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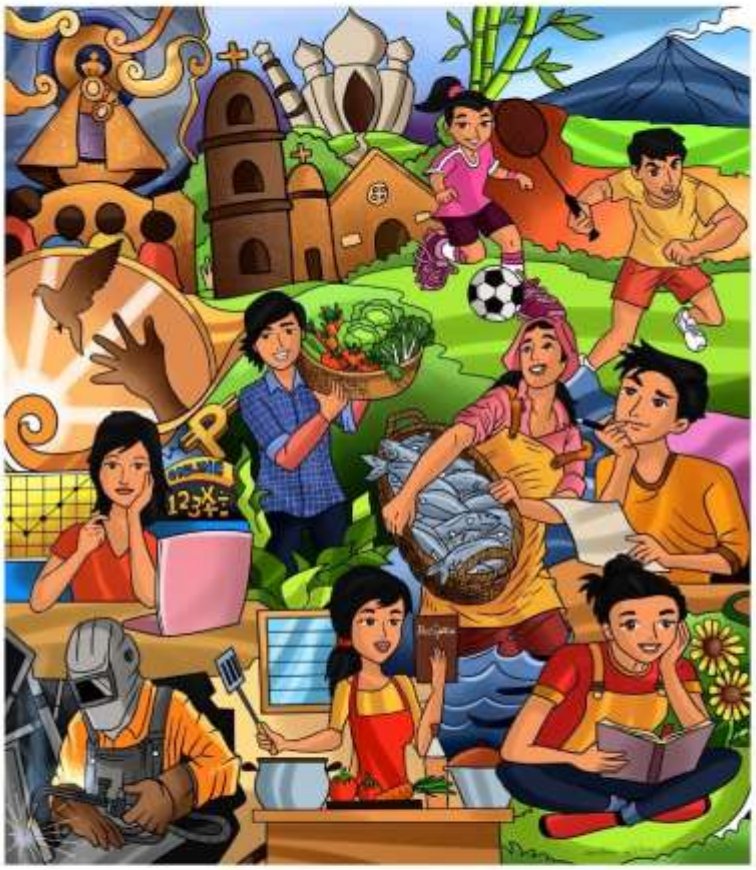
DEPARTMENT OF EDUCATION

ENGLISH FOR ACADEMIC AND PROFESSIONAL PURPOSES

Quarter 2 – Module 7:

GATHERS INFORMATION FROM SURVEYS, EXPERIMENTS OR OBSERVATIONS



DEPARTMENT OF EDUCATION
REGION V BICOL

English for Academic and Professional Purposes. - Grade 11- 12

Quarter 2 – Module 7: Gathers Information from Surveys, Experiments or Observations

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English for Academic and Professional Purposes

Quarter 2 – Module 7

GATHERS INFORMATION FROM SURVEYS, EXPERIMENTS OR OBSERVATIONS

This instructional material was developed based from the Most Essential Learning Competencies (MELC) in English for Academic and Professional Purposes in response to the new normal scheme in learning delivery of the Department of Education. This module was collaboratively reviewed by educators and program specialists in the Regional Office V. We encourage teachers and other educational stakeholders to email their feedback, comments, and recommendations to the Department of Education at _____.

We value your feedback and recommendations.

I. INTRODUCTION

Good job learners! Now that you've accomplished your task in collecting data from surveys and interviews, you're probably wondering about what to do with those! Don't worry because in this module, you will learn about the necessary ways, procedures or steps on how to interpret and understand the data or information from the survey/s, experiment/s or observation/s you have conducted and collected.

II. OBJECTIVES

At the end of this lesson, you are expected to:

- Gathers information from surveys, experiments or observations

III. VOCABULARY LIST

As you go through this lesson, you might encounter unfamiliar words, the following table shows these words:

Data	Facts or information used usually to calculate, analyze or plan something (Merriam Webster Dictionary).
Survey	It is a research method used for collecting data from a predefined group of respondents to gain information and insights into various topics of interest. They can have multiple purposes, and researchers can conduct it in many ways depending on the methodology chosen and the study's goal.
Coding	Involves translating entries on questionnaires to letters or numbers.
Loopholes	An error in the way a law, rule, or contract is written that it makes people to legally avoid obeying it. Source: Merriam Dictionary

PART IV. PRE-TEST

Now that you've got ideas on what you are about to venture out, please answer the activity below. Make sure to read and follow the instructions properly. Write your answers in a separate sheet of paper or in your notebook.

KWL CHART

INSTRUCTIONS: On the first column, list the things that you know about data gathering, processing and organization. On the second column, list the things that you want to know about data processing and gathering. On the third column, list the things that you have learned (based on your readings) about data processing, gathering and organization.

What I know about data processing, gathering and organization	*What I want to know about data processing, gathering and organization*	*What I have learned about data processing, gathering and organization*

V. LEARNING CONCEPTS

Very good! I'm sure you are ready to learn! There are three concepts that you need to remember in this lesson.

GATHERING INFORMATION FROM SURVEY/S AND INTERVIEWS

(QUANTITATIVE AND QUALITATIVE DATA)

A data analysis also lends credibility to the researched data. It backs the data up with trustworthy references and gives it a theoretical base to stand on. Data Analysis is also an easy way to evaluate the students regarding their understanding of the research material in general. Your data is the backbone of your research. It is the base on which the entire study will rely upon. After months of grueling researches, scholars amass large amount of data. This data has to be properly integrated and kept in an organized fashion. This article will discuss about the importance of data analysis in a research paper. Providing an insight and interpretation in the form of analysis of the entire data also rules out any chance of human bias. The reader would get a clear and straightforward picture. Similarly, the researcher being devoid of loopholes and hanging ends would deliver the precise intended message across without any incidence of the reader getting biased (Strauss, et al, 1990).

A. PROCESS OF QUANTITATIVE DATA PREPARATION/ANALYSIS

In order for you to follow step by step as to how should you gather information from survey/s, experiment/s, and quantitative data, follow these simple steps below:

STEPS IN GATHERING INFORMATION FROM SURVEYS, EXPERIMENTS OR QUANTITATIVE DATA		
Step 1	**DATA PREPARATION**	Your main task in this step is to collect and prepare data you've gathered from a survey. Your aim is to convert raw data into something meaningful and readable.
Step 2	**DATA VALIDATION**	The purpose of data validation is for you to find out, as far as possible, whether the data collection was done as per the pre-set standards and without any bias. It is a four-step process, which includes… 1. **Fraud**, to infer whether each respondent was actually interviewed or not. 2. **Screening,** to make sure that respondents were chosen as per the research criteria. 3. **Procedure,** to check whether the data collection procedure was duly followed. 4. **Completeness,** to ensure that the interviewer asked the respondent all the questions, rather than just a few required ones (Black, 1999)
Step 3	**DATA EDITING**	Typically, large data sets include errors. For example, respondents may fill fields incorrectly or skip them accidentally. To make sure that there are no such errors, the researcher should conduct basic data checks, check for outliers, and edit the raw research data to identify and clear out any data points that may hamper the accuracy of the results. (Black, 1999) *For example, an error could be fields that were left empty by respondents. While editing the data, it is important to make sure to remove or fill all the empty fields.*
Ste	**DATA CODING**	Data coding is the process of converting data collected into numeric format. To facilitate the coding process, a codebook should be created to guide the coding process. A codebook is a

p 4		comprehensive document which contains detailed description or explanation of the following: 1. each variable in a research study, 2. items of measures for that variable, 3. the format of each item (numeric, text, etc.); 4. the response scale for each item (whether it is measured using The four levels of measurements include (Yamashita & Espinosa, 2015): ● *nominal data: basic classification data; lack logical order - e.g. male or female* ● *ordinal data: has logical order but lack constant differences between values – e.g. Pizza size (large, medium, small)* ● *interval data: has logical order, is continuous, has standardized differences between values but lacks natural zero – e.g. Celsius degrees* ● *ratio data: has logical order, is continuous, has standardized differences between values, and has a natural zero – e.g. height, weight, age, length* 5. After identifying a level of measurement, the next step is to use a specific analysis technique in analyzing data. There are several procedures that can be used to analyze data. Main ones include (Yamashita & Espinosa, 2015): ● *Data tabulation (e.g. frequency distributions & percent distributions)* ● *Data descriptives (e.g. Mean, medium, mode, minimum and maximum values, etc.)* ● *Data disaggregation (tabulation of data across multiple categories)* ● *Moderate and advanced analytical methods (regression, correlation, variance analysis*) *Source: Bhattacherjee 2012, 120*

STEP 5	**DATA ENTRY OR DATA RECORDING**	After you've finished coding the data, your next task is to transfer the information from survey questionnaires or code sheets to computer files for processing. It is done more quickly and more accurately if two persons work together- one reading and typing/entering information (Black, 1999). Smaller data sets with less than 65,000 observations and 256 items can be stored in a spreadsheet such as Microsoft Excel, while larger dataset with millions of observations will require a database. *Source: Bhattacherjee 2012, 120*
Step 6	**DATA TRANSFORMATION**	Data transformation is the process of converting data from one format or structure into another format or structure (Black, 1999).
Step 7	**DATA CLEANSING**	This involves double checking of the data that you've entered in the computer. This is important specifically if there are large numbers of respondents (Black, 1999).

B. PROCESS OF QUALITATIVE DATA ANALYSIS

According to the National Science Foundation (1997): Qualitative analysis is "unguided by universal rules; has a fluid process that is greatly dependent on the evaluator and to the context of the study." This involves the ***identification, examination*** and ***interpretation*** of patterns and themes in textual data. This also determines how these patterns and themes help answer the research questions. Start the analysis process by "getting to know" your data. You do this by listening to your tapes, transcribing interviews from tape to paper, and reading over the written transcripts. After doing this, you might have a general feeling or idea of what people are saying and what your results are looking like; but, you'll be surprised at how much more information is contained in your data once you start going deeper and begin a systematic and rigorous analysis!

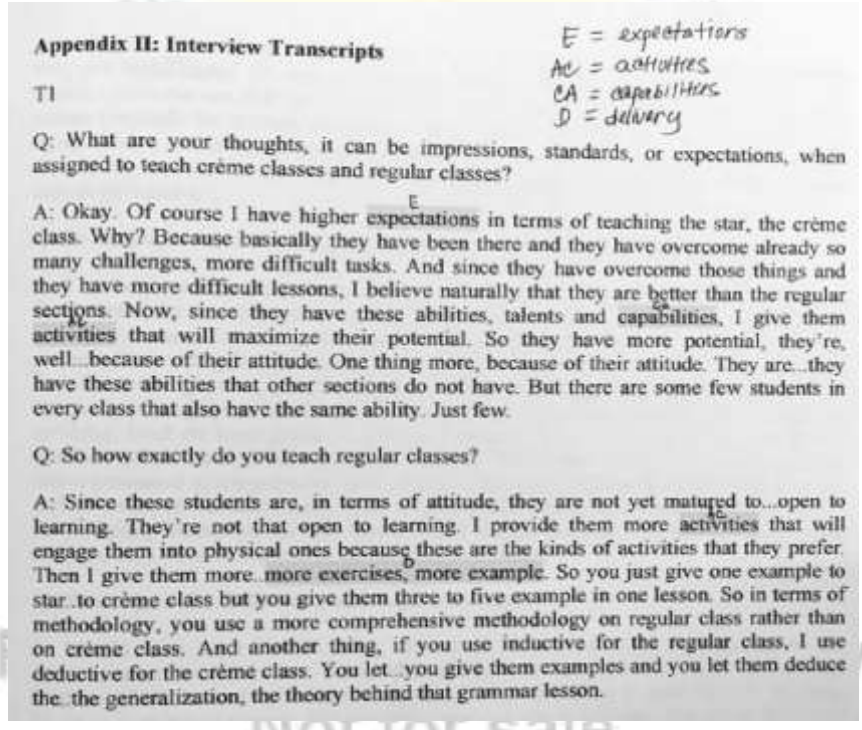
Formal systems for the analysis of qualitative data have been developed in order to help researchers get at the meaning of their data more easily. These systems involve:

1. GETTING TO KNOW THE DATA
   - Reading, listening and playing the recorded responses and taking down notes.

2. FOCUSING THE ANALYSIS
   - focus by question or topic
   - focus by case, individual or group

3. CODING - Categorizing the data

- is the process of analyzing the data and searching for essential information that answers the research questions. They are considered essential if they occur of have been mentioned several times by the informants. In other words, it is a process of filtering the data (Farber 2006). These essential words are marked or labeled (coded). **Codes** are words that represent themes or patterns. There are two types of codes in qualitative research: **emergent and preset** (Taylor-Powell and Renner 2003). Emergent codes are those that show up during analysis while preset are codes that have been identified prior to analysis. Qualitative researchers use codes to easily identify meanings and group similar patterns or themes that occur or transpire in the interview transcript of each participant. By using codes, the researcher can easily make an inference or analysis.



Appendix II: Interview Transcripts

E = expectations
Ac = activities
CA = capabilities
D = delivery

T1

Q: What are your thoughts, it can be impressions, standards, or expectations, when assigned to teach crème classes and regular classes?

A: Okay. Of course I have higher expectations in terms of teaching the star, the crème class. Why? Because basically they have been there and they have overcome already so many challenges, more difficult tasks. And since they have overcome those things and they have more difficult lessons, I believe naturally that they are better than the regular sections. Now, since they have these abilities, talents and capabilities, I give them activities that will maximize their potential. So they have more potential, they're, well...because of their attitude. One thing more, because of their attitude. They are...they have these abilities that other sections do not have. But there are some few students in every class that also have the same ability. Just few.

Q: So how exactly do you teach regular classes?

A: Since these students are, in terms of attitude, they are not yet matured to...open to learning. They're not that open to learning. I provide them more activities that will engage them into physical ones because these are the kinds of activities that they prefer. Then I give them more...more exercises, more example. So you just give one example to star...to crème class but you give them three to five example in one lesson. So in terms of methodology, you use a more comprehensive methodology on regular class rather than on crème class. And another thing, if you use inductive for the regular class, I use deductive for the crème class. You let...you give them examples and you let them deduce the...the generalization, the theory behind that grammar lesson.

IMAGE SOURCE: Practical Research I, Teacher's Guide, DepEd

4. ENTERING DATA

- Encoding and saving the file.

5. EDITING/REVISING
   - Editing is checking the format, grammar, etc.
   -Revising is checking the content and logical organization.

6. IDENTIFYING MEANINGFUL PATTERNS AND THEMES -

- Content Analysis – identifying patterns ideas, concepts, behaviors, incidents, terms or phrases used and interpreting their meanings.
- Thematic Analysis – analyzing the data by grouping them according to themes.

7. INTERPRETING THE DATA

- After identifying the themes and patterns and after analyzing the identified themes and patterns, these must be synthesized as a whole. Meaning and significance are attached to the analysis of data. This plus the patterns and themes identified will all help formulate the Findings, Conclusions and Recommendations of the study.

Example:

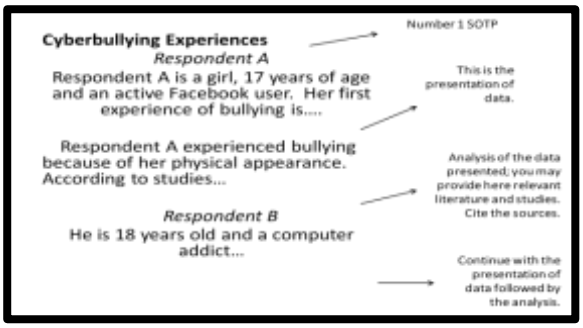
Research Title: The Effects of Cyberbullying among Teenagers

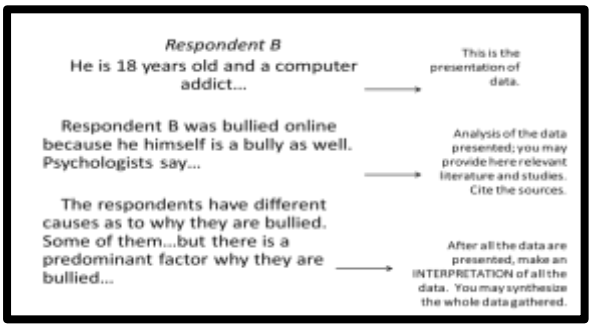
Statement of the Problem

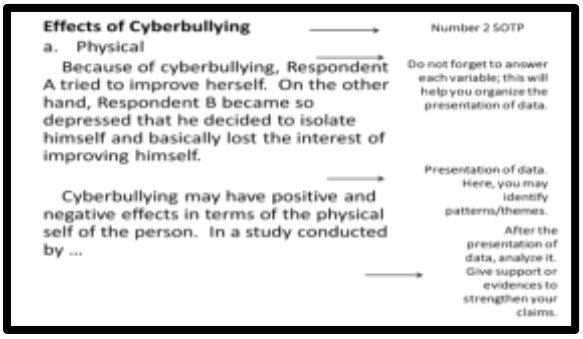
1. What are the experiences of selected teenagers in relation to cyberbullying?
2. What are the effects of cyberbullying among these teenagers particularly in the following variables:
   a. Physical b. Psychological
   c. Emotional d. Social

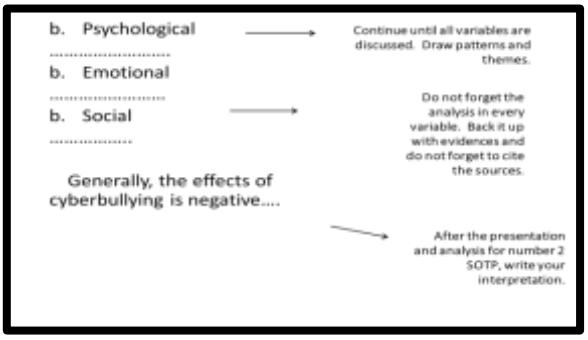
This chapter presents the data gathered by the researchers regarding the cyberbullying experiences of teenagers as well as the effects in their (a) physical, (b) psychological, (c) emotional and (d) social aspects of their life. Similarly, this section provides the analysis of these data and finally the interpretation of these analysed data.

Cyberbullying Experiences









Respondent ARespondent A is a girl, 17 years of age and an active Facebook user. Her first experience of bullying is….

SOURCE: Practical Research I PowerPoint Presentation by Julius Caesar P. Averilla, Ed.D, facilitator during the Mass Training of Teachers on Academic Track.

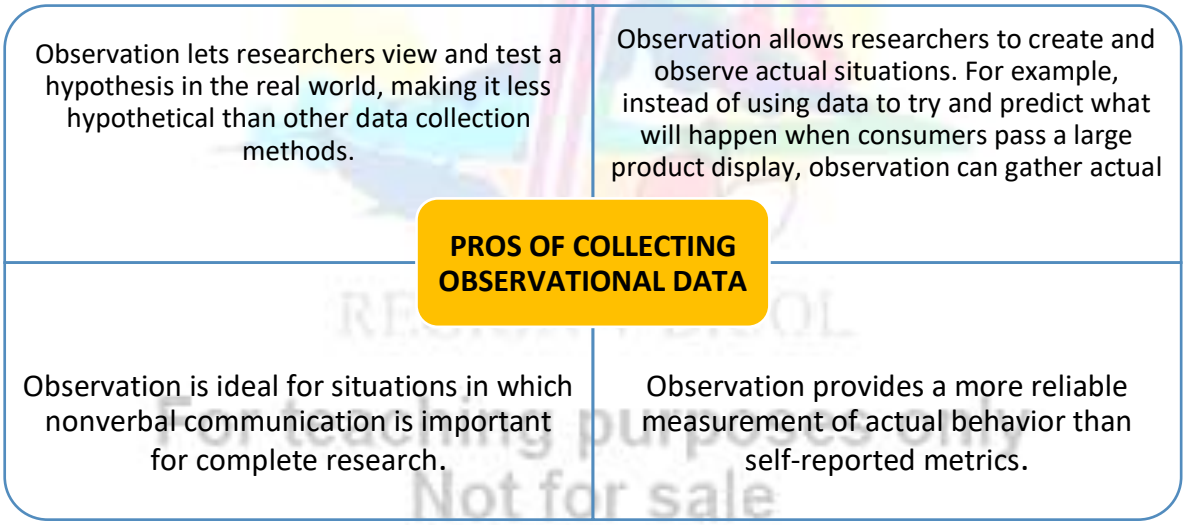
C. GATHERING INFORMATION FROM OBSERVATIONS			
TYPES OF OBSERVATION	DEFINITION	EXAMPLES	STRENGTHS AND WEAKNESSES
Participant vs. Non-Participant Observation	Non-participant observation: the researcher	For example, a researcher who wants to study "paghagot" could first watch parhagots	Both participant and non-participant observation can yield valuable or detrimental observational data, depending on your study. However,

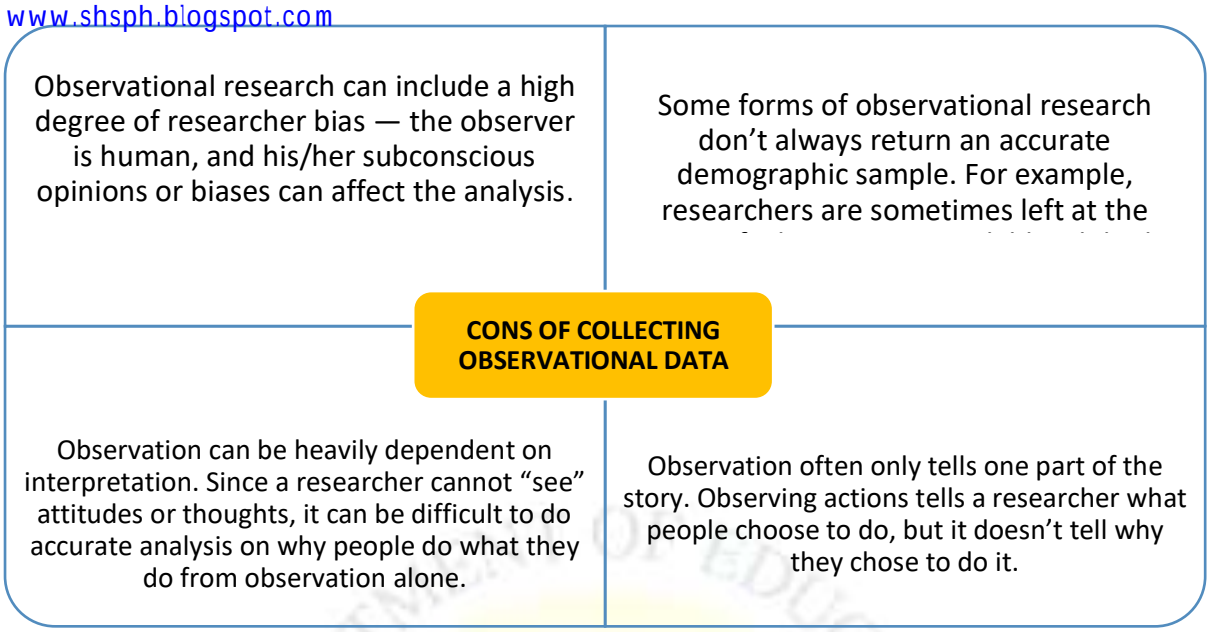
	is separate from the activity	(i.e. non-participant observation) to get an overview of how they do their job.	they are often most effective when used together to develop a more complete picture of what's being studied.
	Participant observation: the researcher is involved in the activity	Then the researcher could participate in "paghagot" (i.e. participant observation) to directly interact with the 'parhagot' and learn more about its internal dynamics.	
Simple vs. Behavioral Observation	Simple observation: the researcher collects simple numerical data	The researcher counts how many students fail mathematics class in a specific grade level	Both of these forms of observation are most valuable when used together to understand details within a bigger picture. For example, a researcher may combine simple observational data (how many people attend a workshop) with behavioral observational data (how actively people participate in the workshop) to assess how effective a workshop is. Even seasoned professionals are susceptible to researcher bias — errors due to bias and mental shortcuts. Watch out for these shortcomings that can discredit even the best surveys.
	Behavioral observation: the researcher interprets people's behavior	How engaging a lecturer on Mathematics is or how motivated the "failing students" are in the said subject matter?	
Direct vs. Indirect Observation	Direct observation: the researcher observes an activity as it happens	(e.g. they are watching students in the cafeteria at lunch to learn about their eating habits)	Direct observation is valuable because it offers real-time information. Its weakness, however, is that it misses anything outside of the observation.
	Indirect observation: the researcher observes the results of an activity	(e.g. they examine the trash left over after students' lunches to learn about their food waste habits)	The value in indirect observation lies in the fact that it is non-invasive and people's behavior will not be affected by the presence of an observer. Its weakness, however, is that information collected could be limited depending on what is being indirectly observed.
Covert vs. Overt Observation	Covert observation: the researcher observes secretly	Covert observation takes places when a researcher is observing the activity in secret (perhaps through a hidden video camera).	Covert observation raises immediate ethical issues (since people involved in a study should give informed consent first). However, covert observation allows researchers to access groups that otherwise would not participate in studies, allowing researchers to expand knowledge on lesser-known social groups.

	Overt observation: people know the researcher is observing them	In overt observation, as the name describes, the people being observed know a researcher is observing them.	An advantage of overt observation is that it lets researchers be honest with participants and tell them they're being observed. This avoids any ethical issues, like the lack of informed consent. However, a related disadvantage is that the participants understand the aims of the observer, so they're more likely to alter their behavior.

Observational data is a valuable form of research that can give researchers information that goes beyond numbers and statistics. In general, observation is a systematic way to collect data by observing people in natural situations or settings. There are many different types of observation, each with its strengths and weaknesses (Ferguson, 2018).

Should you collect observational data? Here are its advantages and disadvantages:





Source: Ferguson, 2018, https://humansofdata.atlan.com/2018/02/how-when-collect-observational-data/

VI. PRACTICE TASKS

Well done, learners! Now that you've read and analyzed the learning concepts, it's time to test your understanding about the subject matter. You will have to answer the series of activities provided below. But, before you accomplish the series of activities, read and follow the instructions given in each task.

Practice Task 1

Code/Categories/Themes	
Direction: Complete the table below. Think of possible preset codes/categories/themes for the given questions.	
Areas of Focus	**Codes/Categories/Themes**
1. How do you deal with bullies?	
2. What is the most preferred track of incoming Grade 11 students?	
3. What do you think is your secret in your carpentry shop that keeps customers coming back?	

Practice Task 2

Direction: Analyze and comprehend the given interview transcription. Use codes in order to identify patterns and themes.

Q1: ***What has motivated you to share, with so many people watching, all the personal parts of your life?***

A: My intention was never to become a tabloid. So when things kind of happened that way, it got out of control. And then I was like, "Wait, none of this is true." The way the media has sometimes tried to explain things has made it sound really bad, when in reality there's nothing wrong with the fact that I needed to go away or that I fell in love. I had to start opening up because people were taking away my narrative and it was killing me. I'm so young and I'm going to keep changing, and no one has the right to tell me how my life's going.

Source: https://www.interviewmagazine.com/culture/selena-gomez-amy-schumer-spring-2020

Practice Task 3

Direction: **Provide the required information below. Refer to your proposed research study.**

1. Proposed Study:
   _____
   _____
2. Conduct an interview using the questions you on your questionnaires to start coding, and identifying themes and categories.
3. Write examples of transcript derived from the interview
   Question:
   _____
   Interviewee 1:
   _____
   _____
   Interviewee 2:
   _____
   _____
   Interviewee 3:
   _____
   _____
   _____
   _____
4. What themes did you identify?
   _____
   _____

VII. POST TEST

Read and comprehend the questions below. Choose your answers from the given choices. Write your answer/s in a CAPITAL LETTER in your notebook.

1. method in establishing reliability where the same test is given to a group of respondents twice._____
   A. stability B. sensitivity C. specificity D. speed
2. This involves the identification, examination, and interpretation of patterns and themes._____
   A. quantitative data analysis
   B. data analysis
   C. analysis
   D. qualitative data analysis
3. Which of the following is the correct order of processes involving qualitative analysis? _____
   I. Cleaning the data
   II. Coding
   III. Entering and organizing the data
   IV. Focusing the analysis
   V. Getting to know the data
   VI. Identifying meaningful patterns and themes
   VII. Interpreting the data
   A. V, IV, II, III, I, VI, VII
   B. I, III, V, II, IV, VI, VII
   C. VII, VI, I, III, II, IV, V
   D. VII, VI, IV, II, V, III, I
4. Which of the following type of observation does the researcher observes an activity as it happens? _____
   B. Participant observation
   C. Non-participant observation
   C. Direct observation
   D. Indirect observation
5. Which of the following is TRUE about observation as a type of data analysis method? _____
   A. Observation lets researchers view and test a hypothesis in the real world, making it less hypothetical than other data collection methods.
   B. Observation provides a more reliable measurement of actual behavior than self-reported metrics
   C. Observational research can include a high degree of researcher bias — the observer is human, and his/her subconscious opinions or biases can affect the analysis.
   D. Observation often only tells one part of the story. Observing actions tells a researcher what people choose to do, but it doesn't tell why they chose to do it.

PART VIII. ASSIGNMENTS AND RECOMMENDATIONS

Instructions: Examine the table below that shows the freedom levels in the 10 countries of South East Asia or the 10 member countries of the Association of Southeast Asia Nations or (ASEAN). Answer the questions that follow then write your answers in a short bond paper.

Year	1980			1990			2000			2011		
Country	*Freedom Status*	*PR*	*CL*	*Freedom Status*	*PR*	*CL*	*Freedom Status*	*PR*	*CL*	*Freedom Status*	*PR*	*CL*
Singapore	Partly Free	5	5	Partly Free	4	4	Partly Free	5	5	Partly Free	4	4
Brunei	-	-	-	Not Free	6	5	Not Free	7	5	Not Free	6	5
Malaysia	Partly Free	3	4	Partly Free	5	4	Partly Free	5	5	Partly Free	4	4
Thailand	Partly Free	3	4	Free	2	3	Free	2	3	Partly Free	4	4
Indonesia	Partly Free	5	5	Partly Free	6	5	Partly Free	3	4	Free	2	3
Vietnam	Not Free	7	7	Not Free	7	7	Not Free	7	6	Not Free	7	5
Philippines	Partly Free	5	5	Partly Free	3	3	Free	2	3	Partly Free	3	3
Laos	Not Free	7	7	Not Free	6	7	Not Free	7	6	Not Free	7	6
Cambodia	Not Free	7	7	Not Free	7	7	Not Free	6	6	Not Free	6	5
Myanmar	Not Free	7	6	Not Free	7	7	Not Free	7	7	Not Free	7	6

(PR: Political Rights; CL: Civil Rights)

Source: Freedom House (through Penang Monthly)

Questions:

1. What is the key concept or construct in the table?
2. What are the variables in the table?
3. In what levels of measurement are the variables in the table?
4. How will you code the variable in the table?
5. Are the indicators of the key construct valid and reliable? Explain your answer.

Activity Source: Melegrito, L., and Mendoza D. Applied Research: *An Introduction to Quantitative Research Methods and Report Writing.* Quezon City, Phoenix Publishing House, 201

ANSWER KEY

a. **PRETEST** (answers may vary)

b. **PRACTICE TASKS 1-2** (Answers may vary) but in learning task 3, answers must be assessed using this rubric:

Rubric for assessing an interview

Student's full name: _____

Criteria/Rating s	4 Proficient	3 Advanced	2 Fair	1 Needs improvement
Greetings	The interviewer greets and addresses the interviewee politely in an very effective way.	The interviewer greets and addresses the interviewee naturally and politely.	The interviewer greets and addresses the interviewee naturally and politely enough.	The interviewer does not greet or address the interviewee naturally or politely enough.
Introduction	The interviewer fully introduces the topic of the interview and the interviewee and provides the audience with all the necessary information.	The interviewer briefly introduces the topic of the interview and the interviewee.	The interviewer briefly introduces the topic of the interview and the interviewee but does not provide the audience with all the necessary information.	The interviewer does not introduce the topic of the interview or the interviewee.
Questions made	The questions made perfectly match the various aspects of the topic of the interview.	The questions made match the various aspects of the topic of the interview.	The questions made fairly match the various aspects of the topic of the interview.	The questions made do not match the various aspects of the topic of the interview.
Interviewer's attitude	All along the interview, the interviewer looks at the camera and at the interviewee; he/she speaks soundly, with good pronunciation and without fillers or wildcard words.	The interviewer mostly looks at the camera and at the interviewee; he/she speaks soundly, with good pronunciation and without fillers or wildcard words.	The interviewer sometimes looks at the camera and at the interviewee; he/she speaks soundly enough, but sometimes he/she is not easy to understand and he/she uses fillers or wildcard words.	The interviewer scarcely looks at the camera or at the interviewee; he/she does not speak soundly, and/or is not understood. He/she uses lots of fillers or wildcard words.

c. **POST TEST**

1. A
2. D
3. A
4. C
5. A,B,C,D

d. **ASSIGNMENT**

1. Freedom levels of 10 member countries of the Association of Southeast Asia Nation
2. YEAR, PR/CL and Freedom Status
3. Likert Scale
4. It can be coded as (1-3 for Free, 4-5 Partly Free and 6-7 Free) with intermediate anchors in between.
5. The indicators of the key construct are valid and reliable because it covers the construct of interest, and whether the scores it produces are correlated with other variables they are expected to be correlated with and not correlated with variables that are conceptually distinct. The reliability and validity of a measure is not established by any single study but by the pattern of results across multiple studies since this came from a Valid Source. The assessment of reliability and validity is an on-going process.

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