

SENIOR HIGH SCHOOL

Department of Education
National Capital Region

**SCHOOLS DIVISION OFFICE
MARIKINA CITY**

Practical Research 2

Quarter 2- Module 4

Intervention



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Describe intervention (if applicable)

1. define intervention;
2. identify the variables in the sample research that needs to undergo in intervention; and
3. present how each variable should be given an intervention.



1. What is the condition that you measure in an experiment?
 - A. Comply variable
 - B. Dependent variable
 - C. Extraneous variable
 - D. Independent variable
2. What is the condition that you change in the experiment?
 - A. Comply variable
 - B. Dependent variable
 - C. Extraneous variable
 - D. Independent variable
3. Which of the following statements is NOT a characteristic of experiment?
 - A. Manipulation of the treatment condition
 - B. Control over extraneous variables
 - C. Group comparison
 - D. Outcome manipulation
4. Which of the following provides a measure on some attributes or characteristics that you assess for participants in an experiment before they receive a treatment?
 - A. Intervention
 - B. Manipulation
 - C. Posttest
 - D. Pretest
5. What treatment does the researcher physically intervene to alter the conditions?
 - A. Experimental
 - B. Non-Experimental
 - C. Observation
 - D. Survey
6. Which of the following procedures is NOT used in manipulating treatment conditions?
 - A. Manipulate the outcome of the experiment
 - B. Identify the conditions of the variables
 - C. Manipulate the treatment condition
 - D. Identify the treatment condition
7. What type of independent variables refers to the variable in which the researcher determines their effect on outcome?
 - A. Measured variable
 - B. Operational variable
 - C. Outcome variable
 - D. Treatment variable



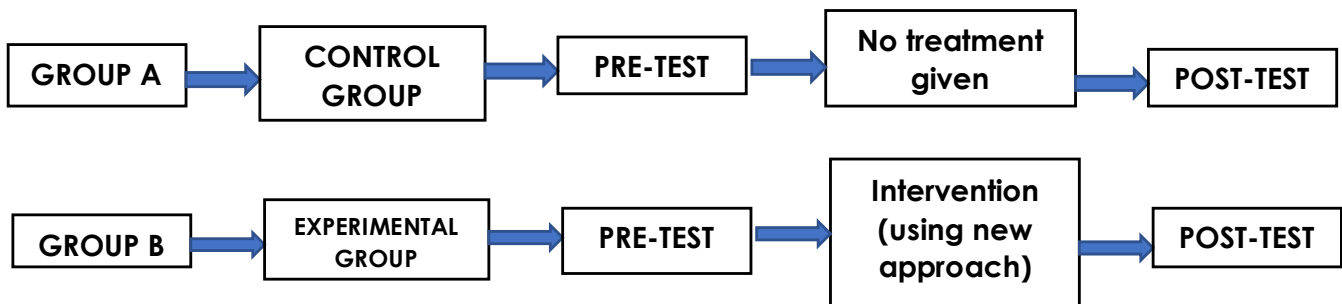
8. What implies on the name itself where variables used in research can be measured?
 - A. Measured variable
 - B. Operational variable
 - C. Outcome variable
 - D. Treatment variable
9. Which of the following clearly and completely describes what will happen in comparison group?
 - A. Measured variable
 - B. Operational variable
 - C. Outcome variable
 - D. Treatment variable
10. Which among the independent variables can undergo intervention?
 - A. Age
 - B. Gender
 - C. Birthdate
 - D. Lecture plus health-hazard comparison

Lesson 1

Intervention

What's In

In the previous modules in Practical Research 2, you have discussed the different types of research design, specifically the experimental research design. Your task is to discuss the following diagram that shows process of experimental research. Write your answer on the space box provided after the diagram





What's New

Before Reading Activity

By recalling the previous module regarding the type of variables. Two main type of variables are used in doing experimental research. The independent variable and dependent variable. Independent variable is a variable that represents a quantity that is being MANIPULATED in an experiment. While dependent variable represents the variable that you MEASURE in an experiment.

A. Reading activity

The text below is an example of experiment conducted in a research. Your task is to read the text carefully in order for you to answer the questions given in the post-reading activity.

“Spongebob notices that his pal Gary is suffering from slimotosis, which occurs when the shell develops nasty slimes and gives off a horrible door. His friend Patrick tells him that rubbing seaweed on the shell is the perfect cure, while Sandy says that drinking Dr. Kelp will be a better cure. Sponge Bob decides to test this cure by rubbing Gary with seaweed for 1 week and having him drink Dr. Kelp. After a week of instrument, the slime is gone and Gary’s shell smells better.”

B. Post-Reading Activity

1. What was the initial observation?

2. What is the independent variable?

3. What is the dependent variable?

4. What should Sponge Bob’s conclusion be?

(Source: . <https://pch.district70.org/pdfs/Honors-Biology-Summer-Work-part-2.pdf>)



What is It

In the conducting experimental research, the common procedure known is to test or determine whether an idea affect or influence the outcome or dependent variable. In the previous module regarding research design, experimental research usually conducted using the two groups; the control and experimental group. Both groups receive Pretest and Posttest, however, no treatment is being done in control group while treatment or intervention is being done to experimental group using the new approach or innovation to test its effectiveness. Since it was mentioned that experimental group receives treatment



or intervention, Creswell (2014) stated that INTERVENTION describes what happens in comparison group or how the intervention will be implemented. There are two types of independent variables; treatment variable and the measured variable. But only the treatment variables are the only variables that can be subjected for an intervention. Creswell (2014) defined as the variable the researcher manipulates to determine their effect on the outcome, or dependent variable.

In the sample entitled “Task-Based Instruction in Teaching Oral English: A Basis for Instructional Module Enhancement” aim to determine the effectiveness of the Task-Based Instruction in Teaching Oral English. The researcher utilized 2 sections under grade 8 level as the respondents in which one group is considered as the control group in which traditional method of teaching is used in teaching Oral English subject and the other group served as the experimental group where TBI is used as the treatment or intervention. In this sample study, the independent variables are: GRADE 8 STUDENTS, TRADITIONAL APPROACH, and TASK-BASED INSTRUCTIONS. But the TRADITIONAL APPROACH and TASK-BASED INSTRUCTIONS are considered as treatment variables.

Using this, sample study, let’s us determine how the manipulation of variables is being done in order to do the intervention.

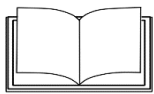
1. **Identify the treatment variables-** classroom instruction
2. **Identify treatment condition or the level of the variable** (you have to categorize what type of instruction should be done in classroom instruction)- so based on the sample study, there are two types of CLASSROOM INSTRUCTION involved or mentioned in the sample study; TRADITIONAL APPROACH AND TASK-BASED INSTRUCTION.
3. **Manipulate the treatment conditions-** in this process, intervention is being conducted through engaging the 2 sections in the two types of classroom instruction being mentioned by conducting classroom lecture, specific activities designed or intended for each instruction.

Let us the see this excerpt procedure being done in the sample study mentioned above.

Both control and experimental group utilized Three lessons. However, in control group traditional approach is used, while in experimental task-based instruction was utilized. Before each instruction began, pre-test was administered and after each instruction, post-test was administered. Third, the researcher administered the pre-test and post-test in the digital speech laboratory wherein the respondents answered the given questions through voice recording. After the pre-test and post-test in each instruction, the researcher checked and compared the result of the pre-test and post-test of the respondents then, the data were gathered, were analyzed, and were interpreted.

Based on this example, how does the intervention being done in the treatment variables?





What's More

Answer the activities that will follow to practice your knowledge and skill about describing intervention. READ FIRST THE SAMPLE EXCERPT ON THE PROCEDURE CONDUCTED IN THE FOLLOWING EXPERIMENTAL RESEARCH, then follow each instruction to answer the three activities.

- 1. In this study, the instrument used to elicit and collect information was in the form of test. The use of language tests as tools to measure the EFL learners' literacy has been well justified in the literature. In the current study, the subjects under different teaching approaches (experimental group, multimedia methods; while control group, traditional mode) took part in the same test. Their test results were collected and analyzed to see whether the multimedia methods have positive effect on their English learning. During the four-month experimental process, 112 subjects from two classes were taught English by the same teacher with the same textbook New Horizon College English. In the experimental group, the researcher made full use of well-made multimedia courseware which involves a combination of a large range of communication elements – text, sound, graphics, pictures, photographs, animation and video clips. Each media element has its own particular advantage in conveying particular kinds of messages and evoking particular kinds of learner responses. While in the control group, the lessons were given in the traditional classroom, mainly includes teaching materials (textbooks, text-related cards, pictures etc.), chalk plus talk, and sometimes taping-recorder. Both groups were required to take turns to give a three-minute oral presentation before class and the subjects in the experimental group had to use the PowerPoint format. To prepare for the presentation, the subjects of both groups tried every means possible to accumulate, select and analyze the best information on their own. The PowerPoint files made by subjects in the experimental group were not only filled with many beautiful photos, paintings, but also with music and sometimes even videos, which made the presentation impressive, expressive and more enjoyable. At the end of the experimental term, with a purpose of comprehensive test of the language proficiency of the subjects, both groups were asked to take part in the same test – the final examination which included writing, speed reading, listening comprehension, reading comprehension, cloze and translation. After the test, the test papers were carefully collected by the researcher (Liu, 2010).*
- 2. The students in the study were split into three groups: experiment group A, experiment group B and a control group. Experiment group A consisted of those students in the two classes that had history during the periods 4 and 5. Experiment group B was a group of students in an "In Class Support" (ICS) class that had an additional special education teacher. The control group of students were the students in the two remaining classes that met during the periods 1 and 3. During the course of this research, the three groups of students were involved with two projects. Experiment group A completed these two projects in a computer lab. Experiment group B students had a choice of whether to use technology while working on the project or not. Finally, the control group did all their work in the classroom without the use of technology, never visiting the computer lab during this research. On the first day of the study, all students in the study took the pre-test to assess their previous knowledge of Ancient China. After fourteen days of instruction, students entered into a project week. Over the course of five school days, students created a storybook. The experiment group A created a digital story utilizing VoiceThread in the computer lab, the participants in the experiment group B had the option whether to use the technology or not, and the control*



group created a paper-based storybook. During the first two weeks of February, students re-entered the classroom for ten more days of instruction. After ten more days of instruction, students entered into a second project week. Again, the experiment group A created a digital story utilizing VoiceThread in the computer lab, the participants in the experiment group B had the option whether to use the technology or not, and the control group created a paper-based storybook. During the third week of February, students took the surveys that mirrored the condition in each group, i.e. students in the experiment groups A and B were directed to an online survey in which their answers were emailed directly to the researcher, and the control group participants were given the Likert survey on paper. The final week of February was dedicated to any make-up surveys and/or interviews that needed to be conducted because of absenteeism. After all surveys and interviews were completed, two weeks after the completion of the unit, the participants took a retention test (Granito and Chernoblisky, 2012).

Activity 1. FINDING THE TREATMENT VARIABLES!

Using the two sample procedures done in experimental study, identify the independent variables mentioned and from those independent variables, determine the treatment variables.

Sample procedure #1

Independent variables	Treatment variables

Sample procedure #2

Independent variables	Treatment variables

Activity 2 MANIPULATING THE TREATMENT VARIABLES

Determine how the treatment variables should be manipulated using the following procedure:

Sample procedure #1

1. Identify the treatment variables	
2. Identify the treatment condition or the level of variables	
3. Manipulate the treatment variables	



Sample procedure #2

1. Identify the treatment variables	
2. Identify the treatment condition or the level of variables	
3. Manipulate the treatment variables (brief description of intervention)	

Activity 3. DESCRIBING THE INTERVENTION

Using your responses in “manipulating the treatment variables” for both sample procedure, your task in this activity is to discuss and describe how manipulation or intervention of treatment variables is being conducted.

Sample procedure #1

Sample procedure #2



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.

3 things that you have learned in this lesson specifically on the following topics:	the Difficulties I encountered the lesson is/are?	I will use my today's learning in/to...?



What I Can Do

Apply what you have learned about describing intervention.

The sample details below are lifted from the study, Effect of Computer-Based Video Games on Children: An Experimental Study. Your task is to arrange the intervention being done in this study. Use numbers 1-4 as your answer. Then identify the independent variables, treatment condition or level of condition, and manipulation of variables.

Part I

_____ After receiving various instructional treatments, each participant was required to take a quiz during the second session. The quiz was designed and developed to assess participants' learning achievements after finishing their instruction. From three categories of questions — fact differentiation/recall, analysis/comparison, and understanding/problem-solving — different types of learning outcomes were determined. The researcher graded and recorded all the post-tests.



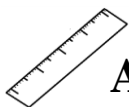
_____As the experiment began, the researcher asked the participants to turn on their monitors. For the participants in the control group, their monitors immediately showed a text-only web page. The researcher informed the participants that they would have 35 minutes to read through the instructions. The participants could browse the contents at their own pace. As soon as they finished the text-based instruction, they raised their hands to indicate to the researcher completion of the task. However, anyone who finished early had to remain seated and wait for the other children to finish until the time was up.

_____Participants were asked to take part in two instructional sessions. Estimates were that each session would take 40 minutes (the length of a regular class period in elementary schools in Taiwan), for a total of 80 minutes. In the first session, the control group received a unit of computer-assisted instruction about fire-fighting. The experimental group was asked to play the computer game Fire Captain. In the next session, all participants were required to take a quiz to allow assessment of their learning achievements.

_____For the experimental group at the beginning of the class, the researcher used five minutes to demonstrate the skills of mouse control for the computer game. After the demonstration, the experimental group turned on their monitors, put on headphones, and began playing the computer game. The main menu of Fire Captain appeared on their monitors. Participants also had 35 minutes to explore this game freely. However, they had to finish the tutorial mission as soon as possible. How fast they completed the tutorial mission was a significant factor for evaluating their ranking at the end of the mission. Participants had permission to raise their hands at any time to ask for any technical support during this session.

Part II

1. Identify the treatment variables	
2. Identify the treatment condition or the level of variables	
3. Manipulate the treatment variables (brief description of intervention)	



Assessment

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

Discuss the following terms used in describing intervention:

1. Independent variables

2. Treatment variables

3. Manipulation or intervention of variables



Additional Activities

Describe your possible intervention (if applicable) for your proposed research. Write your answer on the box below:



Posttest

1. The following variables can undergo in an intervention except:
A. Birthdate
B. Conventional and New Strategies
C. Lecture plus health-hazard comparison
D. Round table discussion and traditional lecture
2. It clearly describes what will happen in the comparison group after the experiment
A. Treatment variable
B. Outcome variable
C. Operational variable
D. Measured variable
3. It provides a measure on some characteristics that the researcher assessed in the respondents of an experiment before they receive a treatment?
A. Pretest
B. Posttest
C. Manipulation
D. Intervention
4. It is a type of independent variable in which the researcher determines their effect on outcome?
A. Treatment variable
B. Outcome variable
C. Operational variable
D. Measured variable
5. Which of the following statements is NOT the characteristic of experiment?
A. Group comparison
B. Outcome manipulation
C. Control over extraneous variables
D. Manipulation of the treatment condition
6. It is the condition that the researcher is changing in an experiment
A. Independent variable
B. Extraneous variable
C. Dependent variable
D. Comfy variable
7. It is the procedure that the researcher physically intervene to alter the conditions
A. Survey
B. Observation
C. Non-Experimental
D. Experimental
8. What implies on the name itself where variables used in research can be measured?
A. Treatment variable
B. Outcome variable
C. Operational variable
D. Measured variable
9. The following procedures below used by the researcher in manipulating treatment condition except:
A. Identify the treatment condition
B. Manipulate the treatment condition
C. Indentify the conditions of the variables
D. Manipulate the outcome of the experiment
10. It is the condition that the researcher measures in an experiment
A. Independent variable
B. Extraneous variable
C. Dependent variable
D. Comply variable



11. It process being done when 2 groups are engaged in two process in which specific activities are designed or intended for each instruction.
 - A. Identify the treatment condition
 - B. Manipulate the treatment condition
 - C. Indentify the conditions of the variables
 - D. Manipulate the outcome of the experiment

12. It describes the procedure in which the researcher used classroom instruction as the treatment variable.
 - A. Identify the treatment condition
 - B. Manipulate the treatment condition
 - C. Indentify the conditions of the variables
 - D. Manipulate the outcome of the experiment

13. It is the procedure that shows the categorization on what type activity will be done experimental research
 - A. Identify the treatment condition
 - B. Manipulate the treatment condition
 - C. Indentify the conditions of the variables
 - D. Manipulate the outcome of the experiment

14. It is the common procedure being done in an experimental research.
 - A. to test or determine whether an idea affect or influence the outcome or dependent variable.
 - B. to identify the respondents to be used in the experimentation.
 - C. to validate the instruction in the experimentation
 - D. to construct a final report of the result.

15. The following variables below are considered as independent variables which cannot undergo in an intervention **except**:

A. Academic performance	C. Gender
B. Age	D. Educational Attainment



- A
- B
- C

Answer Key

Module _ Describe Intervention
Answer key

Additional Activities (page 13) answers may vary depending on the proposed research title of the students

Answer: Independent variable is a variable that represents a quantity that is being manipulated in an experiment

Treatment variables

Answer: treatment variables are the variables that researcher manipulates to determine their effect on the outcome, or dependent variable

Answer: Manipulation or intervention of variables

Answer: it describes how the intervention is being done in experimental research

Assessment (page 12)

1. Identify the treatment variables	Two instructional sessions
2. Identify the treatment condition or the level of variables	Computer assisted instruction for fire-fighting and computer fire captain game
3. Manipulate the treatment variables	2 groups were created, the control group used computer assisted instruction and experimental group used computer fire captain game instruction. Both groups were required to take a quiz to allow assessment of their learning achievements.

Part 2 (page 12)

Part I (Page 11)
Paragraph # 1 (4) / Paragraph # 2 (2) / Paragraph # 3 (1) / Paragraph # 4 (3) /

What I can do

What I have learned (page 10) Answers may vary

Sample procedure #2

Experiment group A completed these two projects in a computer lab. Experiment group B students had a choice of whether to use technology while working on the project or not. Finally, the control group did all their work in the classroom without the use of technology. never visiting the computer lab during this research. On the first day of the study, all students in the study took the pre-test to assess their previous knowledge of Ancient China. After fourteen days of instruction, students entered into a project week. Over the course of five school days, students created a storyboard. The experiment group A created a digital story utilizing VoiceThread in the computer lab, the participants in the experiment group B had the option whether to use the technology or not, and the control group created a paper-based storyboard. During the first two weeks of February, students re-entered the classroom for ten more days of instruction. After ten more days of instruction, students entered into a second project week. Again, the experiment group A created a digital story utilizing VoiceThread in the computer lab, the participants in the experiment group B had the option whether to use the technology or not, and the control group created a paper-based storyboard. During the third week of February, students took the surveys that mirrored the condition in each group, i.e., students in the experiment groups A and B were directed to an online survey in which their answers were emailed directly to the researcher, and the control group participants were given the Likert survey on paper.

tally includes teaching materials (textbooks, text-related cards, pictures etc.), chalk plus talk, and sometimes taping-recorder. Both groups were required to take turns to give a three-minute oral presentation before class and the subjects in the experimental group had to use the PowerPoint format



During the four-month experimental process, 112 subjects from two classes were taught English by the same teacher with the same textbook New Horizon College English. In the experimental group, the researcher made full use of well-made multimedia courseware which involves a combination of a large range of communication elements – text, sound, graphics, pictures, photographs, animation and video clips. Each media element has its own particular advantage in conveying particular kinds of messages and evoking particular

Sample procedure #1

Activity 3 Describing the Intervention

1. Identify the treatment variables	Projects to be done during experimental period
2. Identify the treatment condition or the level of variables	Creation of tradition story book project and computer-based project
3. Manipulate the treatment variables	Three groups were created during the experiment. Experimental group was divided into two groups Experimental A where traditional story book project was created and Experimental B where computer-based project was done.

Sample procedure #2 (page 9)

1. Identify the treatment variables	Teaching approaches
2. Identify the treatment condition or the level of variables	Multimedia approach and traditional approach
3. Manipulate the treatment variables	2 groups were created, the teacher used the traditional approach for the control group while Multimedia approach was used in the experimental group

Sample procedure #1 (page 8)

Activity 2 MANIPULATING THE TREATMENT VARIABLES

Sample procedure #2 (page 8)

Independent variable/s	Students History subject Projects to be done in during the period of the study
Treatment variable/s	Projects to be done during the period of the study (creating tradition story book project, computer-based project)
Independent variable/s	Students English subjects Teaching approaches
Treatment variable/s	Teaching approaches (multimedia approach and traditional approach)



What I Know (pages 1-2)

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

What's in (page 3)

In these figures, there are two groups presented, the control and experimental group. Both group receives Pretest and Posttest however, the control group does not receive any treatment while the experimental group receives intervention in order to determine the effectiveness of the new approach or innovation being tested in the experimental research.

What's new (page 4; post-reading activity)

"Spongebob notices that his pal Gary is suffering from slimotosis, which occurs when the shell develops nasty slimes and gives off a horrible odor. His friend Patrick tells him that rubbing seaweed on the shell is the perfect cure, while Sandy says that drinking seaweed for 1 week and having him drink Dr. Kelp. After a week of instrument, the slime is gone and Gary's shell smells better."

1. What was the initial observation?
Answer: the spongebob found out that Gary is suffering from slimotosis
2. What is the independent variable?
Answer: duration or length of time in rubbing and drinking seaweed and Dr. Kelp
3. What is the dependent variable?
Answer: seaweed and Dr. Kelp
4. What should Sponge Bob's conclusion be?
Answer: after 1 week of rubbing the seaweed and drinking Dr. Kelp the slime is gone and Gary's shell smells better.

What is it (page 6)

Based on this example, how does the intervention being done in the treatment variables? Answer: it was explained that both control and experimental group received pretest and posttest. However, in the control group, the instruction used in teaching Oral English is the traditional or conventional way while the experimental group used Task-Based Instruction as the new approach or innovation in teaching Oral English and at the same time, to test its effectiveness.

What is more (pages 6-9)

Activity 1 Finding the Treatment variables

Sample procedure #1 (page 7)

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