

SENIOR HIGH SCHOOL

Department of Education  
National Capital Region

SCHOOLS DIVISION OFFICE  
MARIKINA CITY

# Practical Research 2

Second Quarter – Module 8  
Data Using Appropriate Instruments



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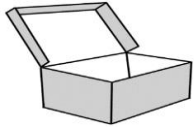
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## What I Need to Know

A pleasant day Senior High School Students! In this lesson, you are going to learn how to:

Collect data using appropriate instruments

You can say that you have understood the lesson in this module if you can already:

1. distinguish between primary and secondary data;
2. evaluate the research instrument to be used;
3. describe research design in quantitative data; and
4. illustrate the concept of data collection and the appropriate techniques:



## What I Know

Please answer the following survey question and tick the circles base on your characteristics.

1. 1. Name (optional): \_\_\_\_\_
2. Gender:
  - ☐ Male
  - ☐ Female
3. Age:
  - ☐ 16 – 18
  - ☐ 19 – 21
  - ☐ 22 and above
4. Senior High School Strand:
  - ☐ Academic
  - ☐ Tech-Voc
  - ☐ Gas
  - ☐ Others pls, specify \_\_\_\_\_
5. How many years of computer experience have you had?
  - ☐ 1 – 3 years
  - ☐ 4 – 6 years
  - ☐ 7 years and above
6. On a scale of 1 to 10 with 10 being the most, how confident are you that you will learn practical research? \_\_\_\_\_



# Lesson 1

## Collects Data Using Appropriate Instruments



### What's In

In the previous lessons, you learned how to construct an instrument and establish its validity and reliability. Can you still remember what you've learned? Can you tell the instruments and establish the validity and reliability in research instruments without browsing back the pages of this module? Let us see if you could do the tasks below as directed.

In your own words, do the following as directed.

- A. Write a short paragraph about validity of research instruments

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- B. Write a short paragraph about reliability of research instruments

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- C. What is your understanding about research instruments?

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## What's New

### A. Before Reading Activity

Let us go back to your research question analyze carefully, then research a similar title on the existing published or unpublished research and try to look on their similarities.

### B. During Reading Activity

Let us read and focus on the data collection methods and instruments they used.

### C. After Reading Activity

Let us analyze the research topic by answering the following questions:

Research Question:

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1. Where do you plan to gather information?

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2. What research design you used?

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3. Who are your respondents? Type of data used?

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## What is It

Dear learner, you are about to be done with the study you are conducting. In today's lesson, you will learn about how to collect data using appropriate instruments. After generating your research methodology and clarifying the perspective you use in the previous module you will have to find support that will give weight to your research arguments. This lesson will use your research topic as a tool in identifying and analyzing instrument to be used, and how it is being collected. Researchers always consider two major options in gathering data: (1) primary data, a data that you should have to write *firsthand* information which you gathered directly from the original source. Examples are: *observation, interviews, questionnaires or survey*. (2) secondary data, a data that defines information taken from the *second hand* sources which you collected from catalogues, magazines, census and other related statistical publications such as books including dictionaries, journals, articles and all second -hand sources.



Data Collection refers to the process of gathering and measuring information on variables of interest (dependent and independent variables). It is a systematic process wherein it answers question from statement of the problems, research hypothesis or even the frameworks. Meaning, data collection is the most important part of research, irrespective of the kind or field of research.

Quantitative research is used to explain a phenomenon and quantify the extent of an issue, situation or reality. It uses a numerical measure between two variables, the independent which is a predictor and dependent variables or an outcome variable. Thus, it also considers a research design to be used as a tool to help you in choosing what particular instrument you will apply. A quantitative research can either be correlational, descriptive, or experimental. A *correlational research design* is where the relationship of two variables are being applied. Whereas, *descriptive research design* is used for survey. And *experimental research design* establishes the causal relationship of the variables.

Examples of Descriptive Research Design:

- What are the sleeping habits of SHS student in Marikina High School?
- What factors affected the SHS tracks choice of SHS students?

Examples of Correlational Research Design:

- Is there a relationship between phone brand and Facebook usage among teens?

Examples of Experimental Research Design:

- The impact of service quality on customer satisfaction of Goldilocks.

Defining operationally, Data gathering is an instrument or a tool in which data can be obtained from the participant or respondent of the study. It is the technique use to obtain the information in study and investigation to substantiate the claims made by a researcher. Most studies would utilize a correlational approach and descriptive survey method using questionnaires scored by a Likert interval. On the other hand, tools such as observation sheets and interview schedules may also be employed to gather data.

### **Guidelines in Data Gathering:**

- Plan an approach and method
- Identify issues and or opportunities for collecting data
- Identify the instrument to be used based on the problem and sub-problems
- Specify reliability data and describe validity information of the data.

### **Quantitative data gathering strategies**

1. **Observation** – a technique used by an individual/s to gather first hand data on programs, processes, or behavioral being studied, it is a way of collecting a primary source of information, like watching and listening to an interaction or phenomenon, issues or realities as it takes places. However, it is a time consuming and costly.

- 2. Interview** – is a method for collecting information about people-their thoughts, behaviors, opinions, concerns, or aspirations. On the other hand, interview can be used at any stage of evaluation process. Two types of interview are *structured interviews* follows particular script and usually effective when you desire to have fast and uniform interviews, directionless at first. While *unstructured interview* will supplement the data gathered through questionnaires. Personal interviews are done when people usually respond when asked by a person but their answer may be influenced by the interviewer.

**Other types of interview**

- Telephone interview
- Focused interview
- Clinical interview
- Disguised interview

- 3. Questionnaires** – A written list of question often use of checklist and rating scale which respondent fills out or answers and give back to the researcher. It is best to give an ample time for the respondent to answer it and a set deadline for the respondent. Questionnaire is more qualitative in nature which involves open-**ended and closed-ended** questionnaires. Although similar in intent to a structured interview, questionnaires are usually more efficient and less expensive since there is no need for the interview and the respondent to be in the same location.

**Content Criteria for a good Questionnaire**

- ✓ Purpose – adequately answer the objectives and hypothesis of the study.
- ✓ Language – words should be familiar and clear.
- ✓ Consider the type of questionnaire (structure and unstructured)

- 4. Experiments** – It attempts to determine a cause and effect relationship between two or more variables.

**Supplementary Notes:**

Personal survey is a research instrument that asks respondents personal questions, which you then try to aggregate. This is how to get percentage of respondent who will answer a “yes or no” to the question in your survey. A simple survey can include personal **quantitative questions** (e.g. how many years of computers you have had?) and **categories** of people or may be a gender classification like “male or female”. Meanwhile, attitudinal or behavioral survey is usually in the form of Likert scale that ask the respondent to choose from set of number (strongly disagree to strongly agree, never to always).

<b>Personal Survey</b>					
Name:	Age:	Gender: M/F			
Current School:					
Your Grade Level:					
Senior High School Strands:					
<b>Attitudinal / Behavioral Survey</b>					
	Strongly Disagree to strongly Agree				
I am confident in my writing skills.	SD	D	N	A	SA
I enjoy writing research.	SD	D	N	A	SA
I write at least once a day.	SD	D	N	A	SA



## Activity: Self Construction

Decide a researchable topic leading to a quantitative research suited to the level of your strands. And think of at least 5-6 possible personal survey questions that is possible to ask based on the topic you decide. Please include personal information. (See *pre - assessment activity*)

Topic:

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Questions:

1. 

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3. 

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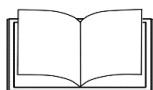
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4. 

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5. 

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## What's More

Answer the following activities to practice your knowledge and skill about the topic on collection of data using appropriate instruments

### Activity 1- Determine the design

Determine what research design is applicable for the following research topics:

Research topics	Research design
1. Internet availability at home and student's average sleeping at night	
2. Social media involvement and practices of Grade 12 ABM students	
3. The effect of the use of local packaging material on the shelf life of a product.	
4. The marketability of innovative products to SHS students.	
5. Children of single parents and their level of Math anxiety.	





## Activity 2 – Citing your idea

Identify the different strategies for writing an effective conclusion by writing them on the numbered rows on the left side of the table below. Then using your own words, write on the right column one or two sentences discussing each strategy.

Be guided with the rubrics below when writing your task.

### Rubrics for Grading Output:

Criteria	Outstanding 10 points	Very Satisfactory 8 points	Satisfactory 6 points		Needs Improvement 4 points
Content	Strength and weaknesses are completely written and is well discussed.	Strength and weaknesses are satisfactorily written and discussed.	Strength and weaknesses are somehow given and discussed.		Strengths and weaknesses are not given and discussed.

Do your task here:

Data Collection	Strength	Weakness
1. Internet		
2. Mail questionnaire		
3. Telephone		

## Activity 3 - Identification

Identify the following information, write **PD** for primary data and **SD** for secondary data.

1. First person accounts: \_\_\_\_\_
2. Magazines: \_\_\_\_\_
3. Monographs manuscript, etc.: \_\_\_\_\_
4. Interview: \_\_\_\_\_
5. Books, encyclopedia, dictionaries: \_\_\_\_\_



## What I Have Learned

In this lesson, you focused on data collection using appropriate instruments and now that you have finished. Express what you have learned by answering the questions below.

1. It is important to consider what \_\_\_\_\_ to be used so that it will be easy to collect data.
2. Collection of data and the use of instrument is always connected for \_\_\_\_\_ of the tools to be used.





3. It is considered to identify \_\_\_\_\_ and \_\_\_\_\_ to be used in order for the researcher to decide what instrument he/she will be using.
4. \_\_\_\_\_ refers to the process of gathering and measuring information on variables of interest.
5. \_\_\_\_\_ written list of question often uses of checklist and rating scale which respondent fills out or answers and give feedback to the researcher.



## What I Can Do

Apply what you have learned in this module by doing this activity.  
Write your concise learning about the following

1. Primary data

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2. Secondary data

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3. Primary tools of collecting data

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4. Personal interview

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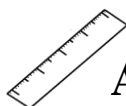
5. Unstructured interview

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## Assessment

Showcase the knowledge and skills you have learned in this lesson by answering the assessment activity. Read at least 3 articles similar to your research topic, choose one and answer the following.

1. Research title: \_\_\_\_\_

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2. Identify the research design used in the chosen topic:

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3. What type of instrument is used?

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4. Is there other instrument that can be used in the chosen articles? Explain.

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## Additional Activities

Encircle the best answer that agrees on the given questions.

1. It is advantageous in studies when original data can be collected at the time it is happening.  
A. Experiment  
B. Interviewing  
C. Observation  
D. Survey
2. A commonly used method of collecting information from people.  
A. Experiment  
B. Interviewing  
C. Observation  
D. Survey
3. The following information is a secondary data collection EXCEPT for.  
A. Articles published in professional journals  
B. First person accounts  
C. Monographs manuscripts  
D. Unpublished master's thesis and dissertation
4. After reading this method section of a quantitative research report, you should know \_\_\_\_\_.  
A. how the researcher concludes and interprets  
B. the researcher's interpretation of the statistical results  
C. what the researcher did to collect data  
D. which framework you should use
5. Quantitative research only works if \_\_\_\_\_.  
A. you ask the right questions and analyze the data you get in the right way.  
B. you talk to the right people  
C. you ask the right questions to a number of people  
D. you talk to the right number of people.



## Post Test

Read the test items carefully and tick the letter of the correct answer.

1. What data do quantitative methods use to primarily collect?  
A. Descriptive  
B. Narrative  
C. Numerical  
D. Visual



2. The process of gathering and measuring systematic information on variables of interest wherein it answers question from statement of the problem.
  - A. Data collection
  - B. Interviews
  - C. Observation
  - D. Survey
3. The following are found in the writing of the methodology EXCEPT.
  - A. Instruments
  - B. Participants
  - C. Problem
  - D. Research design and procedure
4. Statistical analysis is heavily focused in making the final report of a \_\_\_\_\_.
  - A. Ethnographic study
  - B. Quantitative research
  - C. Qualitative research
  - D. Phenomenological study
5. If I want to gather data about working hours of teachers in the City of Manila, which of the answer choices represents the most accurate sample.
  - A. 1,000 teachers in Metro Manila
  - B. 1,000 teachers in Manila
  - C. 1,000 people in Manila
  - D. 400 people in 10 cities of Metro Manila
6. Qualification questions may include all of the following EXCEPT.
  - A. Age/sex categories
  - B. Brand usage
  - C. Feeling toward a brand
  - D. Security issues
7. Which of the following type of items is not a selection item?
  - A. Matching
  - B. Multiple choice
  - C. True-false
  - D. Short answer
8. A commonly used method of collecting information from people or an interaction between two or more individuals with specific purpose in mind.
  - A. Interview
  - B. Observation
  - C. Questionnaire
  - D. Survey
9. The following are secondary data collection Except.
  - A. All other second- hand sources
  - B. Books including dictionaries
  - C. First person accounts
  - D. Monographs manuscripts, etc.,
10. Which of the following method is NOT a method of data collection?
  - A. Experiments
  - B. Interviews
  - C. Observation
  - D. Questionnaires





## References

### Books:

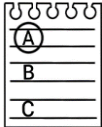
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## Answer Key

<b>What I Know</b> (answers may vary)	
<b>What's In</b> (answers may vary)	
<b>What's New</b> (answers may vary)	
<b>What Is It</b> (answers may vary)	
<b>What's More</b> (answers may vary)	
<b>Activity 1 – Determine the design</b>	1. Correlational 2. Descriptive 3. Experimental 4. Descriptive 5. Descriptive
<b>Activity 2 – Citing your idea</b> (answers may vary)	
<b>Activity 3 – Identification</b>	1. PD 2. SD 3. SD 4. PD 5. SD
<b>What I have learned</b>	1. Research Design 2. Formulation 3. Primary and Secondary data 4. Data collection 5. Questionnaires
<b>What I Can Do</b> (answers may vary)	
<b>Assessment</b> (answers may vary)	
<b>Activity – Do the following</b> (answers may vary)	
<b>Additional Activities – Learning enrichment</b>	1. C 2. B 3. B 4. D 5. C



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