

SELF-LEARNING HOME TASK (SLHT)

Subject: Practical Research 2 Grade Level: 12 Quarter: 2 Week: 2

MELC: Constructs an instrument and establishes its validity and reliability; and describes intervention (if applicable)

Competency Code: CS_RS12-IIa-c-3 and CS_RS12-IIa-c-4

Name _____ Section _____ Date _____

School _____ District _____

Quantitative Research Instrument

Research Instruments are basic tools researchers used to gather data for specific research problems. Common instruments are **performance tests, questionnaires, interviews, and observation checklist**. The first two instruments are usually used in quantitative research, while the last two instruments are often in qualitative research. However, interviews and observation checklists can still be used in quantitative research once the information gathered is translated into numerical data.

Characteristics of a Good Research Instrument

Concise. Have you tried answering a very long test, and because of its length, you just pick the answer without even reading it? A good research instrument is concise in length yet can elicit the needed data.

Sequential. Questions or items must be arranged well. It is recommended to arrange it from simplest to the most complex. In this way, the instrument will be more favorable to the respondents to answer.

Valid and reliable. The instrument should pass the tests of validity and reliability to get more appropriate and accurate information.

Easily tabulated. Since you will be constructing an instrument for quantitative research, this factor should be considered. Hence, before crafting the instruments, the researcher makes sure that the variable and research questions are established. These will be an important basis for making items in the research instruments.

Ways in Developing Research Instrument

There are three ways you can consider in developing the research instrument for your study.

First is **adopting an instrument** from the already utilized instruments from previous related studies. The second way is **modifying an existing instrument** when the available instruments do not yield the exact data that will answer the research problem. And the third

way is when the **researcher made his own instrument** that corresponds to the variable and scope of his current study.

Common Scales Used in Quantitative Research

Likert Scale. This is the most common scale used in quantitative research. Respondents were asked to rate or rank statements according to the scale provided.

Example: A Likert scale that measures the attitude of students towards distance learning.

Items	Strongly Agree	Agree	Disagree	Strongly Disagree
There would be difficulty in communicating our concerns to our teacher.				
There would be many distractions when learning at home than in school.				

Semantic Differential. In this scale, a series of bipolar adjectives will be rated by the respondents. This scale seems to be more advantageous since it is more flexible and easier to construct.

Example: On a description of an active student in school activities.

Pleasant	5	4	3	2	1	Unpleasant
Enthusiastic	5	4	3	2	1	Not Enthusiastic
Competent	5	4	3	2	1	Incompetent

Another important consideration in constructing a research instrument is how to establish its validity and reliability.

Types of Validity of Instrument

Face Validity. It is also known as “logical validity.” It calls for an initiative judgment of the instruments as it “appear.” Just by looking at the instrument, the researcher decides if it is valid.

Validity

A research instrument is considered valid if it measures what it is supposed to measure.

When measuring oral communication proficiency level of students, speech performance using rubric or rating scale is more valid than students are given multiple choice tests.

Validity also has several types: face, content, construct, concurrent, and predictive validity.

Content Validity. An instrument that is judged with content validity meets the objectives of the study. It is done by checking the statements or questions if this elicits the needed information. Experts in the field of interest can also provide specific elements that should be measured by the instrument.

Construct Validity. It refers to the validity of instruments as it corresponds to the theoretical construct of the study. It is concerned if a specific measure relates to other measures.

Concurrent Validity. When the instrument can predict results like those similar tests already validated, it has concurrent validity.

Predictive Validity. When the instrument can produce results like those similar tests that will be employed in the future, it has predictive validity.

Reliability of Instrument

Reliability refers to the consistency of the measures or results of the instrument.

Test-retest Reliability. It is achieved by giving the same test to the same group of respondents twice. The consistency of the two scores will be checked.

Equivalent Forms Reliability. It is established by instrument, administering two identical tests except for wordings to the same group of respondents.

Internal Consistency Reliability. It determines how well the items measure the same construct. It is reasonable that when a respondent gets a high score in one item, he will also get one in similar items. There are three ways to measure the internal consistency; through the split-half coefficient, Cronbach's alpha, and Kuder-Richardson formula.

Research Intervention

In the previous discussion on quantitative research designs, you were taught about quasi-experimental and experimental designs. Its uniqueness from other research designs was also described. Remember that experimental research design controls or manipulates the independent variable. This is done by applying conditions or treatments or what is called **research intervention**. In this lesson, the focus is on how to describe your research intervention in your research paper.

Nature of Research Intervention

In experimental research, the researcher decides the nature of intervention or treatment. Intervention pertains to what is going to happen to the subjects of the study. This decision covers **who will receive the intervention** and **to what extent** it will be applied to them.

For example, in a study of determining the effects of special tutorial program to learners at risk of failing (LARF), researcher decides the group of LARF who will receive intervention. In this example, a special tutorial program is the research intervention. Furthermore, the extent to which the program will be administered to the learners is determined.

Steps in Describing the Research Intervention Process

A section that explains the details of research intervention is added in the research paper if it is an experimental design. In this section, the procedure of research intervention is explained clearly.

Write the Background Information. It is an introductory paragraph that explains the relevance of the intervention to the study conducted. It also includes the context and duration of the treatment.

Describe the Differences and Similarities between the Experimental and Control Group. State what will happen and what will not both in the experimental and control groups. This will clearly illustrate the parameters of the research groups.

Describe the Procedures of the Intervention. Describe how the experimental group will receive or experience the condition. It includes how the intervention will happen to achieve the desired result of the study. For example, how will the special tutorial program take place?

Explain the Basis of Procedures. The reason for choosing the intervention and process should be clear and concrete reasons. The researcher explains why the procedures are necessary. In addition, the theoretical and conceptual basis for choosing the procedures is presented to establish the validity of the procedures.

B. Exercises

Exercise 1

Test I. Direction: Look for sample research instruments from previously conducted research (PR 1 or PR 2 of previous years). Rate it on a scale of 1 to 5 (1 = lowest, 5 = highest) based on the criteria given. Then justify your rating. Accomplish the table below.

Sample Instrument <i>(provide a title of the instrument if possible):</i>		
Purpose of the Research Instrument:		
Number of Items: _____	Scale Used: _____	
Criteria for Evaluation of Instrument	Rating	Justification
Concise		
Sequential		
Valid and Reliable		
Easily Tabulated		

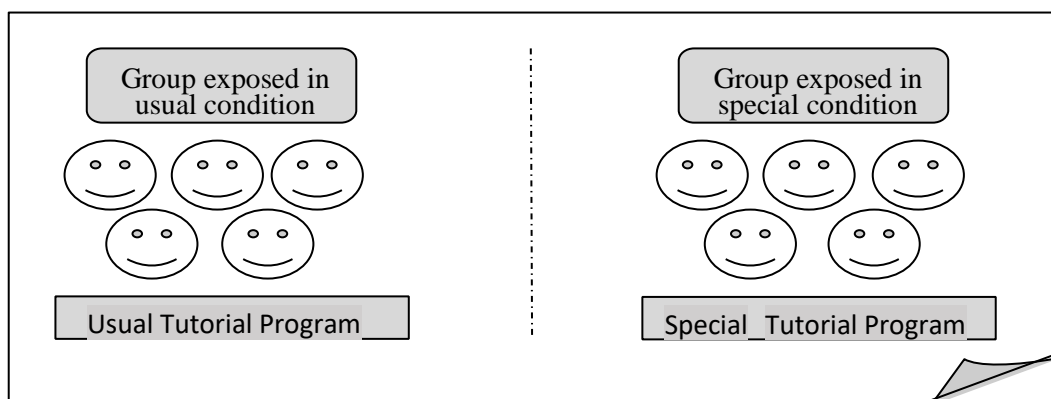
Note: Attached a photocopy of the research instrument upon submission.

Test II. Direction: Using the same research instrument, identify the ways of establishing the validity and reliability of the instrument. Complete the table below.

	Research Instrument
<input type="checkbox"/> Title of the Research Study	
<input type="checkbox"/> Type of Research Instrument	
<input type="checkbox"/> Way of Developing the Instrument	
<input type="checkbox"/> Scale Used	
<input type="checkbox"/> How the validity of the instrument was established?	
<input type="checkbox"/> How the reliability of the instrument was established?	
<input type="checkbox"/> Source	

Exercise 2

Directions: Study the illustration below. Answer the question that follows briefly.



How is the research intervention conducted in this study?

C. Assessment/Application/Outputs (Please refer to DepEd Order No. 31, s. 2020)

Test I. Directions: Essay. Answer the following briefly and concisely. A rubric for scoring is also presented below.

1. Why is it important to have a good research instrument?
2. Differentiate validity and reliability. Explain how they complement each other to make a good research instrument.

Category	10	7	4	1
Organization	Body paragraphs match essay map written in the introduction and include a topic sentence and supporting details.	Body paragraphs match essay map written in the introduction but lack either topic sentences or supporting details.	Body paragraphs are not in the order outlined in the essay map. Essay has few topic sentences or supporting details.	Essay map does not match body paragraphs. Essay lacks either topic sentences or supporting details.
Content	Topic sentence is strongly supported by in-depth details that add to the reader's understanding or enjoyment.	There are supporting details for each topic sentence, but they are superficial and do not add depth.	One or more detail sentences do not support the topic sentence or take the reader in another direction.	Sentences in the paragraph are completely unrelated to the topic or are rambling.
Conventions	There are no spelling, grammar, or punctuation errors.	There is only 1 spelling, grammar, or punctuation error per every 50 words written.	There are only 2 spelling, grammar, or punctuation errors per every 50 words written.	There are more than 3 spelling, grammar, or punctuation errors per every 50 words written.

Test II. Direction: Search for a sample research study. Distinguished the procedure used in the experimental and control group. Use the table below for your answers.

<input type="checkbox"/> Title of the Research Study	
<input type="checkbox"/> Research Intervention Conducted	
<input type="checkbox"/> Procedure Used in Control Group	
<input type="checkbox"/> Procedure Used in Experimental Group	

D. Suggested Enrichment/Reinforcement Activity/ies

Test I. Direction. Create a good, valid, and reliable research instrument for your study.

Test II. Direction: **Describe your Intervention (if applicable)** if the design of your research is experimental. Describe your research intervention by following the steps given in this lesson.

References:

Books

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Esther, Baraceros. *Practical Research 2 e-Book*. Quezon City: Rex Bookstore, Inc, 2016.

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