experimental research is appropriate—even necessary—when these conditions are not met.

The following can be the cases in choosing non-experimental research.

1. The research question or hypothesis can be about a single variable rather than a statistical relationship between two variables (Example: *How accurate are people's first impressions?*).
2. The research question can be about a non-causal statistical relationship between variables (Example: *Is there a correlation between verbal intelligence and mathematical intelligence?*).
3. The research question can be about a causal relationship, but the independent variable cannot be manipulated or participants cannot be randomly assigned to conditions or orders of conditions (Example: *Does damage to a person's hippocampus impair the formation of long-term memory traces?*).
4. The research question can be broad and exploratory, or it can be about what it is like to have a particular experience (Example: *What is it like to be a working mother diagnosed with depression?*).

There are six (6) descriptive research designs.

1. Survey

This is a research design that you use when *you intend to provide a quantitative or numerical description of trends, attitudes or opinions of a population by studying a sample of the population*

(Creswell, 2003). How do you think this is done? To illustrate, let us have an example. *For example*, colleges and universities regularly float surveys to determine customer satisfaction, that is, the students' attitudes toward or opinions regarding student services like the canteen, clinic, security, the guidance and counselling service, and the like.



2. Correlational – Correlational Research has three types:

→ *Bivariate correlational studies* in which you obtain scores from two variables for each subject, then use them to calculate a correlation coefficient. You have to always remember that the term bivariate implies that the two variables are correlated (variables are selected because they are believed to be related).

An example of this is the presumption that *children of wealthier, better educated parents earn higher salaries as adults*. That is, children of wealthier (variable #1), better educated (variable #2) parents earn higher salaries as adults.

→ *Prediction studies* where you use correlation co-efficient to show how one variable (the predictor variable) predicts another (the criterion variable).

For example: *Which high school applicants should be admitted to college?*

In this example, we are talking about senior high school students like you who are applying for college. What do you think is one requirement for admission to college? One predictor for admission is _____.

→ *Multiple Regression Prediction Studies* – suppose the high school GPA is not the sole predictor of college GPA, what might be other good predictors? All of these variables can contribute to the over-all prediction in an equation that adds together the predictive power of each identified variable.

3. Ex-Post Facto Research Design

These are non-experimental designs that you use to investigate causal relationships. You use these when you examine whether one or more pre-existing conditions could possibly have caused subsequent differences in groups of subjects. Here, you attempt to discover whether differences between groups have results in an observed difference in the independent variables.

For example: *What are the effects of home schooling on the social skills of adolescents?* As a researcher, you want to find out in this study the effects of schooling to the social skills, like communication, using good manners, being assertive, and the likes, to the student.



4. Comparative Design

This involves comparing and contrasting two or more samples of study subjects on one or more variables, often at a single point of time. Specifically, you use this design to compare two distinct groups on the basis of selected attributes such as the knowledge level, perceptions, and attitudes, physical or psychological symptoms.

For example, a comparative study on the health problems among rural and urban older people from district Mehsana, Gujarat. (www.dryayeshpatidat.blogspot.com).

5. Evaluative Research

You use this kind of research design when you seek to assess or judge in some way providing information about something other than what might be gleaned or seen in mere observation or investigation of relationships.

For example, you use a test in school to assess the effectiveness of teaching or the deployment of a curriculum.

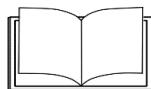
You always have to remember that evaluation research is conducted to elicit or get useful feedback from a variety of respondents from various fields to aid in decision making or policy making.

To explain further, there are various types of evaluation depending on the purpose of the study. The most commonly used in research are the *formative and summative evaluation types*. Formative evaluation is used when you determine the quality of implementation of a project, the efficiency and effectiveness of a program, assessment of organizational processes like procedures, policies, guidelines, human resource development and the like.

6. Methodological

In this approach, the implementation of a variety of methodologies forms a critical part in achieving the goal of developing a scale-matched approach where data from different disciplines can be integrated.





What's More

Activity 1

Answer the following questions.

1. What is a research design? How important is this in doing research?

2. Compare and contrast experimental and non-experimental research designs.

Activity 2

Go over the lesson on types of descriptive research designs. Using the table below, write the salient points of each.

Survey	Correlational	Ex-Post Facto	Comparative	Evaluative	Methodological

Activity 3

Answer the following questions below. Select your answers from the options provided after each item. Choose and encircle the letter of the correct answer. If there are no options provided, do as directed.

1. Which of the following BEST describes a research design?



- A. It is the blueprint of a would-be study that you plan to conduct which you use to integrate its components.
 - B. Research design is determined on the problem of your interest.
 - C. Research design is the blueprint and the overall strategy a researcher use to put together in a coherent way the different components of the study.
 - D. Research design is the topic that you choose to conduct a research about.
2. A sound research design has the following things EXCEPT
- A. Clearly and explicitly specified hypotheses unimportant to the problem selected.
 - B. Effectively describe the data which will be necessary for an adequate test of the hypotheses and explain how such data will be obtained.
 - C. Identify the research problem clearly and justify its selection,
 - D. Review previously published literature associated with the problem area.
3. What research design is used when you intend to give a quantitative or numeric description of trends, attitudes or opinions of a population in studying its sample?
- A. Correlational
 - B. Evaluative Research
 - C. Methodological
 - D. Survey
4. You use the non-experimental research design when ____
- A. the phenomena occur naturally and there is no external variables.
 - B. you compare the pre-test and the post-test within one group
 - C. you want to control both time-related and group-related threats.
 - D. you want to control the situation.
5. Earl observes that most of his classmates are addicted in playing online games and are not focused on their studies. He wants to know the effects of this behavior to his classmates' academic performance.

What kind of research design should be used in the given situation? Why? Indicate the type of research design to be used and explain your answer in your own words. Have at least 10 sentences for your explanation.





What I Have Learned

In this lesson, we focused on the kinds of quantitative research.

What are the experimental research designs? Explain each.

What are the types of descriptive research designs? Explain each.



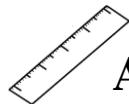
What I Can Do

Apply what you have learned on quantitative research designs by doing the activity.

Communities are put to lockdown due to the Covid-19 pandemic. If you were to conduct a research on this situation, what will you research about? How would you go on with your study? What type of research will you do and what research design are you going to apply?

Write your answer below. Provide examples in your discussion using at least 15-20 sentences.





Assessment

On the space provided, write **Survey** or **Experiment**, indicating the kind of quantitative research you will use as a researcher on the given problem inquiries below.

- _____ 1. How many senior high school students use the school library in a week.
- _____ 2. How many hours adolescents do Facebook in a day?
- _____ 3. The results of a prescribed daily diet on the sugar count of diabetic patients.
- _____ 4. The impact of blended learning on senior high school students during the Covid-19 pandemic.
- _____ 5. The top 3 academic tracks chosen by senior high school students in your school.



Additional Activities

Do an online survey of how many senior high school enrollees there are in the following academic tracks in one private school and in one public school.

- a. ABM
- b. Arts and Design
- c. General Academic Strand (GAS)

Prepare a PowerPoint presentation on this and be ready to present it through video call. You can also have it written and have it submitted to your teacher.





References

Books:

Prieto, Nelia G. et al, *Practical Research 2 for Senior High School*. Quezon City: Lorimar Publishing House, Inc., 2017

Internet Sources:

Experimental Design. Retrieved June 2020 from <https://www.statisticshowto.com/experimental-design>

Non-Experimental and Experimental Research: Differences, Advantages & Disadvantages. Retrieved June 2020 from <https://study.com/academy/lesson/non-experimental-and-experimental-research-differences-advantages-disadvantages.html>

Organizing Academic Research Papers: Types of. Retrieved June 2020 from <https://library.sacredheart.edu/c.php?g=29803&p=185902>

Overview of Nonexperimental Research. Retrieved June 2020 from <https://opentextbc.ca/researchmethods/chapter/overview-of-nonexperimental-research/>

Picture on Marikina Covid-19 Report. Retrieved June 2020 from <https://web.facebook.com/search/top/?q=marikina%20pio>

Picture/clipart of classification of research design. Retrieved June 2020 from https://www.google.com/search?q=quantitative+research+design+by+polit+and+hungler&tbo=isch&source=iu&ictx=1&fir=Ce9kVpwwsTuFsM%253A%252CJJq5jdDn2kOWsM%252C_&vet=1&usg=AI4_-



kRR8dM7yCbI0&ikrR4mwrtNpQvJAw&sa=X&ved=2ahUKEwjUoMHY5unpAhWjGqYKHz8AMMQ9QEwC3oECAgQBQ

Pre-experimental Designs. Retrieved June 2020 from <https://www.researchconnections.org/childcare/datamethods/preexperimental.jsp>

Qualitative vs. quantitative research. Retrieved June 2020 from <https://betterthesis.dk/research-methods/lesson-1different-approaches-to-research/strengths-and-limitations>

Qualitative vs. quantitative research. Retrieved June 2020 from <https://www.simplypsychology.org/qualitative-quantitative.html>

Quantitative Research Definition. Retrieved June 2020 from <https://www.questionpro.com/blog/quantitativeresearch/#:~:text=Quantitative%20research%20is%20defined%20as,%2C%20mathematical%2C%20or%20computational%20techniques.>

Quantitative Research: Definition, Methods, Types and Examples. Retrieved June 2020 from <https://www.questionpro.com/blog/quantitative-research/>

Strengths and Weaknesses of Quantitative and Qualitative Research. Retrieved June 2020 from <https://www.uxmatters.com/mt/archives/2012/09/strengths-and-weaknesses-of-quantitative-and-qualitative-research.php>



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