

**SENIOR HIGH SCHOOL**

Department of Education  
National Capital Region

**SCHOOLS DIVISION OFFICE  
MARIKINA CITY**

# **Practical Research 2**

## **Quarter 2- Module 3**

### **Quantitative Research Instrument**

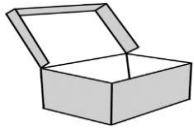


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## What I Need to Know

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

Construct an instrument and establish its validity and reliability CS\_RS12-IIa-c-3

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

1. explain the meaning of research instrument;
2. classify the type of research instrument;
3. discuss the elements of research instrument; and
4. present the steps in developing or constructing research instrument.



## What I Know

Before you proceed to the different activities inside the module, answer first this **pre-assessment activity** below to find out what you already know about the topic qualitative research instrument.

Select your answers from the options provided after each item. Write the letter of the correct answer before the number.

1. What is the generic term that researchers use for a measurement device?  
A. Research Instrument  
B. Research Instrumentation  
C. Research Problem  
D. Research Question
2. What research term refers to the course of action like the process of developing, testing, and using device?  
A. Research Instrument  
B. Research Instrumentation  
C. Research Problem  
D. Research Question
3. Which among the following instrument is a researcher-completed instrument?  
A. Questionnaire  
B. Rating Scale  
C. Self-checklist  
D. Sociometric Device
4. What research term refers to the ease in which instrument can be administered and interpreted by the participants and scored/interpreted by the researcher?  
A. Interpretability  
B. Reliability  
C. Usability  
D. Validity
5. The following instruments are subject-completed instruments **except one**. What is it?  
A. Flow charts  
B. Interview Scale  
C. Time-and-motion logs  
D. Attitude Scales

6. What is the extent to which an instrument measures what is supposed to measure and performs as it is designed to perform?
  - A. Interpretability
  - B. Reliability
  - C. Usability
  - D. Validity
7. Which of the following refers to the consistency of instrument?
  - A. Interpretability
  - B. Reliability
  - C. Usability
  - D. Validity
8. The following examples are types of reliability **except** one. What is it?
  - A. Internal consistency reliability
  - B. Inter-rater or observer reliability
  - C. Test-retest reliability
  - D. External Reliability
9. Which of the following is the extent to which the results of a study can be generalized from a sample to a population?
  - A. Content validity
  - B. External validity
  - C. Internal consistency validity
  - D. Parallel validity
10. What research term refers to the appropriateness of the content of an instrument?
  - A. Content validity
  - B. External validity
  - C. Internal consistency validity
  - D. Parallel validity

## Lesson 1

# Quantitative Research Instrument



## What's In

In your Practical Research 1 subject you studied about **QUALITATIVE RESEARCH INSTRUMENT**. This task will help you to recall your previous lesson regarding qualitative research instrument

1. What type of research instrument have you constructed in your Practical Research 1 subject?

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2. Cite at least 3 questions that you included in your qualitative research instrument.

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## What's New

### A. Before Reading Activity

If you still remember, last June 2020 was enrollment period and you were required to answer a survey either using an online platform or manual process in order to be admitted in your chosen school. Can you recall the process that you have done when you enrolled in your chosen school? Write your answer below?

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### B. During Reading activity

Read and analyze the attached enrollment survey in this module, after which you have to fill up the necessary information being asked.

### C. After Reading Activity

1. What is the survey all about?

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2. What are the things that the survey required you to give? Cite at least 5 things or information that the survey asked?

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3. What do you think is the objective of the survey?

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## What is It

Since you already know how to determine the participants of the study which was discussed in Module 2, this time you will proceed to the second step of data collection which Creswell (2014) suggested to be followed by the researcher: **to determine the type of research instrument that you will use to collect data.** Specifically, you will learn what research instrument is, classify the type of research instrument, and the steps in developing or constructing a research instrument.



As defined, the term research instrument is a generic term that researchers use for a measurement device (survey, test, and questionnaire), and to clarify the distinction between instrument and instrumentation, the term **INSTRUMENT** as stated a while ago is a **DEVICE**. While the term **INSTRUMENTATION** is the course of action or it refers to the process of developing, testing, and using the device. In quantitative research, most of the time, instrument is the tool used by the researcher to collect the data, it can be in the form of survey as a means to collect numerical data and it is always structured. Moreover, research instruments fall into two broad categories, the researcher-completed instrument and subject-completed instrument.

Research-completed instruments are the rating scales, interview schedule, tally sheets, flow charts, performance checklists, time and motion logs, and observation forms. While subject-completed instruments are questionnaires, self-checklist, attitude scales, personality inventories, achievement or aptitude tests, projective devices, and sociometric devices

In the quantitative research, the most common method to gather the data is a *survey* in which researcher uses the tool **“QUESTIONNAIRE”**. Wilkinson and Birmingham (2003), mentioned that a *questionnaire is a research tool used by those people who are engaged in research*. It is often said to provide a cheap and effective way of collecting data which is structured and can be managed. In most cases, a researcher who constructs an initial draft of questionnaire may be misleading or ambiguous. However, if the questionnaire is well-planned and well developed it can produce a rich data in a format which is ready for analysis and simple interpretation. Wilkinson and Birmingham (2003) cited 3 benefits of using questionnaire: first, questionnaires are inexpensive to administer. Second, minimal is needed to develop or construct a questionnaire. Lastly, they can be easily and quickly analyzed once completed.

### **Types of Questionnaire**

There are three types of questionnaire, the mail-survey questionnaire, the group-administered questionnaire, and the household drop-off survey.

1. **Mail-survey questionnaire**- According to Wilkinson and Birmingham (2003) it is the most common type of questionnaire in which it is being addressed to the respondents and send it through mail. Efficient in terms of collecting data in a large sample of respondents. However, it can be informal and can suffer in a lower response rate.
2. **Group-Administered questionnaire**- it is considered as a relevant instrument for collecting data from respondents who can naturally be brought together for the purpose of the study. This instrument allows the respondents to finish answering it and submit it to the researcher upon its completion.
3. **Household drop-off survey questionnaire**- it is a combination of mail and the group administered survey. With this questionnaire, the research handed the questionnaire to the member of an identified household for collection at some later date.

What type of question should be asked or used in constructing questionnaire?

Questionnaire consists of different numbers of approaches in asking questions. The common type of questions used are **CLOSED QUESTIONS, MULTIPLE CHOICE QUESTIONS, OPEN-ENDED QUESTIONS, SCALE ITEM QUESTIONS** and **ROUTING QUESTIONS**.

1. **Closed questions**- these questions are sometimes called dichotomous question to which all possible answers are provided. Usually, the most used dichotomous question is a question that requires “yes” or “no” answer or response.

1. Is there an experiment that needs to be conducted?	YES	NO
If your answer in question #1 is YES, do you need to conduct the following?		
• Pre-test	YES	NO
• Intervention	YES	NO
• Post-test	YES	NO
If your answer in question #1 is NO, proceed to question #2		
2. Is there a need to describe or to survey certain variables or elements in your research title?	YES	NO
3. Based on your proposed research title, is there a need to compare your variables in the conduct of the study?	YES	NO
4. Is there a need to determine the extent of relationship among your independent and dependent variable/s?	YES	NO

In the example survey above, items 1, 2, 3, and 4 are examples of dichotomous question in which the answer should either be “yes” or “no”.

2. **Multiple-choice question**- it is a type of question which provides a number of pre-identified responses. However, constructing and piloting multiple choice question requires careful and rigorous work to ensure its validity and reliability. Example:

Which of the following are important attributes of an employee? (please tick all that apply)

- \_\_\_ Good timekeeping
- \_\_\_ Well developed customer relation skills
- \_\_\_ Good numerical skills
- \_\_\_ Ability to liaise with other staff in other departments

In the enrollment form that you have answered in *What's New*, what are the parts of enrollment form that use multiple choice questions?

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3. **Open-ended questions**- it actually employs what closed and multiple-choice question does. The answer in an open-ended question cannot be pre-determined. Responses are difficult to analyze and interpret. Once the analyzed response is being recorded, it is being coded to reveal the meaning of the response.

Example: In customer's evaluation of the service provided, these questions are being asked:

3.1. How would you describe your experience to us? \_\_\_\_\_

3.2. What are your suggestions to improve our service? \_\_\_\_\_

4. **Scale-item questions**- this question requires the respondents to include the answers according to the pre-determined list or scale. It is usually ranging from very positive to negative order, from highest to lowest, or from top to bottom. An example of scale-item question is; **LIKERT TYPE QUESTIONS**.

4.1 **Likert type questions**- are the most popular type of scale question item in the questionnaire. It actually measures attitude to set statements put by the questionnaires. The respondents are provided with the scale of possible responses (usually five responses) to the question ranging from the first answer/response to its opposite part.

Examples:

4.1.1 STRONGLY AGREE- AGREE-STRONGLY DISAGREE

4.1.2 EXCELLENT-VERY GOOD-FAIR-POOR-VERY POOR

4.1.3 MUCH BETTER THAN EXPECTED-BETTER THAN EXPECTED-SLIGHTLY BETTER EXPECTED-ABOUT AS EXPECTED-SLIGHTLY WORSE THAN EXPECTED-WORSE THAN EXPECTED-MUCH WORSE THAN EXPECTED.

4.1.4 VERY LIKELY-LIKELY-SOMEWHAT LIKELY-NEITHER LIKELY NOR UNLIKELY-SOMEWHAT UNLIKELY-UNLIKELY-VERY UNLIKELY.

5. **Routing Questions**- other type of scale item question is routing question where it is designed to provide sign posts or routing questions that will help the respondents to answer the survey easily.

1. Is there an experiment that needs to be conducted?	YES	NO
If your answer in question #1 is YES, do you need to conduct the following?		
• Pre-test	YES	NO
• Intervention	YES	NO
• Post-test	YES	NO

The question in the table *"If your answer in question #1 is YES, do you need to conduct the following?"* is an example of routing question.

In the pre-enrollment used a while ago, cite at least two portions that used routing questions.

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## Type of Scales Used in Quantitative Research

1. **Ordinal Scale**- a scale in which it presents the response input options where participants rank their answer from most important to the least one (Tracy, 2019). An example of ordinal scale is a Likert scale which was discussed in the above.

Examples:

Sample A: I found the School's FB group page useful	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Sample B: How would you rate the information posted in School's FB group page?	Extremely relevant	Very relevant	relevant	Somewhat relevant	Not relevant

2. **Interval Scale**- a scale used to rank a particular attribute using numerically equal distances on the scale represented (FormplusBlog, 2019).

Example:

On the scale of 1-5, from 1 as being very poor and 10 as being very good, how would you rate the FEEBACK/REPLY TO YOUR QUERIES IN SCHOOL'S FB GROUP PAGE?

1	2	3	4	5
VERY POOR				VERY GOOD

3. **Nominal Scale**-is a scale that is considered as categorical scale and sometimes the assigned numbers do not have an arithmetic value. Respondents/participants may check their preferred answer on the choices given.

Examples:

Highest Educational Attainment		
<input type="checkbox"/> Elementary	<input type="checkbox"/> Technical/Vocational	<input type="checkbox"/> Masteral
<input type="checkbox"/> High School	<input type="checkbox"/> College	<input type="checkbox"/> PhD/Ed.D.

Check all the gadget that you are using in online class		
<input type="checkbox"/> Cellphone	<input type="checkbox"/> Personal Computer	<input type="checkbox"/> Netbook
<input type="checkbox"/> Laptop	<input type="checkbox"/> Tablet	<input type="checkbox"/>

Gender	
<input type="checkbox"/> Male	<input type="checkbox"/> Female

Civil Status			
<input type="checkbox"/> Single	<input type="checkbox"/> Married	<input type="checkbox"/> Widow	<input type="checkbox"/> Widower

In the pre-enrollment used a while ago, cite at least two portions that used nominal scale

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Steps in developing or constructing a research instrument as adapted by Creswell (2014) from Benson and Clark (1983).

**Phase I: Planning**

- A. State the purpose of the test and target group
- B. Identify and define the domain of the test
- C. Review the literature on construct or variable of interest
- D. Give open-ended questions to target group
- E. Interpret open-ended comments
- F. Write objectives
- G. Select item format

**Phase II: Construction**

- A. Develop the table of specification
- B. Hire and train item writers
- C. Write pool items
- D. Validate the content
- E. Have judges complete qualitative evaluation
- F. Develop now or revise items

**Phase III: Quantitative Evaluation**

- A. Prepare instrument for the first pilot test
- B. Administer the pilot test
- C. Debrief the subjects
- D. Calculate reliability
- E. Run item analysis
- F. Revise the item analysis
- G. Revise the instrument
- H. Prepare for the second pilot test

**Phase IV: Validation**

- A. Administer the second pilot test
- B. Run item analysis
- C. Repeat the steps of revision, pilot and administration, and item analysis
- D. Begin the validation
- E. Administer for validation data
- F. Continue validation

In the phase 3 and phase 4 of constructing research instrument, knowing the validity and reliability of the constructed or developed research instrument is very important. Let us differentiate the two terms: Reliability and Validity.

**Reliability**-refers to the process of consistently measuring what is intended to measure. Creswell (2014) stated that it is not possible to calculate reliability. However, it can be estimated through the following type of reliability test.

1. **Test-retest reliability**- refers to the consistency of a measure evaluated over time. In order to determine the reliability of this method, the researcher administers test at two different times to the same participants. If the score obtained are reliable, then both scores will be correlated.
2. **Parallel-forms reliability**- the reliability of two tests constructed the same way from the same content, same level of difficulty, and same type of scales.
3. **Inter-rater reliability**- the type of reliability in which different rate/observer/respondents give consistent answers or estimates.
4. **Internal consistency reliability**- the consistency of result across items, often measured with Cronbach's Alpha.



The table below shows the function and nature of each reliability test by Creswell (2014)

<b>Types of Reliability</b>			
<b>Form</b>	<b>Number of instruments administered</b>	<b>Number of different versions of the instrument</b>	<b>Number of individuals who provide information</b>
Test-retest reliability	Twice at different time	One version of the instrument	Each participant in the study completes the instrument twice
Parallel form reliability	Each instrument administered once	Two different versions of the same concept of variable	Each participant in the study completes each instrument
Inter-rater reliability	Instrument administered once	One version of the instrument	More than one individual observes behavior of the participants
Internal consistency reliability	Instrument administered once	One version of the instrument	Each participant in the study completes the instrument

The following formulas are used to get the reliability of the research instruments, they are: **KUDER RICHARDSON SPLIT HALF TEST**, **SPEARMAN-BROWN FORMULA**, AND **COEFFICIENT ALPHA**.

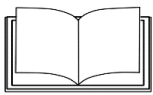
**Validity**- is the extent to which an instrument measures what it is supposed to measure and perform as it is designed to perform. There are two types of validity, the **EXTERNAL VALIDITY** and **CONTENT VALIDITY**.

1. **External Validity**- according to Trochin (2020), external validity refers to the approximate truth of conclusions that involve generalization. In other words, external validity brings the conclusion of the study for other person, in other places, and at other times.
2. **Content Validity**- refers to the degree to which the instrument fully assesses or measures the construct of interest. A research instrument is considered as valid if the questionnaires contain a question which covers all aspects of the construct being measured.

Aside from the type of research instrument discussed and the steps in developing a research instrument. The following factors should also be considered:

1. Locate or develop an instrument  
there are three options under this factor, first a researcher can fully develop or construct a research instrument. Second, a researcher can search one and modify it, depending on the nature of the proposed study. Third, a researcher can search for a ready-made instrument and use it entirely in the study, but see to it that permission should be given by the proponent of the instrument allowing the researcher to use it.
2. If the literature and other data of the ready-made research instrument are not available, then the researcher should modify it by obtaining permission to change it and making changes that is fit to his/her study. In addition, author of the original instrument will seek a copy of the researcher's modified instrument and the result of it so that he or she can determine the relevance of his/her instrument in the field of research.

3. The reference or the author of the research instrument developed should be recent. Instrument that is developed five to ten years ago is outdated or obsolete already.
4. A ready-made research instrument should be widely cited by other authors. Frequently used and cited research instrument is a good indicator that the instrument is well-planned and crafted.
5. Aside from being cited by many authors researcher should look for published articles that shows reviews and commentaries regarding the research instrument that researcher wants to use.
6. If in case that other related publish articles regarding the research instrument that you may want to use are available, look for the details or information regarding the reliability and validity of the research instrument.
7. Another consideration in using a ready-made research instrument is the appropriateness of the procedure of recording the data to the research questions and to the hypothesis of the study.



## What's More

Answer the activities that will follow to practice your knowledge and skill about research instrument.

### Activity 1. QUESTIONS IN QUESTIONNAIRE!

The following statements are lifted from the research instrument used in the study conducted, “The Perceptions of the Customer in the Loyalty Program and Customer Engagement Services of National Bookstore”. Your task is to transform the following questions into the following ways: CLOSED QUESTIONS, MULTIPLE-CHOICE TYPE QUESTIONS, OPEN-ENDED QUESTIONS, SCALE QUESTIONS, ROUTING QUESTIONS.

### The customers' perception on National Bookstore Loyalty Program in terms of Points System

Statements:

1. I appreciate the points at national bookstore.
2. I love getting points using national bookstore loyalty card.
3. It gives discount, gifts, or special customer treatment at National Bookstore.
4. The National Bookstore card is easy and quick to earn points.
5. I am absolutely satisfied that the National Bookstore card is in excellent service.

#### A. Closed Questions

**B. Multiple Choice type questions (choose only 2 statements above and transform it into multiple choice type questions)**

**C. Open ended questions (choose at least 2 from the indicators given)**

**D. Scale questions (Likert scale)**

**E. Routing questions (choose at least 2 indicators)**



## Activity 2 Scales on the Questionnaire

Utilize the following scales (ordinal, interval, and nominal) in constructing research instrument using the following statements:

- A. For ordinal and interval, use the statement in the research instrument used a while ago.
1. I appreciate the points at national bookstore.
  2. I love getting points using national bookstore loyalty card.
  3. It gives discount, gifts, or special customer treatment at National Bookstore.
  4. The National Bookstore card is easy and quick to earn points.
  5. I am absolutely satisfied that the National Bookstore card is in excellent service.

### ORDINAL SCALE

### INTERVAL SCALE

B. For nominal scale, construct a research instrument using the variables being asked in this research questions/statement of the problem.

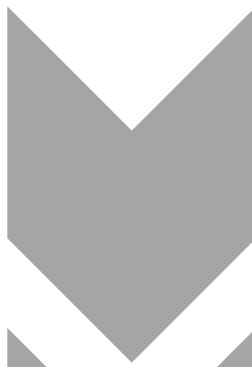


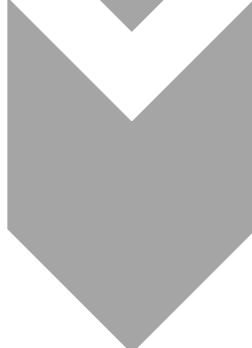
1. What is the demographic profile of the respondents in terms of:

- 1.1 gender
- 1.2 age
- 1.3 highest educational attainment
- 1.4 monthly income



### Activity 3. STAGES IN DEVELOPING RESEARCH INSTRUMENT

Present the stages and the procedure in each stage in developing a research instrument using the graphic organizer below.

STEPS	PROCEDURE
	<ul style="list-style-type: none"><li>•A</li><li>•B</li><li>•C</li><li>•D</li><li>•E</li><li>•F</li><li>•G</li></ul>
	<ul style="list-style-type: none"><li>•A</li><li>•B</li><li>•C</li><li>•D</li><li>•E</li><li>•F</li><li>•G</li></ul>
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	<ul style="list-style-type: none"><li>•A</li><li>•B</li><li>•C</li><li>•D</li><li>•E</li><li>•F</li><li>•G</li></ul>



## What I Have Learned

In this lesson, we focused on constructing a research instrument. Express what you have learned by completing the information in this graphic organizer.

2 things that you have learned in this lesson specifically on the following topics:	The difficulties I encountered in the lesson is/are?	I will use my today's learning in/to...?
<b>Concept of Research Instrument</b>		
<b>Types of research instrument</b>		
<b>Types of questionnaire</b>		
<b>Scales used in constructing research instrument</b>		
<b>Process or steps in constructing research instrument</b>		



## What I Can Do

Apply what you have learned about quantitative research instrument.

- A. Fill in the following information needed in the box. Your answer will be based on the answers from your previous module.

A. Your proposed research title:

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B. Your proposed Research Questions/Statement of the problem:

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C. Your proposed research design:

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D. Research instrument (Questionnaire):

1. Possible Approach/type of questions that you will use in your questionnaire based on your research questions/statement of the problem  

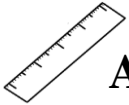
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2. Possible scale that you will use based on your research questions/statement of the problem  

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- E. Construct a questionnaire for your proposed research questions/statement of the problem 1 and 2 using your proposed approach/type of questions and scale that you will be using for your instrument. In each questionnaire, develop at least 5 questions in each questionnaire.

### Processing questions:

1. What possible reliability test can you use to measure the reliability of your research instrument?  
\_\_\_\_\_  
\_\_\_\_\_
2. How will you use the external and content validity in validating your research instrument?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## Assessment

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

Encircled the letter of the correct answer.

1. The term used by the researcher as a means of measuring device in a form of survey, test, and questionnaire.  
A. Research Instrument                      C. Research Method  
B. Research Instrumentation              D. Research Methodology
2. It refers to the course of action which includes the process of developing, testing, and using device.  
A. Research Instrument                      C. Research Method  
B. Research Instrumentation              D. Research Methodology
3. It is considered as the most favored tool of many people who are engaged in doing a research.  
A. Flowchart                                      C. Questionnaire  
B. Interview                                      D. Sociometric device
4. The type of questionnaire addressed to the respondents and send it through mail  
A. Group-administered survey              C. Questionnaire  
B. Household drop-off survey              D. Sociometric Device
5. Ana is conducting a research about student preference on learning a particular subject. She administers a survey questionnaire to a group of students who are attending students' assembly. Based on the situation, what type of questionnaire is being used by Ana?  
A. Group-administered survey              C. Questionnaire  
B. Household drop-off survey              D. Sociometric Device
6. Mendel is distributing the questionnaire to every household included in the pool of respondents and he told every household to take time in answering the survey because he will collect upon its completion. What type questionnaire is being used in this situation?  
A. Group-administered survey              C. Questionnaire  
B. Household drop-off survey              D. Sociometric Device



7. Do you prefer to use internet in searching for a reference? \_\_\_\_ yes \_\_\_\_ no. Based on this example, what type of question is used?
  - A. Closed question
  - B. Multiple-choice question
  - C. Open-ended question
  - D. Routing question
8. This type of question provides a number of pre-defined responses
  - A. Closed question
  - B. Multiple-choice question
  - C. Open-ended question
  - D. Routing question
9. It employs none of the restrictions of closed and multiple-choice questions.
  - A. Closed question
  - B. Multiple-choice question
  - C. Open-ended question
  - D. Routing question
10. This question requires the respondents to indicate answers according to the pre-determined list or scale usually from most likely to least likely.
  - A. Closed question
  - B. Multiple-choice question
  - C. Routing question
  - D. Scale item question
11. Do you watch any series in Netflix? \_\_\_\_ yes \_\_\_\_ no, (if “No” please proceed to question #5). What type of question is used in this example?
  - A. Closed question
  - B. Multiple-choice question
  - C. Routing question
  - D. Scale item question
12. This type of scale in quantitative research presents response input options from most important to the least important.
  - A. Interval Scale
  - B. Nominal Scale
  - C. Ordinal Scale
  - D. Production Scale
13. It is used to rank a particular element in the question using numerically equal distances.
  - A. Interval Scale
  - B. Nominal Scale
  - C. Ordinal Scale
  - D. Production Scale
14. This type of scale is considered as categorical scale
  - A. Interval Scale
  - B. Nominal Scale
  - C. Ordinal Scale
  - D. Production Scale
15. This step in developing a research instrument which involves developing table of specification
  - A. Construction
  - B. Planning
  - C. Quantitative Evaluation
  - D. Validation
16. Which among the following procedure describes the validation step in research instrument construction?
  - A. Administer after a pilot test
  - B. Calculate the reliability
  - C. Run item analysis
  - D. Select item format
17. This is the extent in which it monitors the instrument if its consistently measure what is intended to measure.
  - A. Interpretability
  - B. Reliability
  - C. Usability
  - D. Validity



18. The type of reliability test that measured the consistency of results across items.
  - A. Internal consistency reliability
  - B. Inter-rater reliability
  - C. Parallel-form reliability
  - D. Test-retest reliability
19. It is the extent to which instrument measures what is supposed to measure.
  - A. Interpretability
  - B. Reliability
  - C. Usability
  - D. Validity
20. It refers to the approximate truth of conclusions that involves generalization.
  - A. Content validity
  - B. Engage validity
  - C. External validity
  - D. Real time validity



## Additional Activities

Rewrite the initial draft of your research instrument in the previous activity.

## Posttest

Write the letter of the correct answer on the space before the number

1. It refers to the course of action like the process of developing, testing, and using device.
  - A. Research Instrument
  - B. Research Instrumentation
  - C. Research Problem
  - D. Research Question
2. It refers to the appropriateness of the content of an instrument.
  - A. Content validity
  - B. External validity
  - C. Internal consistency validity
  - D. Parallel validity
3. It refers to the ease in which instrument can be administered and interpreted by the participants and scored/interpreted by the researcher?
  - A. Interpretability
  - B. Reliability
  - C. Usability
  - D. Validity
4. It is a generic term that researches use for a measurement device.
  - A. Research Instrument
  - B. Research Instrumentation
  - C. Research Problem
  - D. Research Question
5. Which among the following instrument is a researcher-completed instrument?
  - A. Questionnaire
  - B. Rating Scale
  - C. Self-checklist
  - D. Sociometric Device

6. It is the extent to which an instrument measures what is supposed to measure and performs as it is designed to perform.
 

A. Interpretability	C. Usability
B. Reliability	D. Validity
  
7. It is the extent to which the results of a study can be generalized from a sample to a population.
 

A. Content validity	C. Internal consistency validity
B. External validity	D. Parallel validity
  
8. The following examples are types of reliability **except**:
 

A. Internal consistency reliability	C. Test-retest reliability
B. Inter-rater or observer reliability	D. External Reliability
  
9. The following instruments are subject-completed instruments **except**:
 

A. Flow charts	C. Time-and-motion logs
B. Interview Scale	D. Attitude Scales
  
10. It refers to the consistency of instrument.
 

A. Interpretability	C. Usability
B. Reliability	D. Validity
  
11. Faye is conducting a research about student preference on learning a particular subject. She administers a survey questionnaire to a group of students who are attending students' assembly. Based on the situation, what type of questionnaire is being used by Ana?
 

A. Group-administered survey	C. Questionnaire
B. Household drop-off survey	D. Sociometric Device
  
12. Do you prefer to use internet in searching for a reference? \_\_\_ yes \_\_\_ no. Based on this example, what type of question is used?
 

A. Closed question	C. Open-ended question
B. Multiple-choice question	D. Routing question
  
13. This question requires the respondents to indicate answers according to the pre-determined list or scale usually from most likely to least likely
 

A. Closed question	C. Routing question
B. Multiple-choice question	D. Scale item question
  
14. It employs none of the restrictions of closed and multiple-choice questions
 

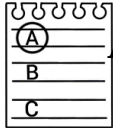
A. Closed question	C. Open-ended question
B. Multiple-choice question	D. Routing question
  
15. This step in developing a research instrument which involves developing table of specification
 

A. Construction	C. Quantitative Evaluation
B. Planning	D. Validation



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## Answer Key

### QUARTER 2 MODULE 3- RESEARCH INSTRUMENT (ANSWER KEY)

answers may varies depending on the proposed research title of the students

#### Additional Activities (page 23)

4. C	8. B	12. C	16. C	20. C
3. C	7. A	11. C	15. A	19. D
2. B	6. B	10. D	14. B	18. A
1. A	5. A	9. C	13. A	17. B

#### Assessment Activity (page 21-23)

What I can do (page 19-21): answers may varies depending on the proposed research title of the students

<p><b>Scales used in constructing research instrument</b></p> <p>In developing research instrument, a researcher should also determine the types of scale used in quantitative research; the ordinal scale, interval scale, and the nominal scale.</p> <p>Knowing the distinction of scales will help the researcher in formulating research instruments</p>	<p><b>Process or steps in constructing research instrument</b></p> <p>Aside from the type questions/approaches and scales used in quantitative research instrument they are as follows: Planning, Construction, Quantitative evaluation, and Validation.</p>
	<p>If in case that the researcher plans to utilize a ready-made research instrument whether fully use it or adopt and modify it, researcher should ask the permission of the author of that particular instrument. Researcher should also consider its usefulness by looking its citation in various studies related to it. Checking the reliability and validity of the research instrument should also be considered before using it.</p>



<p>2 things that you have learned in this lesson specifically on the following topics: (SUGGESTED ANSWERS)</p>	<p>the Difficulties I encountered the lesson is/are? (ANSWERS MAY VARY DEPENDING ON THE DIFFICULTIES ENCOUNTERED BY THE STUDENTS)</p>	<p>I will use my today's learning in/to...?(ANSWERS MAY VARY DEPENDING ON HOW THE STUDENTS WILL USE WHAT HE/SHE HAS LEARNED IN THIS MODULE)</p>
<p><b>Concept of Research Instrument</b></p>		
<p>Research Instrument is a generic term that is used for a measurement device (survey, test, and questionnaire).</p> <p>Instrumentation, is the course of action like the process of developing test/instrument, testing, and using a device.</p>		
<p><b>Types of research instrument</b></p>		
<p>completed-research instrument and subject-completed instrument.</p> <p>Each type of instrument contains various type of specific instrument</p>		
<p><b>Types of questionnaire</b></p>		
<p>There are three types of questionnaire; Mail-survey questionnaire, group-administered questionnaire, household-drop-off survey questionnaire</p> <p>Each type of questionnaire conveys different function and it is used depending on the nature of the research being conducted</p>		

## Planning

- A state the purpose of test and target groups
- B identify and define domain of test
- C review literature on construct or variable interest
- D give open-ended questions to target group
- E interpret open-ended comments
- F write objectives
- G Select item format

## Construction

- A Develop table of specifications
- B Hire and train item writers
- C Write pool items
- D Validate content
- E Have judges complete qualitative evaluation
- F Develop new or revise items

## Quantitative Evaluation

- A Prepare instrument for first pilot test
- B Administer first pilot test
- C Debrief subjects
- D Calculate reliability
- E Run item analysis
- F Revise instrument
- G Prepare for second pilot test

## Validation

- A Administer second pilot test
- B Run item analysis
- C Repeat steps of revision, pilot administration and item analysis
- D Begin validation
- E Administer for Validation data
- F Continue validation

Monthly income	5000-10000	16000-20000	21000-25000	31000-35000
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Highest Educational Attainment	Elementary	Technical/Vocational	College	High School	PhD/Ed.D.	Masteral
--------------------------------	------------	----------------------	---------	-------------	-----------	----------

Civil Status	Single	Married	Widow	Widower
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Gender	Male	Female
--------	------	--------

Age	21-30	31-40	41-50	51-60
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**B. NOMINAL SCALE**

Indicators	Very good 5	4	3	2	Poor 1
Pointing system or policy given in every transaction using the loyalty card program					
Appropriate Points given in each product					
Discount, gifts, or special customer treatment at National Bookstore					
Application and releasing of loyalty card program					
Services given to the loyalty card holder					

**A. INTERVAL SCALE**

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#### A. SCALE ITEM QUESTIONS

INDICATORS	
1. Do you appreciate the points given by the National bookstore?	YES NO
If your answer is "NO" please proceed to question #3	
2. Do you love the specific points given in each material?	
3. Are you satisfied in the discounts, gifts, or special customer treatment of the loyalty card holder?	
4. Is the loyalty card of National Bookstore easy and quick to earn points?	
If your answer is "NO" in #4 please proceed to question #8...	

**ACTIVITY 2 SCALES ON THE QUESTIONNAIRE (PAGE 14-16) (These are just suggested answers. Answers may vary, depending on the question constructed by the students)**

1. I appreciate the points at national bookstore.
2. I love getting points using national bookstore loyalty card.
3. It gives discount, gifts, or special customer treatment at National Bookstore.
4. The National Bookstore card is easy and quick to earn points.
5. I am absolutely satisfied that the National Bookstore card is in excellent service.

#### A. ORDINAL SCALE

Indicators			
1. I appreciate the pointing system of loyalty card of National Bookstore.		Strongly Agree	Strongly Disagree
2. I love getting points using National Bookstore loyalty card.		Agree	Disagree
3. It gives discount, gifts, or special customer treatment at National Bookstore.		Agree	Disagree
4. The National Bookstore card is easy and quick to earn points.		Agree	Disagree
5. I am absolutely satisfied that the National Bookstore card is in excellent service.		Agree	Disagree

Indicators	Strongly Agree	Agree	Disagree	Strongly Disagree	1. I appreciate the points at national bookstore.	2. I love getting points using national bookstore loyalty card.	3. It gives discount, gifts, or special customer treatment at National Bookstore.	4. The National Bookstore card is easy and quick to earn points.	5. I am absolutely satisfied that the National Bookstore card is in excellent service.					
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#### D. SCALE ITEM QUESTIONS

Bookstore?  
(for indicator #1) How do you find the pointing system given by National

#### C. OPEN-ENDED QUESTION

- Among the services provided to the member of Loyalty card program, which one do you like the most?  
A. Discounts  
B. Freebies  
C. Gifts  
D. Special Promos
- Among the products presented below, what products can provide you big points in the loyalty card program?  
A. Books  
B. Cards and Gift wrappers  
C. Office supplies  
D. School supplies

#### A. MULTIPLE-CHOICE TYPE OF QUESTIONS (the questions below are just sample answers, the answer on this part depends on the preferred item of the students)

1. Do you love the specific points given in each material?		
2. Are you satisfied in the discounts, gifts, or special customer treatment of the loyalty card holder?		
3. Is the loyalty card of National Bookstore easy and quick to earn points?		
4. Are you really satisfied that National Bookstore card provides an excellent service?		

**What I Know (pages 2-3)**

- |      |      |       |
|------|------|-------|
| 1. A | 5. C | 9. B  |
| 2. B | 6. D | 10. B |
| 3. B | 7. B |       |
| 4. C | 8. A |       |

**What is in (page 3) ANSWERS MAY VARY**

**What's new (pages 4)**

- A. Before Reading Activity (answers may vary depending on the process used by the students during enrollment period)
- B. Filling up the pre-enrollment form
- C. **LET'S ANALYZE**
1. What is the survey all about?
- Answer: The survey is a pre-enrollment form which the students are required to answer the information being asked.
2. What are the things that the survey required you to give? Cite at least 5 things or information that the survey is being asked?
- Answer: Name, Learner Reference Number, age, gender, and birthdate.
3. What do you think is the objective of the survey that you have answered?
- Answer: The objective of the study is to gather the necessary information to the students who would like to enroll in particular school.

**What is in**

1. In the enrollment form that you have answered in What's New, what are the portion or parts of enrollment form that uses multiple choice questions? (page 7)
- Answer: (D3, D4, D6, D7, and D8) of Household capacity and access to distance learning
2. In the pre-enrollment used a while ago, cite at least two portions that used routing questions (page 8)
- Answer: B14-B17 part for learners with special education needs
3. In the pre-enrollment used a while ago, cite at least two portions that used nominal scale (page9)
- Answer: Portion C parent/guardian information

**What's more**

**ACTIVITY 1 POPULATION VS. SAMPLE (PAGE 12-14) (These are just suggested answers. Answers may vary, depending on the question constructed by the students)**

**A. CLOSED QUESTIONS**

INDICATORS		1. Do you appreciate the points given by the National bookstore?
YES		
NO		

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