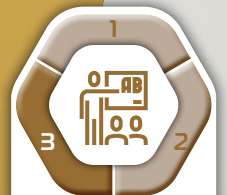




2020-2021

SOCIAL STUDIES

OUR UAE, OUR WORLD:
UNDERSTANDING OUR
PAST, PRESENT AND
FUTURE



Grade
11

Teacher Guide

Social Studies

Our UAE, Our World:
Understanding our Past, Present and Future

Teacher Guide

Grade 11

Term 3

(Pilot Version)

1441- 1442 A.H. /2020- 2021 A.D.





من أقوال المغفور له
الشيخ زايد بن سلطان آل نهيان

“

”من لا يعرف ماضيه لا يستطيع
أن يعيش حاضره ومستقبله“

He who does not know his past cannot
make the best of his present and future,
for it is from the past that we learn.

”

- Sheikh Zayed Bin Sultan Al Nahyan



H.H. Shaikh Khalifa Bin Zayed Al Nahyan
President of the United Arab Emirates

“

“Extensive knowledge and modern science must be acquired. The educational process we see today is an ongoing escalating challenge which requires hard work. We succeeded in entering the third millennium, while we are more confident in ourselves.”

”

Quotes from H.H. Shaikh Khalifa Bin Zayed Al Nahyan



INTRODUCTION



In this term students will further develop and apply research skills. Students will collect, analyse and present research. This book provides opportunities to collect data in a variety of contexts, and analyse and present data results in an appropriate format.

The skills students learn this term may be used in a variety of other courses such as Science, English and Mathematics.

In the end of term project students may choose to further develop one of the class projects into a poster presentation. This increasing level of complexity, scaffold by in-class activities and projects is aligned to the spiral learning approach applied throughout the year.

The following standards will be covered in this book:

SOC.1.5.02.029 Uses the scientific research methodology to solve investigate various public issues related to social studies

SOC.2.1.01.033 Presents a detailed and accurate report on a certain problem highlighting the research methodology used to solve the problem

SOC.2.1.01.035 Carries out a field study on a certain issue or problem, assesses the most significant results and submits them to the officials for beneficial use

SOC.2.1.01.036 Analyzes how a text uses structure to emphasize key points or advance an explanation or analysis

SOC.2.1.01.037 Analyses the relationship between a primary and secondary source on the same topic

SOC.2.1.01.038 Integrates visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts

SOC.2.1.01.039 Integrates and evaluates multiple sources of Information, presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem

SOC.2.1.01.040 Engages in meaningful discussions and debates on social studies topics (one-on-one, with an adult, in groups)

SOC.2.1.01.042 Prepares an oral presentation on social studies topics and shows findings with supporting evidence]

SOC.2.2.01.053 Uses technology to gather information from various sources and evaluates interpretations of the same event

SOC.2.2.01.054 Works collaboratively to research, examine and present a contemporary issue recognizing all sides of the issue



CONTENTS





content is defined on smart learning app

Introduction	6
Lesson 1: Qualitative Analysis	10
Lesson 2: Quantitative Data Analysis	24
Lesson 3: Unit of analysis	36
Lesson 4: Methods of Quantitative Data Analysis	46
Lesson 5: Mid-term Review	58
Lesson 6: Descriptive Analysis Continued	66
Lesson 7: Interviews	78
Lesson 8: Experiments	90
Lesson 9: Term Project - COVID-19	100
Lesson 10: Final Review	108
Glossary	114



**LESSON 1:
QUALITATIVE
ANALYSIS**





Student Learning Outcomes (SLOs)

SOC.2.2.01.028

Decides on criteria to analyze different points of view on the same issue



SOC.2.2.01.024

Designs a plan for resolving a social, local/national problem and recommends alternative ways for its implementation












Lesson Objective

By the end of the lesson, students will

-  gain a basic understanding of qualitative analysis and different methods of qualitative data analysis
-  practice qualitative analysis and apply different methods of qualitative data analysis



Key Vocabulary

-  **Phenomenon:** A fact or situation that is observed to exist or happen
-  **Integrity:** The quality of being honest and having strong moral principles; moral uprightness.
-  **Unbiased:** Showing no prejudice or favouritism for or against something; being impartial
-  **Constraints:** A limitation or restriction
-  **Deductive:** Related to using principles of logic to figure something out
-  **Inductive:** Using a particular set of facts or ideas to form a general principle
-  **Categories:** A class or division of people or things regarded as having particular shared characteristics.
-  **Transcript:** is a written record of a completed oral interview or conversation.
-  **Narrative:** A person's view of events or story of connected events.

Lesson 1: Qualitative Analysis

Teacher-ONLY resources:

Links to videos, YouTube, other resources to be used by Teacher's only
– The teacher is responsible for pre-viewing any visuals /audios that are assigned to students

<https://www.government.ae/en/information-and-services/education/importance-of-education-to-the-government/education-and-vision-2021>

<https://www.vision2021.ae/en/national-agenda-2021/list/first-rate-circle>

Teacher may also want to use links 2 and 3 to highlight the Government's drive towards a knowledge based economy and the importance of research in this mission.

<https://www.questionpro.com/blog/qualitative-data/> This is for teachers only as a background resource to highlight key issues in research and some of the issues students will face in this term.



Materials/
Resources/
Technology

PRE-READING

T

Lesson Text

Data are raw facts while information is processed data. Researchers try to find relationships or patterns that will lead them to make claims or conclusions. In qualitative data analysis, researchers deal with data based on text, images and other types of non-numerical information.

Researchers use qualitative data analysis to find meanings and get a deeper understanding of what the data reveals about the phenomenon being studied. Researchers use quantitative data analysis to confirm, to predict or to explain a phenomenon.

The key difference between qualitative and quantitative data analysis is the role of the researcher. In quantitative research numbers are used to objectively understand the phenomenon. In qualitative research, the researcher extracts meaning according to his or her interpretation of the data. This is why qualitative research is called subjective. This heavy involvement of the researcher and subjectivity is one of the criticisms

of qualitative research. The strength of qualitative data analysis is determined by the researcher’s integrity, knowledge of the phenomenon, ability to stay neutral (unbiased), and ability to analyse data.

There are two approaches to analyse qualitative data.

Deductive Approach	Inductive Approach
<p>The researcher has a theory to start with. Therefore, this approach is usually adopted in quantitative research, but can be used in qualitative research when applying qualitative methods to research a well-known phenomenon.</p> <p>Researcher predetermines data structure.</p> <p>The research criteria or questions can be used to carry out analysis. For example, “students responded positively when asked about experience with classroom learning technologies, therefore...”</p> <p>It is quick and easy.</p>	<p>The researcher does not start with a theory. Therefore, this approach is usually adopted in qualitative research.</p> <p>The researcher has little or no idea about what they will find. So it is not structured.</p> <p>This approach is used to develop an initial theory. It is time consuming.</p>

Methods for Qualitative Data Analysis

Researchers use a combination of data analysis tools depending on the research project. For example, in small scale research project, a simple analytical tool such as content analysis may be used (see table). However, in more complex research involving many sources, a combination may be used such as content analysis and narrative analysis. All qualitative data analysis methods use codes to organise data. The table describes some of the most common data analysis methods.

Lesson 1: Qualitative Analysis

Method	Description
Content analysis:	<p>This simple method just analyses the content of a text to find patterns, ideas, categories, relationships, and so on. It is used mostly to analyse interviews, but also for secondary research from newspapers, blogs and so on.</p>
Narrative analysis:	<p>This method is used develop a story or narrative from the data.</p> <p>The researcher may use a range of sources. For example, interviews, observations, journal entries, and other sources can be used to establish a narrative of what the data is showing.</p> <p>The researcher may group the different stories of participants to develop the (overarching) main theme or story.</p>
Discourse analysis:	<p>This method analyses data according to the respondent's perspective, situation and social context.</p> <p>It takes on a form discussion and comparison of different responses. For example, (a) said this, (b) said that, therefore, it can be said.... In other words, the researcher uses the respondent's viewpoints to develop his or her viewpoint.</p>

<p>Grounded theory:</p>	<p>This method is more complex and time consuming because it aims to explain why certain things happened by comparing similar situations.</p> <p>First, the researcher analyses the collected data (may be content analysis), and then compares it with existing knowledge and theories to develop an explanation.</p> <p>The method is used to explain the specific situation or context the research is in, rather than trying to find answers that can be generalised.</p> <p>Researchers look for themes in comparisons and a theory or explanation is developed according to these themes.</p>
-------------------------	---

Qualitative Data Analysis

All qualitative data analysis methods use codes to organise data. Coding is a process of classifying and categorizing text. A researcher might organise these codes in different ways.

Codes may be created by what or who is being researched, and what they said about the information or ideas (code1). There might be a separate code for similar ideas or categories (code 2) in the same way other codes might be used to show when these ideas or categories agree or disagree (code3 / code4). The naming of the codes depends on the researcher. The main aim is to organise data in a way that makes it easier to understand and identify patterns in the text.

Below is a small section from a research interview transcript. Read the text and highlight different reasons for the interviewee to start a business.

Lesson 1: Qualitative Analysis

Interviewer: when was the first time you thought of starting a business?

Interviewee: one, people around the world have a negative view of the middle east (talks about some negative stereo types), the UAE gave me free education, free health care, so perhaps somehow if I started a successful business and it goes international, we could show the world a different perspective about us; that if we are given the opportunity, we have the potential, the ambition. We could show them that we are more than what is shown on the TV or media.

Interviewer: But, why do you feel you have to give something back to the UAE?

Interviewee: I feel like it's an obligation. It's just part of being a good citizen.

Interviewer: why do you feel you have to be a good citizen?

Interviewee: It's a general moral to be a good citizen. It's part of our religion.

Interviewer: let's go back a bit. why else did you want to start a business?

Interviewee: well... to be productive... for financial reasons. I don't come from a rich family, so I wanted to have a different source of income for myself, and for my family.

Interviewer: which one was the stronger reason; for yourself or your family?

Interviewee: Yes, my family. I studied accountancy to get a good job, otherwise I wanted to be an artist.

A “How to Guide” for conducting qualitative data analysis

This simple guide outlines basics step you should take when conducting qualitative data analysis. This guide will be useful in later units when you will be collecting, interpreting and presenting data.

<p>Step 1: Outline</p>	<p>Before you start with the analysis you should outline what you are analysing. In most instances this will come from your research question. Even then, it is good practice to outline your unit of analysis. This is not the same as the unit of observation. For example, the unit of observation might be students, but what you want to analyse (unit of analysis) might be their view of canteen services.</p>
<p>Step 2: Label</p>	<p>Get into the habit of labelling your data. This should happen before you start the analysis process. You should label things like time and date, location, respondents and anything major that you noticed as the data was being collected.</p>
<p>Step 3: Format</p>	<p>Format your data. In most cases, this means transcribing interviews, observations, etc.</p>
<p>Step 4: Organize</p>	<p>Organize your data. After formatting, you should organise the data in a coherent manner. For example, you can organise interviews according to sample or dissect the data according to the research questions.</p>
<p>Step 5: Code</p>	<p>Use codes to separate the data. As you start the content analysis process, it is crucial that you start to code and categorise themes and patterns. You can change or merge as you go on, but start early and this will give you a much better understanding of what's inside your data.</p>

Lesson 1: Qualitative Analysis

Step 6:

Conclude & Present

Make conclusions and present findings. All this work has to lead to something, even if that something is a conclusion that nothing new is found. In qualitative research, the analysis process starts along with data collection. So you, as the researchers, will be analysing and making sense of the information you are collecting as you collect it. By the time you have followed the preceding steps, you would have come to some conclusions. It is important to communicate these in a concise and clear manner. A report, accompanied by a presentation would be a good way to do that. You will follow this method for your final year project.

In this first lesson, the teacher needs to set the scene and introduce students to what they can expect throughout the term. The main aim of this term is for students to understand and more importantly apply different stages of collecting, analysing and presenting data. Enabling them to analyse different points of views and resolve social problems, and recommendations (SOC.2.2.01.024, SOC.2.2.01.028).

The first lesson is quite lengthy and the teachers may choose to give students pre-reading. Alternatively, some schools start the book at the tail end of Term 3, which is also fine. The latter half of the first lesson exclusively focuses on Qualitative data collection and analyses methods. A table with 4 main qualitative methods of analysis is provided and students should be encouraged to come back to this when needed. This is also a recap of prior learning. Brainstorm should be used to explore what students remember from last term. Activities are self-explanatory in this lesson. But answers are provided where necessary in the appendices at the end of this teacher guide.



Lesson Description with SLO Tags and Notes



Selected Activity Answers

Activity 1: Check Your Understanding

Instructions: Answer the questions.

Q1. Which method is most commonly used to analyse interviews? Content analysis

Q2. Which method takes on a form of discussion? Discourse analysis

Q3. Which method first analyses data and then compares it with existing knowledge?

Grounded theory

Q4. Which method requires the researcher to gather data in order to establish a common story? Narrative analysis

Activity 2: Application

Match the statement to the most appropriate qualitative data analysis method.

Method		Statement
content analysis		I will read interview data to assess what the respondent liked or disliked.
narrative analysis		I will read interview data and make connections between different things the respondent said to assess whether there is a story to be told about their likes and dislikes.
discourse analysis		I will read interview data and analyse the discussion to assess what the respondent liked or disliked.
grounded theory		I will read interview data to assess what the respondent liked or disliked then compare it to other studies to explain why they may have had these likes and dislikes.





**Selected
Activity
Answers**

Activity 3: Discussion

In small group, discuss:

Which method of qualitative data analysis do you prefer?

Discuss the strengths and weaknesses of different methods to justify your choice.

Answers will vary

Activity 3: Application and Reflection

Brainstorm different categories that you might draw out of the above transcript

Answers could include;

- Starting a business
- Responsibility to the country
- Good citizens
- Financial independence
- Family

Activity 4: Application

Instructions: Answer the questions.

Q1. How many people are involved in the interview?

Two

Q2. What is the main focus of the question?

Why did you start a business?

Q3. Which main reason for starting a business were revealed during the interview?

Personal ambition, financial independence, responsibility to the country and family.



Selected Activity Answers

Q4. How can these be coded? Using the ideas from the brainstorm above, organise different categories into codes?

Answers will vary but could include;

- Love for Country
- Family
- Personal Ambition

Activity 5 & 6: Answers will vary



Formative Assessment Opportunities

Formative assessment is by:

Completing the student activities

Completing concept check after text

Engaging in discussions

Students can integrate English Communication Skills within this lesson



Remedial Opportunities

Strategies to support struggling students include:

Please refer to student book and appendices below

Language support

Peer to peer tutoring

Writing centre support if the school has one



Extension Opportunities

Student can look at how the process might differ in other fields of research. For example, how students might conduct experiments in their science class






Notes

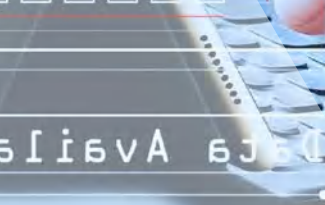
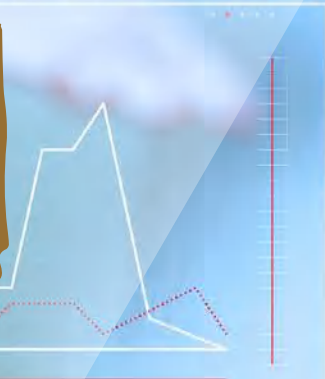


Lined writing area for notes, consisting of horizontal lines across the page.



LESSON 2: QUANTITATIVE DATA ANALYSIS

ANALYTICS



KPI: Product

Customers 2

Profits:



Evolution:



Actual vs Target



Market Share



ONLINE: USER A

08:24:30

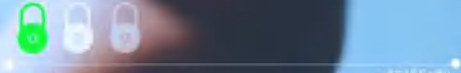
VOICE FEED: NETWORK: 15.38.73



09:30:10



SECURITY



09:30:10



09:30:10



09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

FILE:

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10

09:30:10



Student Learning Outcomes (SLOs)

SOC.2.2.01.028

Decides on criteria to analyse different points of view on the same issue

SOC.2.2.01.024

Designs a plan for resolving a social, local/national problem and recommends alternative ways for its implementation



Lesson Objective

By the end of the lesson, students will

learn the key steps in analysing quantitative data



Key Vocabulary

Interpreting: Explain the meaning of (information, words, or actions).

Consistently: Describes something that's done the same way for a long time.

Investigate: To carry out a systematic or formal inquiry to discover and examine the facts.

Measurement: The size, length, or amount of something, as established by measuring.

Tabulation: To arrange information is to organize it into a table

Descriptive: Describing or classifying in an object, situation or sample

Disaggregation: The act of separating something (a sample) from the whole

Subsequent: Happening after something else.



Materials/ Resources/ Technology

Teacher-ONLY resources:

Links to videos, YouTube, other resources to be used by Teacher's only – The teacher is responsible for pre-viewing any visuals /audios that are assigned to students:

<https://www.government.ae/en/information-and-services/education/importance-of-education-to-the-government/education-and-vision-2021>



Lesson 2: Quantitative Data Analysis

<https://www.vision2021.ae/en/national-agenda-2021>

<https://www.government.ae/en/information-and-services/education>

<https://www.thenational.ae/uae/education/school-canteens-fall-short-of-guidelines-1.483497>

These links can be used as a resource for students to extract important information. Teacher might want to adapt and use as class exercises.

<https://www.dummies.com/software/microsoft-office/excel/calculating-a-percent-distribution-in-excel/>

Good recourse for use excel in data analysis.



Materials/
Resources/
Technology

QUANTITATIVE DATA ANALYSIS



Lesson Text

In this lesson you will learn the key steps in analysing quantitative data at the beginning of the topic. This is because you will be applying your knowledge to examples as you go through different methods of analysis.

A how-to guide has been provided to help you. Please use it as a reference point as you complete activities over the next few lessons. You will be provided with a data set, which you should first prepare on excel (if possible) before completing activities.

A “How-to Guide” for conducting quantitative data analysis.

This simple guide outlines basic step you should take when conducting a quantitative data analysis. This guide will be useful in later units when you will be collecting, interpreting and presenting data.

Step 1: Transfer	Transfer your data into a readable format. If you have access to excel then this should be your starting point. Organise the data in a way that clearly differentiates between questions, and different categories.
---------------------	---

T

Lesson Text

<p>Step 2: Analyse</p>	<p>Once the data is transferred, make final checks to ensure that the data sets are complete, and without errors.</p> <p>Conduct some initial analysis to ensure there is no bias judgement and the data is valid.</p> <p>Are there responses missing from some questions consistently? This would indicate some questions were missed on purpose.</p> <p>If you have a large data set, then you can use the filter option on excel, or pick a smaller sample to verify data.</p>
<p>Step 3: Format</p>	<p>Format your data. This means adding codes to further simplify your data.</p> <p>For example, if you are measuring student happiness from a scale of 1 to 10, in a sample of 20 students, then you might want to separate how many students responded under each level of happiness (1=2), (2=1), (8=7) and so on.</p> <p>This will also help you identify the unit of analysis, which includes what you want to investigate.</p>
<p>Step 4: Prepare Data</p>	<p>The first 3 steps outline how you prepare your data before analysis.</p> <p>The fourth step is about choosing an appropriate level of measurement.</p> <p>How are you measuring the data? There are 4 ways you can do this;</p> <ul style="list-style-type: none"> ● Nominal ● Ordinal ● Interval ● Ratio (scale)



T

Lesson Text

<p>Step 5: Analyse</p>	<p>After data preparation, and identifying an appropriate level of measurement, you are ready to apply data analysis techniques.</p> <p>At this basic level, you do not need to go beyond the 3 options outlined below.</p> <p>However, you might want to use a combination of these when it comes to completing your final year project in grade 12.</p> <ul style="list-style-type: none"> ● Data tabulation (frequency distributions & percent distributions) ● Descriptive data ● Data disaggregation
<p>Step 6: Write up</p>	<p>The final step is to write-up your results and present your findings.</p>

CASE STUDY: JADID TRADING LLC

Jadid Trading LLC is a new company in the UAE. It employs 20 sales staff across two Emirates of Dubai and Sharjah. After advertising the job vacancies, the company started to hire sales staff in February of 2019, and completed its quota of 20 staff by the end of March 2019. All new sales staff should receive training within the first week of joining, and extra training within the first month of joining the company.

In May 2019 the company carried out a survey. The survey was conducted with all sales staff using a questionnaire. Read through the survey and highlight important questions.

Note to students: You should use this data set to complete related activities. However, your class teacher may also give students additional data, or a different data set

T

Lesson Text

altogether. Either way, you need to follow the steps in the “How-to Guide” provided in this lesson to complete related activities. You should first prepare this data on excel (if possible) before completing activities. The file has been provided with this book which you can use to copy and paste the data below.



Lesson Description with SLO Tags and Notes

Students should already know a lot about this topic. Therefore, the teacher should run through the first few activities quickly and focus on how to critically assess information and extract relevant information for appropriate for the task. A step-by-step guide has been provided for students, which students should refer back to as they progress through the next few lessons. Similarly, to lesson one students should understand how quantitative research and enable them to analyse different points of views and resolve social problems, and recommendations (SOC.2.2.01.024, SOC.2.2.01.028).

Critically analysing data is a basic skill, which is applicable in all subjects. Students can be encouraged to consider how they will apply these skills in other subjects. There are many opportunities here for integration with Math and ICT projects. Students can integrate English Communication Skills within this lesson. For students taking business studies teachers can link this lesson with market research.

Please note there are a number of issues with question design and formatting in the Al Jadid LLC Case study. These can we identified as students apply the how to guide and go through the different exercises. This is the original data set, feel free to manipulate and organise data in different ways to develop student understanding. The next sheet provides basic descriptive statistics. Again, teachers are encouraged to further manipulate and demonstrate how different charts can represent the same data. Teachers also have to option of sharing certain charts and tables with students for different activities.



Selected Activity Answers

Warm up: Mind Map

Building on your knowledge from the previous term, create a mind map of different types of qualitative and quantitative data collection methods.

Lesson 2: Quantitative Data Analysis

Answers will vary but may include;

Qualitative: Interviews, Focus groups, Observations

Quantitative: Surveys, questionnaires, Observations

Activity 1: Application

Instructions: Read the case and follow the instructions.

Case Study: Jadid Trading LLC

Jadid Trading LLC is a new company in the UAE. It employs 20 sales staff across two Emirates of Dubai and Sharjah. After advertising the job vacancies, the company started to hire sales staff in February of 2019, and completed its quota of 20 staff by the end of March 2019. All new sales staff should receive training within the first week of joining, and extra training within the first month of joining the company.

In May 2019 the company carried out a survey. The survey was conducted with all sales staff using a questionnaire. Read through the survey and highlight important questions.

Staff Survey May 2019

Please fill in the relevant information below as accurately as you can.

Name: _____

Employee Reference Number _____

Q1: What date did you join the company? _____

Q2: Which branch do you work at? _____

Q3: What was the last rating given by your Manager?

1	2	3	4	5
---	---	---	---	---

Q4: On a scale of 1 to 5 how satisfied would you say you are with your line manager?



**Selected
Activity
Answers**



**Selected
Activity
Answers**

Not sure	Not Satisfied	Somewhat Satisfied	Satisfied	Very Satisfied
1	2	3	4	5

Q5: On a scale of 1 to 5 how satisfied would you say you are with your Work Conditions?

Not sure	Not Satisfied	Somewhat Satisfied	Satisfied	Very Satisfied
1	2	3	4	5

Q6: What was your sales Performance rating in April?

1	2	3	4	5
---	---	---	---	---

Q7: Did you receive extra training

Yes	No
-----	----

Q8: In which Emirate do you live?

Sharjah	Dubai	Other
---------	-------	-------

Activity 2: Discussion

In pairs or groups, brainstorm the strengths and weaknesses of the questionnaire above.

Answers will vary

Activity 3: Concept Check

Instructions: Answer the questions.

Which questions are closed questions and which questions are scaled?

Closed Questions: 1,2,3,6,7,8

Scaled Questions: 4 & 5

Lesson 2: Quantitative Data Analysis

Activity 4: Concept Check

Identify at least 2 questions that can potentially lead to inaccurate or biased responses. Discuss why?

Answers will vary but may include; Questions 4 & 5 – because response requires employee level of satisfaction with manager and employer. These responses can potentially be influenced by the type of interaction the employee had with the manager or employer.

The results from the questionnaire were transferred to an excel sheet.

Note to students: You should use this data set to complete related activities. However, your class teacher may also give students additional data, or a different data set altogether. Either way, you need to follow the steps in the “How-to Guide” provided in this lesson to complete related activities. You should first prepare this data on excel (if possible) before completing activities. The file has been provided with this book which you can use to copy and paste the data below.



Selected Activity Answers

Activity 5: Application

If your teacher has not given you this data on an excel file, you must transfer it to excel yourself. Make sure this is done accurately, otherwise your analysis in later activities may not be correct.

Employee Reference	Q1 - Joining Date	Q2 - Current Branch	Q3 - Manager Rating in May 2019	Q4 - Employee Satisfaction with Manager	Q5 - Employee Satisfaction with Work Conditions	Q6 - Employee Performance by Sales	Q7 - Extra Training Received	Q8 - Employee Residence
101	5/3/2019	Dubai	4	3	3	5	1	Dubai
102	2/3/2019	Dubai	3	3	4	4	1	Dubai
103	1/2/2019	Dubai	1	2	2	2	0	Sharjah
104	1/2/2019	Dubai	2	2	1	1	0	Sharjah
105	1/2/2019	Sharjah	2	2	1	1	0	Sharjah
106	15/03/2019	Sharjah	4	3	4	3	1	Sharjah
107	29/03/2019	Sharjah	5	4	5	5	1	Sharjah
108	2/2/2019	Dubai	1	2	1	3	1	Sharjah
109	5/2/2019	Dubai	1	3	3	4	1	Sharjah
110	11/3/2019	Dubai	4	3	5	5	1	Dubai



Selected Activity Answers

111	1/2/2019	Dubai	2	1	2	3	1	Sharjah
112	11/3/2019	Dubai	5	4	5	5	1	Dubai
113	12/3/2019	Dubai	5	5	5	5	1	Dubai
114	7/2/2019	Sharjah	3	2	2	3	1	Sharjah
115	3/2/2019	Sharjah	2	1	2	3	1	Sharjah
116	11/2/2019	Sharjah	3	3	3	3	0	Sharjah
117	15/2/2019	Sharjah	2	2	3	2	0	Sharjah
118	7/3/2019	Dubai	5	4	5	5	1	Dubai
119	8/3/2019	Dubai	5	5	5	4	1	Dubai
120	5/2/2019	Sharjah	1	2	2	2	0	Dubai

Activity 6: Concept Check

Answer questions related to the data in the table.

Q1. Which branch employs more sales staff? Dubai

Q2. Which Emirate do most employees live? Sharjah

Q3. How many employees received extra training? 14

Optional bonus question

Q4. Which function on excel makes it easier to obtain the above answers quickly?

Auto-Sum or Filter

Activity 7: Reflection

Look at the main questionnaire again. Discuss which questions should be changed in order to create a better data set and subsequent analysis.

Answers will vary



Formative assessment is by:

- Completing the student activities
- Completing concept check after text
- Engaging in discussions



**Formative
Assessment
Opportunities**

Strategies to support struggling students include:

- language support
- peer to peer tutoring
- writing centre support if the school has one




**Remedial
Opportunities**

Teacher should confirm student understanding on how to carry out quantitative data analysis. Students should also be aware of what is expected in the next lesson where they have demonstrated these skills. The teacher may want students to analysis a different information from one of the core subjects. They can also manipulate the original data and clear out mistakes.



**Extension
Opportunities**



LESSON 3: UNIT OF ANALYSIS





180 pts

180 pts

Lorem Ipsum



Student Learning Outcomes (SLOs)

SOC.2.1.01.038

Integrates visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts


SOC.2.1.01.039

Integrates and evaluates multiple sources of Information, presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem








Lesson Objective

By the end of the lesson, students will

 apply different methods of analysis.



Key Vocabulary

-  **Unit of analysis:** Is the major entity that you are analysing in your study.
-  **Nominal:** A number used only as a name, or to identify something
-  **Ordinal:** A number defining the position of something in a series, such as 'first', 'second', or 'third'
-  **Interval:** A period between two events or times, a gap.
-  **Ratio:** The quantitative relation between two amounts showing the number of times one value contains or is contained within the other.



Materials/ Resources/ Technology

Teacher-ONLY resources:

Links to videos, YouTube, other resources to be used by Teacher's only – The teacher is responsible for pre-viewing any visuals /audios that are assigned to students:



Lesson 3: Unit of analysis

1. <http://fcsa.gov.ae/en-us/Pages/Statistics/Statistics-bySubject.aspx#/%3Ffolder=Economy/National%20Account/National%20Account>
Good government website, which can be used as additional sources of data.
2. <https://www.government.ae/en/information-and-services/education/importance-of-education-to-the-government/education-and-vision-2021>
3. <https://www.vision2021.ae/en/national-agenda-2021>
4. <https://www.government.ae/en/information-and-services/education>
5. <https://www.thenational.ae/uae/education/school-canteens-fall-short-of-guidelines-1.483497>
These links can be used as a resource for students to extract important information. Teacher might want to adapt and use as class exercises.
6. https://www.youtube.com/watch?v=cHGhSj_Ax-0 – good video for teachers and students (teachers please see the video first to see if it fits with school context) on cleaning the data and getting it ready for analysis.



Materials/
Resources/
Technology

CASE STUDY: JADID TRADING LLC (CONTINUED)

Jadid Trading LLC mainly conducted the survey to find out why certain sales staff were underperforming. They have given this task to you. The company expects a detailed analysis of data with reasons for why some sales staff might not be performing to expectations. You will continue with this work over the next few lessons. Go back to the previous lesson and the “How-to Guide” for conducting quantitative data analysis. After you have prepared the data (steps 1-3), the data is ready for analysis. First, you need to identify the unit of analysis.



Lesson Text

T

Lesson Text

CASE STUDY: JADID TRADING LLC (CONTINUED)

After confirming that the unit of analysis as employee performance, and the units of observation related to other details about sales staff, you are nearly ready to start the analysis process. However, first you need to identify the level of measurement relevant to the data set. Keep in mind there might be different levels of measurements that are best suited to individual questions. Therefore, a questionnaire can include multiple levels of measurements. Here is some more information about levels of measurements. Apply this information to complete related activities.

Level of Measurement: Nominal data

Nominal data is basic classification data. The simplest level of measurement usually includes names. By itself it does not have any quantitative value and cannot be measured. Instead, these can be grouped together to measure other variables. For example, fathers and mothers, males and females, Rome and Venice, can all make up nominal data. They can be grouped. For example, males and females can be used to measure other variables. One example could be male and female students' scores in an English exam. In this example, the nominal data (male and female) is being used to label other variables, like scores in an English exam. This type of data can be grouped together into categories to analyse each category. For example, the percentage of males in the English class.

Level of Measurement: Ordinal data

Ordinal data is data or information in a logical order. For example, very sad, sad, happy, very happy are usually used in scaled questions (1 to something), where the difference between values follows a logical order, and used to rank information. But, the difference between them is not necessarily the same. For example, the number of people who said between somewhat satisfied, and satisfied. This type of data is usually presented in tables, charts, bar graphs, etc. Lastly, this type of data is not constant, meaning the values change with the variables. For example,

Lesson 3: Unit of analysis

the number of participants that pick different options may change their value, i.e. very sad (3 people), sad (5 people), happy (3 people), very happy (7 people).

T

Lesson Text

Level of Measurement: Interval data

Interval data also has a logical order and it is constant. This data is similar to the ordinal data but there is a set difference between the values. For example, 1 cm, 2 cm, 3 cm and so on. However, there is no natural zero in interval data. But, you can have 0 cm. So, what you have to do is put a “no natural zero” which means a zero here is not relevant, or that it does not have any meaning. For instance, when measuring the height of tables, 0 cm has no value since it’s not a height. Hence, the term no natural zero. Questions that ask participants to rank their responses, as on Likert scale questions, can be good example of interval data.

For example, rank your satisfaction on scale of 1-5.

1 = Very Dissatisfied

2 = Dissatisfied

3 = Neutral

4 = Satisfied

5 = Very satisfied

Level of Measurement: Ratio data

Ration data is basically all of the above plus the natural zero. Meaning it is constant, ranked, has a stand difference between values, and has a natural zero. The zero in rations is important because you are not just measuring something, but also comparing that measurement. This enables you to say that one measure is twice as long as another. Example: table 1 (100 cm) is twice as tall as table 2 (50 cm). Here the zero is important because it shows what is the absolute lowest, this has relevance and value. Ratios can be applied to any scale of measurement, such as millimetres, centimetres, meters and kilometres.



Lesson Description with SLO Tags and Notes

These are very hands on lessons. The students should already know how to apply these basic methods. So the teacher should encourage students to work through these quickly. Students should be encouraged to integrate visual information (e.g., in charts, graphs) and evaluate multiple sources of Information (SOC.2.1.01.038

SOC.2.1.01.039). The key take away here should be a clear understanding of what the students are trying to analysis – the unit of analysis. This will help them apply different methods of analysis. There should be a discussion on some of the challenges students faced and how to overcome these. Students should also be aware of what is expected in the next lesson where they will be expected to start the analysis process.



Selected Activity Answers

Warm up: Brainstorm

Look at the data set provided in the previous lesson.

In small groups or pairs brainstorm some of the challenges you might face when analysing employee information as it is presented in the set.

Answers will vary but may include;

Different joining dates

Different types of data (open and closed questions)

Different types of information

Activity 1: Concept Check

Instructions: Answer the questions.

Q1. What are your units of observation?

Employee Performance by Sales / Extra Training Received

Q2. What is your unit of analysis?

Employee Performance



Activity 2: Concept Check

How many levels of measurements were discussed in step 4? Circle the correct number 4

Activity 3: Application

Study the questionnaire again. Knowing what know now about the levels of measurement, what changes can you suggest to improve the questionnaire design? Your recommendations can be related to structure or language (wording).

Answers will vary but may include;

- Change structure of scaled questions so the options look like:
- Not Satisfied - Somewhat Satisfied - Not sure – Satisfied - Very Satisfied
- Add open ended questions to better understand reasons for responses to Q4 and Q5.
- Q1 & 2 should just have limited options so consistent data is collected.

Activity 4: Concept Check

Which question/s could have been given to a different sample to improve reliability?

All questions apart from Q4&5 could have been given to the line manager or HR.

Activity 5: Concept Check

In the table below, outline which levels of measurement can be applied to different questions.

Level of Measurement	Question Number/s
Nominal	Q1,2,7,8
Ordinal	Q4 & 5
Interval	Q3 & 6
Ratio (scale)	Q4 & 5 (but without a natural 0)

Activity 5: Application and Reflection

The data set above has a mix of different types of nominal, ordinal, interval and scaled data.

Discuss what problems this could lead to when it comes to analysing the data.

Answers will vary



Formative Assessment Opportunities

Formative assessment is by:

Completing the student activities

Completing concept check after text

Engaging in discussions

Strong linkages with Mathematics possible here. Students can incorporate

Lesson 3: Unit of analysis

statistical analysis skills here, along with reading numerical information and using data for different purposes.

Strategies to support struggling students include:

Language support

Peer to peer tutoring



**Remedial
Opportunities**

The teacher may want students to analysis the data set and identify different units of analysis. The teacher may want students to analysis a different information from one of the core subjects. They can also manipulate the original data and clear out mistakes.



**Extension
Opportunities**



LESSON 4: METHODS OF QUANTITATIVE DATA ANALYSIS





Student Learning Outcomes (SLOs)

SOC.2.1.01.038

Integrates visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts

SOC.2.1.01.039

Integrates and evaluates multiple sources of Information, presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem



SOC.2.2.01.053

Uses technology to gather information from various sources and evaluates interpretations of the same event










Lesson Objective

By the end of the lesson, students will

-  develop their understanding of quantitative data and descriptive analysis
-  apply descriptive analysis



Key Vocabulary

-  **Descriptive analysis:** Used to describe the basic features of the data in a study.
-  **Frequency distributions:** A representation, either in a graphical or tabular format that displays the number of observations within a given interval.
-  **Percent distributions:** A frequency distribution in which the individual class frequencies are expressed as a percentage of the total frequency equated to 100.
-  **Replicate:** To make an exact copy or to reproduce something
-  **Patterns:** A particular way in which something is done, is organized, or happens
-  **Tabulation:** To arrange information is to organize it into a table
-  **Statistic:** Information based on a study of the number of times something happens or is present, or other numerical facts.

Lesson 4: Methods of Quantitative Data Analysis

Teacher-ONLY resources:

Links to videos, YouTube, other resources to be used by Teacher's only – The teacher is responsible for pre-viewing any visuals /audios that are assigned to students:

3. <http://statulator.com/blog/descriptive-analysis-take-it-easy> - nice resources for teachers or students. Teacher can also use this to draw out additional activities if needed.



Materials/
Resources/
Technology



Lesson Text

DATA TABULATION, FREQUENCY DISTRIBUTIONS & PERCENT DISTRIBUTIONS

Deciding on the level of measurement you need to create tables for your raw data is an important step in data analysis. It further develops your understanding of the data and helps in identifying patterns. This process also confirms the total values in each category.

You need to identify which questions go together, and have the same level of measurement. Then start with the basics and calculate frequency (how many times something happens), and percent distributions (how much of the total does each category represent).

Note to students: At this stage it is important to have transferred all the data onto excel as you will be completing a number of exercises based on this data below. Alternatively, you can use graph paper, calculator and additional resources to complete manually, but that will take you much longer.

Frequency distributions are presented in a table with the number of individual scores that can be grouped in the same category. Since there are too many different joining dates in the data set, it is useful to group them in a logical order. In this case, 2 weeks apart is one way of doing it.

This process of tabulation makes it easier for the researcher to understand the date, identify mistakes, and start identifying patterns. Researchers would be developing these tables, finding frequencies, assigning percentages and preparing graphs all at the same time. This is an important part of the data analysis process as it allows the researcher

T

Lesson Text

to adjust how the data is displayed. For example, you would have noticed how the questions 2, 7 and 8 have been displayed differently compared to how they were posed in the questionnaire. Why do you think this is?

PERCENT DISTRIBUTION

A percent distribution shows the quantity of respondents who are represented within each category. For example, question 8 shows 40% of respondents live in Dubai while 60% live in Sharjah. As nominal measures, they will not tell you anything more until you compare and contrast with other information.

DESCRIPTIVE ANALYSIS

Once you start the tabulation process with frequencies and percentage scores, the data analysis is started. However, you need to start describing that it is telling the reading. The two commonly used quantitative data analysis methods are descriptive and inferential analysis. Descriptive analysis is used when the researchers is looking at a specific issue (like the one above), and the sample size is relatively small. Descriptive simply mean describing the data. You have a number of tools to do this:

- mean = the numerical average value
- minimum and maximum values – the highest and lowest value
- median – the numerical middle value
- mode: the most common value

You will not need to run all of these for a data set, in fact depending the data set and questions, in most cases the mean is enough to describe the data. But keep in mind the mean (or average) can only be calculated for interval and ratio data.

From activity 5, can you see that on their own, descriptive analysis only describe the data? If you were only looking at question 1, you would only know which branch was employing the most amount of sales staff. It does not tell you anything more (12 employees in Dubai and 8 in Sharjah). Yes, it shows there are more sales staff in Dubai. However, they do not explain the reasoning behind responses, they simply report on the responses. That is why descriptive analysis is used mainly to summarize data into a

Lesson 4: Methods of Quantitative Data Analysis

manageable format that might show patterns. Once similar exercises are done for all questions these, patterns might be easier to see.

T

Lesson Text

DESCRIPTIVE ANALYSIS (CONTINUED)

As you can see, some descriptive statistics are better suited to specific questions. It should now also be clearer that these descriptive analyses only describe the numbers in the variable. Up to now, you have been looking at these variables individually. This is also known as univariate analysis. Working out the mean has enabled us to better understand individual responses when compared to the whole, even though you might still be focusing on a single variable. For example, in question 3 or 4, there is a better understanding of what is going on. The tables you made earlier can help enhance this understanding.

While the mean scores are important, it is vital to remember that they only provide a description of what the variable is showing. They do not explain the rationale or reasoning behind those numbers. If the researcher or the person analysing the data does not understand the question, then it can all go wrong. For example, in question 4 of the questionnaires the employees were asked “how satisfied would you say you are with your line manager?”

The average for this question was 2.8, very close to the median of 3. So, over all it does not look so bad. But go back to the actual questionnaires. What does 2.8 really mean? Upon closer inspection, you can see that on average employees are either “not satisfied” or just “somewhat satisfied” with the manager. Consider the rating 1 which basically says, “not sure,” then the average of 2.8 is even worse.

This is where students really start to apply data analysis and start process of identifying patterns. Teachers need to guide students through this process.

These are very hands on lessons. The students should already know how to apply these basic methods. Therefore, the teacher should encourage



Lesson
Description
with SLO
Tags and
Notes



Lesson Description with SLO Tags and Notes

students to work through these quickly. Students should be encouraged to integrate visual information (e.g., in charts, graphs) and evaluate multiple sources of Information (SOC.2.1.01.038; SOC.2.1.01.039). It would be good to use excel or other tools to gather information, evaluate and interpret it to make recommendations (SOC.2.2.01.053). Students should be able to make comparisons and start to make conclusions. Students should also be aware of what is expected in the next lesson where they will be expected to write up their results.



Selected Activity Answers

Warm up: Brainstorm

Complete the exercises below. You only have 60 seconds to complete all 4 questions.

Questions	Answers
1,4,5,3,3,3,3,5,2,2,2,1,5,4,1,5,3,5,2,5,6,5,1,1	
What is the frequency of 1?	5
Which number has the highest frequency?	5
In a class of 20 students, only 5 passed the Math exam.	
What percentage of students failed?	75%
What percentage of students passed?	25%

Activity 2: Application

The examples below show the rest. But, there are other ways of doing it. Can you replicate these in your excel sheet with the right answers? Your teacher may suggest different ways of creating the groups to calculate frequency distributions.



Lesson 4: Methods of Quantitative Data Analysis

Q2: Which branch do you work at?

Sharjah	Dubai
8	12



Selected Activity Answers

Q3: What was the last rating given by your Manager?

Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
4	5	3	3	5

Q4: On a scale of 1 to 5 how satisfied would you say you are with your line manager?

Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
2	7	6	3	2

Activity 3: Application

An example has been provided for you below. Using the excel function or calculator, add an additional row to all the tables, and calculate the percentage weights for all responses.

	1st Feb to 14 Feb	15th Feb to 28th Feb	1st March to 14 March	15th March to 31 March
Q1 - Joining Date	10	2	7	1
	50%	10%	35%	5%



Selected Activity Answers

Q2: Which branch do you work at?

Sharjah	Dubai
40%	60%

Q3: What was the last rating given by your Manager?

Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
20%	25%	15%	15%	25%

Q4: On a scale of 1 to 5 how satisfied would you say you are with your line manager?

Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
10%	35%	30 %	15%	10%

Q5: On a scale of 1 to 5 how satisfied would you say you are with your Work Conditions?

Not sure	Not Satisfied	Somewhat Satisfied	Satisfied	Very Satisfied
15%	25%	20%	10%	30%

Q6: What was your sales Performance rating in April?

Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
10%	15%	30%	15%	30%

Q7: Did you receive extra training

No	Yes
30%	70%

Q8: In which Emirate do you live?

Dubai	Sharjah
40%	60%



Lesson 4: Methods of Quantitative Data Analysis

Activity 4: Concept Check

Complete the exercises below. You only have 120 seconds to complete all 4 questions.



Selected Activity Answers

Questions	Answers
1,4,5,3,3,3,3,5,2,2,2,1,5,4,1,5,3,5,2,5,6,5,1,1	
What is the Max & Min in this range?	6 & 1
Which number appears the most amount of time (Mode)?	5
Calculate the median for the numbers above?	3.5
Calculate the mean for the numbers above?	3.5

Activity 5: Application

Look at the Jadid Trading data set again and answer related questions.

Q1. In which branch do most of the employees work?

Dubai

Q2. In which Emirate do most of the employees live?

Sharjah

Q3. In which month did most of the employees join the company?

February

Q4. Which descriptive statistic methods can be being used to answer the above questions?

Mode

Activity 6: Application

Using the Jadid Trading L.L.C. data set and tables you completed earlier, answer the related questions. On average, the manager gave employees a rating of 3. You can now use this information to work out how many of



Selected Activity Answers

the employees are above and below average. You can do this for groups using the table completed earlier, and for individuals using the raw data set. The individual comparison would only be useful for very specific purposes, like if you were carrying out an appraisal.

Q3: What was the last rating given by your Manager?

Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
4	5	3	3	5
20%	25%	15%	15%	25%

Q1. In question 3 how many of the employees are above and below the average rating given by the manager?

Above 8

Below 9

Q2. Look at employees with reference numbers 107 and 108. Are they performing above or below manager's average rating? Explain your answer.

Answers will vary

Activity 7: Application

Using the same data set above answer related questions.

Q4: On a scale of 1 to 5 how satisfied would you say you are with your line manager?

Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
2	7	6	3	2
10%	35%	30%	15%	10%

Q1. In question 4 how many of the employees rate the manager above and below the average rating of 3?



Lesson 4: Methods of Quantitative Data Analysis

Above 5

Below 9

Q2. What does this rating say about what most employees think about the manager?

Answers will vary



**Selected
Activity
Answers**

Formative assessment is by:

Completing the student activities

Completing concept check after text

Engaging in discussions



**Formative
Assessment
Opportunities**

Strategies to support struggling students include:

Language support

Peer to peer tutoring

Writing centre support if the school has one



**Remedial
Opportunities**

Students should be encouraged to explore different types of tables and charts on excel to present data analysis.

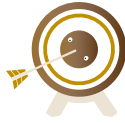


**Extension
Opportunities**



LESSON 5: MID-TERM REVIEW





Lesson Objective:

By the end of the lesson, students will:

- 👁️ check their understanding of lessons one through four
- 👁️ reflect on areas for improvement



Key Vocabulary

- ✍️ Review keywords for lessons one through four.

Important Note: The activities provided below serve as a review and do not represent the full scope of materials for the final examination. In order to succeed in the final examination students should ensure they have a sound understanding of key concepts in all in Lessons

What are the key differences between an Inductive and Deductive Approach?

Connect the method of analysis with the most relevant statement.

Method	Statement
content analysis	I will read interview data and analyse the discussion to assess what the respondent liked or disliked.
narrative analysis	I will read interview data to assess what the respondent liked or disliked then compare it to other studies to explain why they may have had these likes and dislikes.
discourse analysis	I will read interview data to assess what the respondent liked or disliked.
grounded theory	I will read interview data and make connections between different things the responded said to assess whether there is a story to be told about their likes and dislikes.

Describe closed, open and scaled questions?

Open Questions: _____ Closed

Questions: _____ Scaled

Questions: _____

What is the difference between a unit of observation and unit of analysis?

Lesson 5: Mid-term Review

Use the table below to explain each level of measurement.

Level of Measurement	Explanation
Nominal	
Ordinal	
Interval	
Ratio (scale)	

What is the difference between Data tabulation, frequency distributions & percent distributions?

Connect the key terms with the correct description

Key term	Description
median	the numerical average value
mean	the highest and lowest value
mode	the numerical middle value
minimum and maximum values	the most common value

Go back to activity 1 and 2 in lesson 4.

Use the survey results to complete the tables below. Then replicate these in your excel sheet with the right answers? Your teacher may suggest different ways of creating the groups to calculate frequency distributions.

Q5: On a scale of 1 to 5 how satisfied would you say you are with your Work Conditions?

	Not sure	Not Satisfied	Somewhat Satisfied	Satisfied	Very Satisfied
Q5 - Employee Satisfaction with Work Conditions					

Q6: What was your sales Performance rating in April?

	Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
Q6 - Employee Performance by Sales					

Q7: Did you receive extra training

	No	Yes
Q7 - Extra Training Received		

Q8: In which Emirate do you live?

	Other	Dubai	Sharjah
Q8 - Employee Residence			

Using the survey results provided in lesson 4 answer related questions below.

Q1. What was the mean (average) rating given by the manager in question 3?

Q2. What was the mean (average) employee satisfaction with manager in question 4?

Q3. What was the mean (average) employee satisfaction with work conditions in question 5?

Q4. What was the mean (average) employee performance by sales in question 6?

Q5. Why could you not do the same analysis for questions 1, 2, 7 and 8 in the questionnaire in their present form?


Using the survey results provided in lesson 4. Consider how many employees are above and below the average, but also comment on what this shows. Write this information out in paragraphs. Use statistic and the terms from questions to make comparisons for questions 5 and 6 individually. Then try to see if you can find any relationships or patterns between the responses in questions 5 and 6.

Q5: On a scale of 1 to 5 how satisfied would you say you are with your Work Conditions?

	Not sure	Not Satisfied	Somewhat Satisfied	Satisfied	Very Satisfied
Q5 - Employee Satisfaction with Work Conditions					
Average = 3.15					

Q6: What was your sales Performance rating in April?

	Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
Q6 - Employee Performance by Sales					
Average = 3.5					

The background of the slide is a photograph of a business meeting. Several people in light blue and white striped shirts are gathered around a table. One person is pointing at a pie chart on the table with a black pen. The pie chart has a blue segment and a white segment. A large, irregular brown shape is overlaid on the right side of the image, containing the text. The overall color palette is dominated by light blues, whites, and the brown of the graphic overlay.

LESSON 6: DESCRIPTIVE ANALYSIS CONTINUED

SUMMARY REPORT



Per Unit	Per Month	Per Year
0.4237942	15.36729023962	145.91097211555
0.46984898	15.5949480841	145.91097211555
0.434234	15.36729023962	145.91097211555
0.112355313	15.654648844	145.91097211555
0.4237942	15.36729023962	145.91097211555
0.46984898	15.5949480841	145.91097211555
0.434234	15.36729023962	145.91097211555
0.112355313	15.654648844	145.91097211555
0.4237942	15.36729023962	145.91097211555
0.46984898	15.5949480841	145.91097211555
0.434234	15.36729023962	145.91097211555
0.112355313	15.654648844	145.91097211555



Student Learning Outcomes (SLOs)

SOC.2.1.01.038

Integrates visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts

SOC.2.1.01.039

Integrates and evaluates multiple sources of Information, presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem

SOC.2.2.01.053

Uses technology to gather information from various sources and evaluates interpretations of the same event



Lesson Objective

by the end of the lesson, students will

- learn how to present descriptive analysis
- further develop their understanding of descriptive analysis and apply it to learn how to identify patterns and relationships



Key Vocabulary

- univariate:** involving one variate or variable quantity
- bivariate:** involving or depending on two variates
- multivariate:** involving more than two variable quantities
- variables:** an element, feature, or factor that is likely to change.
- categorical:** without any doubt or possibility of being changed.
- characteristics:** a feature or quality belonging typically to a person, place, or thing and serving to identify them.



Lesson 6: Descriptive Analysis Continued

Teacher-ONLY resources:

Links to videos, YouTube, other resources to be used by Teacher's only – The teacher is responsible for pre-viewing any visuals /audios assuring that visual and verbal content is suitable for students.

1. https://www.youtube.com/watch?v=4_9vGqQaCFk
Good short video on using excel for descriptive analysis
2. https://www.youtube.com/watch?v=cHGhSj_Ax-0
Good video for teachers and students (teachers please see the video first to see if it fits with school context) on cleaning the data and getting it ready for analysis.
3. <http://statulator.com/blog/descriptive-analysis-take-it-easy> - nice resources for teachers or students. Teacher can also use this to draw out additional activities if needed.



Materials/
Resources/
Technology

JADID TRADING L.L.C (CONTINUED)

If you were only looking at one variable, such as whether employees had training or not, then this would be univariate. If looking at different variables individually, as you have been doing, this would be called univariate descriptive analysis. However, in order to truly find relationships and patterns within the data, you need to look at them together. When looking at 2 variables together then this becomes Bivariate. When comparing multiple variables then it is called multivariate analysis. At this stage of your study, it is easier to think about them as two different types.

Descriptive analysis for each individual variable

Descriptive analysis for combinations of variables

You have done most of the hard work already in preparing the data and identifying the different variables. At this stage, it is also useful to separate the variables' types into quantitative and categorical. As the name suggests, quantitative variables represent quantities or numerical values. For example, weight, size or height. In this case study, you only

T

Lesson Text

have access to categorical variables, which are represented in qualities or characteristics. For example, joining date, satisfaction with manager, and such.

In the Jadid Trading L.L.C. case study you are trying to work out possible reasons for the poor performance of sales staff in the company. Although you have identified a number of mistakes and drawbacks in the questionnaires and subsequent data set, you still have access to a combination of variables that you can use to find relationships and patterns that might explain the poor performance.

Finding Patterns in Data

Up to now you have been looking at individual variables, but this approach is limited to describing the data. In this lesson of quantitative data analysis, you will learn about combination of variables. This will allow us to find relationships and patterns within the data more clearly. This process also allows the researchers to justify their findings and make recommendations.

From this basic analysis you should have been able to notice that the data and analysis just tells you whether there is a relationship and the type of relationship. It cannot tell you why the relationship is there. The “why” is best answered by using qualitative methods that seek to understand why people behave in the way that they do. This fact marks one of the biggest differences between qualitative and quantitative research. However, you can analyse the data to make predictions and start to form conclusions.



Lesson Description with SLO Tags and Notes

Descriptive analysis continued. This is where students really start to apply data analysis and start process of identifying patterns. Teachers need to guide students through this process. These are very hands on lessons. The students should already know how to apply these basic



Lesson 6: Descriptive Analysis Continued

methods. Therefore, the teacher should encourage students to work through these quickly. Students should be encouraged to integrate visual information (e.g., in charts, graphs) and evaluate multiple sources of Information (SOC.2.1.01.038; SOC.2.1.01.039). It would be good to use excel or other tools to gather information, evaluate and interpret it to make recommendations (SOC.2.2.01.053). Students should be able to make comparisons and start to make conclusions. Students should also be aware of what is expected in the next lesson where they will be expected to write up their results.

Warm up: Mind Map

Draw out a mind of the different variables you can use when trying to find answers to employee performance at Jadid Trading LLC.

Answers will vary

But may include

- Training
- Sales performance
- Satisfaction with work
- Satisfaction with manager

Activity 1: Application

Carry out descriptive analysis for each individual variable.

Reuse the frequency tables you have created in the previous lessons and present them in bar charts and doughnut charts. You have been given an example of each type below. Please complete the remaining questions for the data set.

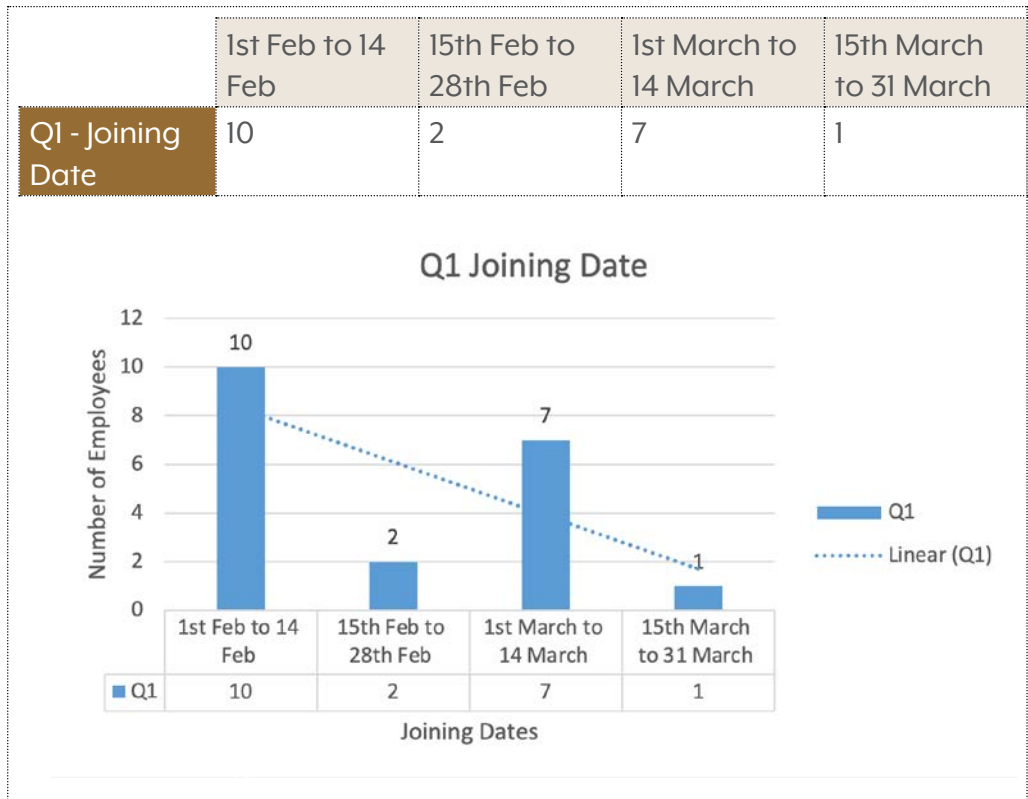


**Selected
Activity
Answers**



**Selected
Activity
Answers**

Q1. Replicate the bar graph below using excel.



Q2. What does the dotted line tell us in this graph?

Downwards trend – showing less and less employees employed since February

Activity 2: Application

Now complete the following exercises for the remaining questions on the questionnaires. Note: Your teacher might give you different types of instructions based on time available and the resources available.

Although it takes time, completing these by hand can be a great learning experience. Remember the main purpose of this exercise is to identify the relationships and patterns that might exist within the data.

Lesson 6: Descriptive Analysis Continued

Replicate the graphs as shown below. Make sure you are able to use the labels in the same way.



Selected Activity Answers

	Sharjah	Dubai
Q2 - Current Branch	8	12

Use this space to write a short description of what the Pie Chart is telling you?

The pie chart displays the distribution of employees between Sharjah and Dubai for the Q2 Current Branch. Sharjah accounts for 8 employees, which is 40% of the total, while Dubai accounts for 12 employees, representing 60% of the total.

	Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
Q3 - Manager Rating in May 2019	4	5	3	3	5

The bar chart illustrates the number of employees for each rating category in Q3. The y-axis represents the number of employees, ranging from 0 to 5. The x-axis lists the rating categories. The data shows 4 employees for Rating 1, 5 for Rating 2, 3 for Rating 3, 3 for Rating 4, and 5 for Rating 5.

	Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
Q3	4	5	3	3	5

Manager Ratings



**Selected
Activity
Answers**

	Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
Q4 - Employee Satisfaction with Manager	2	7	6	3	2



	Not sure	Not Satisfied	Somewhat Satisfied	Satisfied	Very Satisfied
Q5 - Employee Satisfaction with Work Conditions					



All rights reserved. No part of this page may be reproduced, stored in a retrieval system or transmitted in any form or by any means without prior permission in writing of the publisher.

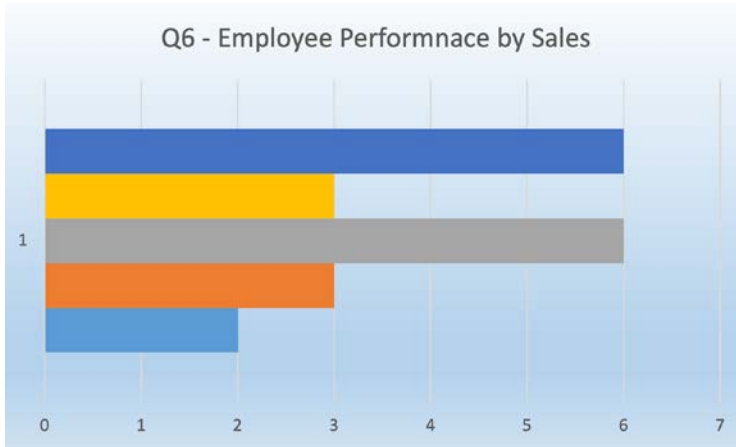
Lesson 6: Descriptive Analysis Continued



Selected Activity Answers

Q6 - Employee Performance by Sales

	Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
Q6 - Employee Performance by Sales					



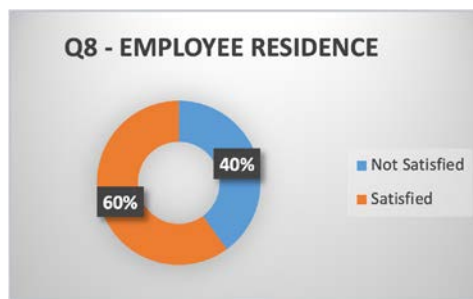
Q7 - Extra Training Received

	No	Yes
Q7 - Extra Training Received		



Q8 - Employee Residence

	Dubai	Sharjah
Q8 - Employee Residence		



Activity 3: Application and Reflection

This example shows 2 variables displayed together. Write your responses in the space provided below.

- What is the pattern?
- What does the trend line tell you?



Selected Activity Answers

a: In general employee satisfaction is linked with employee performance.

b: trend line suggests there is a relationship between employee performance and employee satisfaction. employee performance improves as employee satisfaction improves



Formative Assessment Opportunities

Formative Assessment Opportunities All of the activities serve as formative assessment for the SLO mentioned in the description above.



Remedial Opportunities

Remedial Opportunities Students can integrate English Communication Skills within this lesson. It may also be possible to integrate with Science.



Extension Opportunities

Extension Opportunities Students should be encouraged to explore different types of tables and charts on excel to present data analysis. Compare and contrast quantitative data to find more patterns and relationships.





LESSON 7: INTERVIEWS







Student Learning Outcomes (SLOs)

SOC.2.1.01.035

Carries out a field study on a certain issue or problem, assesses the most significant results and submits them to the officials for beneficial use

SOC.2.1.01.036

Analyses how a text uses structure to emphasize key points or advance an explanation or analysis

SOC.2.1.01.037

Analyses the relationship between a primary and secondary source on the same topic

SOC.1.5.02.040

Decides on valid sources to answer social studies questions



Lesson Objective

By the end of the lesson, students will

- practice collecting and analysing interview data
- apply their knowledge and understand to collect and analysis interview data
- practice how to present interview and qualitative data in general







Key Vocabulary

- Semi-structured:** Interview is a meeting in which the interviewer does not strictly follow a formalized list of questions.
- Perceptions:** A belief or opinion, often held by many people and based on how things seem.
- Attitudes:** how a person thinks or feels about something
- Narrative:** a person's view of events or story of connected events
- Conversation:** (a) talk between two or more people in which thoughts, feelings, and ideas are expressed, questions are asked and answered, or news and information is exchanged



Lesson 7: Interviews

-  **Body language:** the movements or positions of your body that show other people how you are feeling, without using words
-  **Consent:** Permission for something to happen or agreement to do something
-  **Transcript:** is a written record of a completed oral interview or conversation
-  **Transcribe:** put thoughts, speech, or data into written or printed form

Teacher-ONLY resources:

Links to videos, YouTube, other resources to be used by Teacher's only
– The teacher is responsible for pre-viewing any visuals /audios that are assigned to students:

<https://humansofdata.atlan.com/2017/08/4-data-collection-techniques-ones-right/>

<https://www.questionpro.com/blog/data-collection/>

Both of these are good for techniques



**Materials/
Resources/
Technology**

INTERVIEWS



Lesson Text

Your main task in this lesson is to create a semi-structured interview to find out about the birthday or any other special celebration experiences of people in your class. Of course, there are other types of interviews available, but given the short space of time this is an appropriate data collection technique.

Semi-structured Interviews will enable you to collect focused and relevant information quickly. These types of interviews give you the balance of control between asking informal open-ended questions and the focus of

T

Lesson Text

a more structured interview. These interviews enable the researcher to gather opinions, perceptions, attitudes, and the reasons behind them. In this case, you will mainly use descriptive questions to develop a narrative.

How-to guide: Before the interview	
Develop questions	<p>Make sure you use open-ended questions</p> <p>Avoid biases, so don't ask questions that are leading</p> <p>Be precise and ask short questions that are specific and easy to understand. For the same reason do not ask double questions or 2-in-1 questions.</p> <p>Language is very important. Keep it simple and be aware of social cultural context.</p>
Make a plan of how and when you will ask them. You need to have some sort of structure.	<p>Make sure you have space to record these items:</p> <p>Responses (answers) from the interviewees.</p> <p>Demographic information about the interviewee.</p> <p>Your own notes above observations you make during the interview. Example: were there occasions when the interviewee looks more-or-less upset.</p> <p>Order Questions carefully</p> <p>Start with an icebreaker or a question not related to the interview to make the interviewee feel comfortable</p> <p>Start by asking about simple things and then move more complex questions</p> <p>Make sure you group questions according to topic.</p> <p>Start with questions that can easily be categorised or listed, for example, good vs bad. Then move on to more abstract, for example, why was it good? How did it make you feel?</p>

All rights reserved. No part of this page may be reproduced, stored in a retrieval system or transmitted in any form or by any means without prior permission in writing of the publisher.

T

Lesson Text

<p>Be prepared!</p>	<p>If you have a recording device (should use it) make sure it is charged. Be care with using mobile phones as recording devices as they can distract.</p> <p>Make sure your questions make sense to you (practice)</p> <p>In most cases of formal research, you will need additional documents like consent forms, approvals and so on. Make sure you have these in place before the interviews.</p>
---------------------	---

How to guide: During the Interview	
<p>Starting the Interview</p>	<p>Make sure you introduce yourself and the purpose of the interview.</p> <p>Ask a question that makes both of you feel more comfortable and gets the conversation started (Ice Breaker). For example, have you been interviewed before?</p>
<p>Personal conduct and body language</p>	<p>Make sure you remain professional throughout the interview.</p> <p>Your personal behaviour and body language play a big part in the interview and reduce chances of bias actions.</p> <p>Ask questions in a clear tone of voice and be confident</p> <p>Dress appropriately. Sometimes it helps to be dressed in a similar attire to the interviewee. For example, casual wear if the interviewee is also wearing casual. But on other occasions, especially when you are representing another organisation as the interviewer, professional attire is more appropriate.</p>

T

Lesson Text

<p>Plan ahead and be prepared</p>	<p>If there are forms or documents that need to be completed before the interview, make sure you bring them. Sometimes information about the research or consent forms are also required.</p> <p>Think about what the interviewee may ask you and be prepared to answer the questions.</p> <p>Practice asking the questions.</p> <p>If you have recording equipment, make sure it works.</p>
<p>Recording responses and Controlling the flow</p>	<p>It is good practice to make summary notes of everything said. Even if you are recording.</p> <p>It is also good practice to note down some key quotes, exactly as the interviewee said it.</p> <p>Sometimes the interviewees go off on a different direction. You must be able to politely bring them back on track. You can quite simply say “can we come back to....”</p> <p>If you think you have enough information and want to move on. Make sure you do have the right understanding and then say, “thank you I think I understand (interviewer summaries their understanding) I would now like to ask....”</p>
<p>Ending and after</p>	<p>At the end remember to thank the interviewee and ask whether they have questions.</p> <p>In academic research, the typed transcript is sometimes shared with the interviewee to make sure the information collected is accurate.</p>

All rights reserved. No part of this page may be reproduced, stored in a retrieval system or transmitted in any form or by any means without prior permission in writing of the publisher.

Presenting Interview Data

The whole process of analysing interview data requires a lot of personal involvement and interpretation from the interviewers. Now that you have transcribed the interview and made a note of your first impressions, you



Lesson 7: Interviews

need to read through the transcript again thoroughly. You will be using this transcript at different stages, so make sure you have done a good job. Follow the steps outlines below in activities to complete this process. Once complete, you can choose to use this as the end-of-term project. So, it is important you follow the steps carefully. In the end-of-year project, this analysis can be presented as a conceptual diagram or a narrative story on a poster.

Note to students: How do you decide something is relevant in the transcript?

Well it might be that the interviewee repeated the information again and again. It might also be something you did not expect to hear, a surprise. Sometimes these lightbulb moments are most important. It could also be that the interviewee explicitly said “this is important” or you have read about it and know it in your secondary or background research and know it is relevant. Whatever the reasons, it is important at this stage to keep an open mind and not worry about having too many codes. Create as many as you think you can see.

Assuming that there are 2 periods assigned per week, teacher can go over the lesson activities as sequenced in the student book. Students can do the discussions with their classmates or someone in their community. Teachers can make their own lessons plans for this lesson to suit student or school needs. The main aim of this lesson is to get students to understand how interviews can be used to investigate various public issues related to social studies (SOC.1.5.02.029; SOC.2.1.01.035; SOC.2.1.01.036). Teachers should also instil the importance of using valid sources or participant to answer interview questions (SOC.2.1.01.037; SOC.1.5.02.040).

Warm up: Brain Game

Think of an interviewer that you know or have seen on television. What skills do you think a good interviewer has? Discuss with your partner and write your answers in the space below.

Answers will vary.

T

Lesson Text



Lesson Description with SLO Tags and Notes



Selected Activity Answers



**Selected
Activity
Answers**

Activity 2: Application

Birthdays were the worst days!

You are researching bad birthday or special celebration experiences of peers in your class. You want to be able to understand which celebrations were the worse and what turned them into bad experiences. So, consider asking about the factors that turned the Birthday into bad experiences, and why these factors effected the interviewees negatively, and how they felt during and after the celebration. You may also ask about other factors that might have led to the bad experience. Remember this is a semi-structured interview so you need to be ready for follow-up questions and at times let the interviewee explore their responses.

Task Brief (You have 20 minutes for this task)

You need to write out 3-5 questions that will give you an understanding of this issue.

Plan for a 10-minute interview. Your teacher will give you a template to follow.

Make sure you are prepared to collect the information. Make a template before the start of the interview.

When planning for the interview, follow the key steps outlined in the How-to Guide. Remember to start with specific questions, and then move to more complex questions.

Review and compare the questions with the person sitting next to you. Are they fit for purpose?

Answers will vary

Activity 3: Application

Interviewing people you already know is not easy. What can you do to minimise bias and remain professional?

Answers will vary



Activity 4: Application

Birthdays were the worse days! (Continued)

You are ready to conduct the interview. This is a short interview so you have to get to the heart of the matter as quickly as possible, while giving the interviewee enough time to think and reflect about their experiences. This will not be easy. Therefore, it is important to remain professional and focused.

Task Brief (You have 20 minutes for this task)

Pair up with another student in the class. This should not be the same person you reviewed the questions with. Ideally this should be someone you don't sit with usually.

Both of you interview each other, this cannot last longer than 10 minutes each way.

As the interviewer, you need to be recording key information on the template you have prepared.

Answers will vary

Activity 5: Application

Step 1: Codes

Once you have read through the transcript again you can start the coding process. You can name these codes or simply use different colour highlighters to differentiate between them.

The codes can be based on relevant words, phrases, sentences or sections.

When deciding on different codes, think about actions, activities, concepts, differences, opinions, processes, or relevance to the research?

Answers will vary



**Selected
Activity
Answers**

Activity 6: Application

Step 2: Categories / Themes

After creating codes, you now need to start looking for the most relevant ones. At this stage you need to start focusing on the ones that stand out.

Combine codes that go together. Drop the ones that you feel are less relevant. Start grouping them according to how you see their importance or suitability. These groups are basically categories or themes. Label these categories by giving them appropriate names.

Answers will vary

Bad celebration / Worst celebration

Factors leading to Bad celebration / Reasons

Personal Feelings / Reactions / outcomes



Formative Assessment Opportunities

Formative assessment is by:

- Completing the student activities
- Completing concept check after text
- Engaging in discussions



Remedial Opportunities

Strategies to support struggling students include:

- Language support
- Peer to peer tutoring
- Writing centre support if the school has one



Extension Opportunities

Students search for sample surveys and take at least 2 surveys to see how they are done. Then students as a whole class come up with a guide that describes the characteristics of a good survey.





Notes





LESSON 8: EXPERIMENTS







Student Learning Outcomes (SLOs)

SOC.1.5.02.029

Uses the scientific research methodology to solve investigate various public issues related to social studies



Lesson Objective

By the end of the lesson, students will

- practice setting up and conducting a simple experiment
-



Key Vocabulary

Hypotheses: A proposed explanation made on the basis of limited evidence as a starting point for further investigation.

Scientific method: a systematic observation, measurement, and experiment, and the formulation, testing, and modification of hypotheses

Social science: Social sciences are a group of academic disciplines dedicated to examining society.

Natural science: Concerned with the description, prediction, and understanding of natural phenomena.

Human interactions: Humans interact with the environment in a variety of ways.

Phenomenon: A fact or situation that is observed to exist or happen



Materials/ Resources/ Technology

Teacher-ONLY resources:

Links to videos, YouTube, other resources to be used by Teacher's only
– The teacher is responsible for pre-viewing any visuals /audios that are



assigned to students:

1. <https://www.sciencebuddies.org/science-fair-projects/science-fair/data-analysis-graphs>
2. <https://www.visionlearning.com/en/library/Process-of-Science/49/Data-Analysis-and-Interpretation/154>
3. <http://www.longwood.edu/cleanva/images/sec6.analyzedata.pdf>

All of these are useful background recourses for teachers and students.



**Materials/
Resources/
Technology**

EXPERIMENTS

Experiments in social science and natural science are not the same. In the natural sciences, we can control the environment and therefore the different variables. For example, if you wanted to see how fast an apple drops from a certain height, you could control the size and weight of the apple, the height and so on. However, in social experiments, which often researches human interactions, it is not possible to control different variables. In fact, at times it should not even try to control them because the object is to study the behaviour or the phenomenon in its natural setting.

How can you collect and present data from scientific experiments? You have done substantial work on the scientific method already. In this lesson, you will focus on collecting and presenting data from an experiment. As social scientist you still need to have a sound understanding of both these elements. The experiment of on the next page is a science experiment (not a social science). Complete the experiment on the next page, make sure you are prepared as there are time constraints with each step.



Lesson Text

DEPENDENT AND INDEPENDENT VARIABLES

As you have probably worked out, the experiment is all about air pressure

and thrust. As air comes out of the balloon, it pushes the balloon forward. This forward motion is called thrust. But, in this experiment, you are less concerned with the science, and more interested in collecting, analysing and presenting the data. From a research perspective, it is important to understand which factors are being studied. The variables you can change, in this case the amount of air in the balloon, is called the independent variable. The result or the variable affected by your actions is called the dependent variable. In this case, it was the how far the balloon was able to travel. At this stage of your study, this basic understanding of dependent and independent variables is enough. to The focus in this lesson is on analysing these results.

WRITING UP EXPERIMENTS AND SHARING FINDINGS

Once you are done with the experiment and your analyses, you need to present the results in a way that is appropriate to the method you are using. In experiments, results are expected to be presented in a report format. Once the report is written, scientists often use posters and power points to present to an audience. The posters, by themselves, or together with power points, are used to make the findings accessible to a wider audience. As you can imagine, some people may not want to read a lengthy report. So, posters and power points break down and summarise the information. This lesson focuses on constructing the report that provides a detailed account of the whole experiment and not just the findings.

You have completed the first few steps required to produce the report. For example, you have already decided on the type of table and graph you will use. You will now look at the main components of the report and write draw them out over the next few activities. By the end of this lesson you would have written up the report. You can then use this part of the unit (experiments) to further develop and use for your end of year project.

Lesson 8: Experiments

This has to be a fast-paced lesson. There are different stages students will have to go through therefore an emphasis on time and student focus is crucial.

Teacher should confirm students are prepared and set-up the experiment properly. Students should be ready to conduct the experiment in the next lesson.

Students should be encouraged to compare and contrast this process with social research (SOC.1.5.02.029). Students can integrate English Communication Skills within this lesson. It may also be possible to integrate with Science and link with designing experiments in their science classes. Teacher can integrate with Mathematics by incorporating examples of statistical data.



**Lesson
Description
with SLO
Tags and
Notes**

Warm up: Brainstorm

In the space below brainstorm the important things you remember about the scientific method. Answers will vary – but may include

- Steps in the Scientific methods
- Provides objectivity
- Used to prove / disprove

Activity 1: Application

Experiments (small groups of 3-4)

Spaceship

To complete this experiment, you will need the following resources

1 medium sized balloon – any shape is ok

1 long piece of strong string. Nylon strings are better, but any strong string will do. (about 3-5 meters)

1 good plastic straw. Should easily fit over the string.



**Selected
Activity
Answers**



Selected Activity Answers

Some tape and a felt-tip marker

Pen and Paper to record the results. You can also record straight onto the laptop or computer. If possible, you can also film or photograph the experiment

Task Brief (You have 15 minutes for this task)

Prepare

Use the string first, and tie one end to something that will not move easily. This can be a table leg, chair, or anything like that.

Feed the straw through the other end of the string. Now tie the remaining end to something that will not move easily. This can be a table leg, chair, etc. Make sure the string is tight.

Use the balloon and blow air into it until you feel it has enough. Do not blow too much air into the balloon, but enough so it can travel. Do not tie the balloon, instead keep it pinched. Draw a line next to where you have pinched the balloon and write air level 1.

Use the tape, and stick the balloon to the straw. See picture above.

Hypotheses: Outline what you expect to happen when you carry out this experiment?

Answers will vary

Activity 2: Application

Experiment (you have 15 minutes for this task)

Conduct experiment: Your main objective is to measure how far the balloon rocket travels

Once everything is ready, let go of the balloon!

How far did it travel? Make sure you are recording this information. Repeat this at different air levels 6 more times. Increase the amount of air at every trial.

Draw a line next to where you have pinched the balloon and write air level



2. Once everything is ready, let go of the balloon! How far did it travel? Make sure you are recording this information. Repeat this at the same air level 2 more times.



Selected Activity Answers

Activity 3: Concept Check

Review the data you have recorded.

Turn these into tables. You can use the template provided below to show distance travelled in centimetres.

Answers will vary

Activity 4: Concept Check

Go back to the experiment in the last lesson.

Q1. What were you changing in the experiment?

Air level

Q2. What result were you looking for?

How far did it travel

Activity 5: Application and Reflection

Use the data table to make a lined graph on Excel. Make sure it is properly labelled. After completing the task discuss what do you see happening in the line graph?

Answers will vary

Activity 8: Application

Complete Descriptive Summaries.

Answers will vary

In this activity you will be working on developing and summarising data tables. Use the main data collected, and work completed in unit



Selected Activity Answers

1 to develop summary tables. You may want to separate the data. For example, look at the air levels and distance travelled separately. Develop these on excel so you can easily present the information in graphs.

Q1. Calculate the mean and median values.

Q2. Calculate the range and frequency distribution.

Q3. Provide a short description and relevance of each calculation

Q4. Provide a short summary of the relationship between the depended and independent variable.

These tasks should be done as one section. You have already completed similar exercise in earlier lessons. Apply your knowledge and understanding from those lessons to work on this task independently.

Activity 9: Application and Reflection

Write a Conclusion. Answers will vary

Even the simplest written conclusion for an experiment is much more than a summary of what happened. You need to think and reflect on the whole journey. You can answer the questions below individually, but then write them out as one main section together.

Q1. What was the purpose of this experiment?

Q2. Describe your major findings?

Q3. Do the findings support your original hypothesis?

Q4. Do the findings fall within existing knowledge? Here you should find similar studies or information on motion (Air Pressure and Thrust) and use them as references to support your experiment.

References:

Q5. Provide your own opinion and explanation of the findings.

Q6. Which other factors would you include if you were doing a more comprehensive version of the same experiment?



Activity 10: Application

Answers will vary
Top and Tail it!

You are nearly there. Now you need to make sure the report has been formatted to an appropriate standard.

You must provide a short introduction and a section for references.

It is also important to provide a table of contents and figures.

Provide a short section on experiment designs and hypotheses. Most of this work has already been completed for you. You just need to pull it together into one comprehensive report.

Use the work completed in previous terms to decide on an appropriate format.

Formative assessment is by:

- Completing the student activities
- Completing concept check after text
- Engaging in discussions

Strategies to support struggling students include:

- Language support
- Peer to peer tutoring
- Writing centre support if the school has one

Extension Opportunities Teacher can incorporate examples of statistical data. Resources allowing, students can also set-up additional experiments. For example, make a balloon powered car.



**Selected
Activity
Answers**



**Formative
Assessment
Opportunities**



**Remedial
Opportunities**



**Extension
Opportunities**



**LESSON 9: TERM
PROJECT - COVID-19**





Student Learning Outcomes (SLOs)

SOC.1.5.02.029

Uses the scientific research methodology to solve investigate various public issues related to social studies

SOC.2.1.01.033

Presents a detailed and accurate report on a certain problem highlighting the research methodology used to solve the problem

SOC.2.2.01.053

Uses technology to gather information from various sources and evaluates interpretations of the same event

SOC.2.1.01.035

Carries out a field study on a certain issue or problem, assesses the most significant results and submits them to the officials for beneficial use

SOC.2.1.01.038

Integrates visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts






SOC.2.1.01.042

Prepares an oral presentation on social studies topics and shows findings with supporting evidence








Lesson Objective

By the end of the project, students will

-  demonstrate and test their abilities and knowledge of collecting, analysing and presenting research data in different context
-  have a developing sense of belonging to a common humanity, sharing values and responsibilities
-  develop and apply values, attitudes and skills to manage and engage with diverse groups and perspectives
-  understand responsibility at local, national and global levels for a more peaceful and sustainable world
-  participate in, and contribute to, contemporary global issues at local, national and global levels as informed, engaged, responsible and responsive global citizens



Lesson 9: Term Project - COVID-19

-  **Hypothesis:** a proposed explanation made on the basis of limited evidence as a starting point for further investigation.
-  **Research Methodology:** methods are either qualitative, quantitative or a mix of both.
-  **Recommendations:** a suggestion or proposal as to the best course of action, especially one put forward by an authoritative body.
-  **Implications:** the conclusion that can be drawn from something although it is not explicitly stated.
-  **Literature Review:** background research of previous studies on the topic



Key Vocabulary

Short video on how to write good questions

<https://humansofdata.atlan.com/2017/08/4-data-collection-techniques-ones-right/>

<https://www.questionpro.com/blog/data-collection/>

These two pages can also be used as background or for teachers to adopt for additional activities

Both of these should be teacher resource only

1. https://saylordotorg.github.io/text_principles-of-sociological-inquiry-qualitative-and-quantitative-methods/s10-03-sampling-in-quantitative-resea.html
Detailed page which can be used as background by teacher
2. <https://www.posterpresentations.com/free-poster-templates.html>

For additional poster templates.



Materials/ Resources/ Technology

T

Lesson Text

PROJECT DESCRIPTION:

In this term, you have completed 3 major exercises that have required the collection and analysis of research. At times, you have also taken steps to present this research in the form of a report. The end of term project requires you to apply the knowledge you gained from these mini-projects and explore the impact of COVID-19 at the local, national and global level. In small groups of 3 to 5, you will produce a short power point presentation to share your findings. Detailed guidelines are provided below. If your class has completed exercises alongside other subjects, then your teacher may ask you to present this as an integrated project. Your research task is to explore the impact of COVID-19 on education and learning at the local, national and global level.

5. Outline the general impact of COVID-19 on education and learning at the local, national and global level.
6. How did your school manage expectations of different stakeholder? For example, students, parents, teacher, owners and the Government.
7. Which values, attitudes and skills were important to manage and engage with these stakeholders?
8. As global citizens which responsible actions were undertaken by students during the pandemic? Use examples from your school, nationally and globally.
9. If the global community was facing a similar situation again. What are some of the best examples at the local, national and global level that would ensure a more peaceful and sustainable world.

Project Steps:

The main research question has four distinct sub-questions. Please note sub-questions 2 and 3 are covering the same topic area. The first step would be to form groups and divide the topics between group members. You can use the action plan template provided below to share responsibilities and plan completion.

Lesson 9: Term Project - COVID-19

T

Lesson Text

Actions	Sub-tasks	Person (s) responsible	Key Dates
Define the research topic Outline possible secondary sources and literature review			
Define initial Problem statement Outline research question/s			
Identify appropriate types of research to answer the main and sub-questions			
Identify suitable Research methods to answer the main and sub-questions What types of Data will you collect			
Which Data collection techniques will you use			
What sampling strategies will you use			

Once students have conducted the research and analysed the data. They should report findings in the form of a short 5-7-minute presentation to the class.

Note to teachers: This element of the project is heavily dependent on the student and school context, availability of resources and access. It is up to teachers whether they want to include the PowerPoint in the grading

criteria or just the presentation. Similarly, the rubric may also include weighting for visual aids and overall quality of presentation. In cases where this project is being combined with other courses or projects then there is also flexibility regarding presentation tools and integration of additional criteria.



Lesson Description with SLO Tags and Notes

The end of semester project is geared to consolidate student learning from throughout the semester. Students are well supported with a step by step guide. Teachers are encouraged to use, adapt or discard these supports depending on students and school context. An obvious enhancement will be the requirement of office tools to complete, submit and present the project (SOC.2.2.01.053, SOC.2.1.01.042, SOC.2.1.01.038). Student need to conduct actual research that can potentially inform policy (SOC.2.1.01.035). Student need to demonstrate a clear understanding of choosing an appropriate research topic and deciding on an effective research design. Students will also need to outline a plan of how they will complete this project. Detailed notes and guidelines have been provided to students (SOC.1.5.02.029; SOC.2.1.01.033).



Selected Activity Answers

Detailed instructions provided in project brief.



Formative Assessment Opportunities

All of the lessons in this book serve as formative assessment for the SLO mentioned within the lesson. This end of year project serves at a summative assessment. However, different components can be broken down and used as formative assessments.



Extension Opportunities

There are opportunities to integrate this project with other course projects. Student may also use this project as a showcase for an end of semester event at the school.



The background features a stack of papers with various colored tabs (green, yellow, pink, blue) and a large, irregular brown silhouette overlay. The text is centered within this silhouette.



LESSON 10: FINAL REVIEW






Lesson Objective:

By the end of the lesson, students will:

-  check their understanding of lessons six through eight.
-  reflect on areas for improvement.



Key Vocabulary

-  Review keywords for lessons six through eight.

Important Note: The activities provided below serve as a review and do not represent the full scope of materials for the final examination. In order to succeed in the final examination students should ensure they have a sound understanding of key concepts in all in Lessons.

How does descriptive analysis for each individual combinations of variables differ?

Identify at least 3 benefits of Research

1. _____
2. _____
3. _____
4. _____

Tick the appropriate box to indicate whether you agree or disagree with statements below.

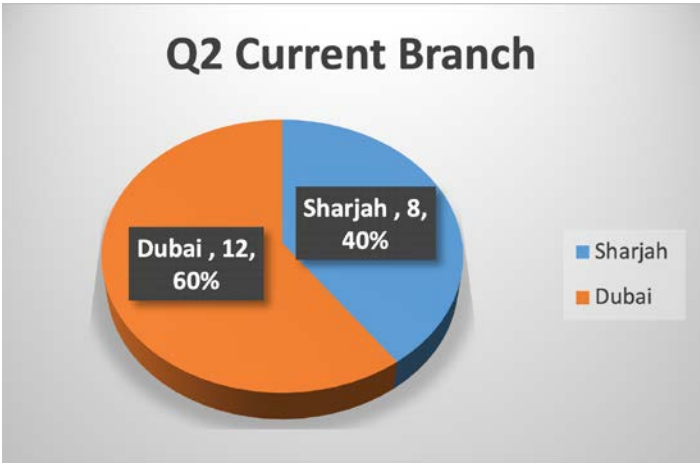
Statements	Agree	Disagree
Accurate predictions about the number of beds can help the hospital order the right amount of beds?		
Accurate predictions about the number of beds can help the hospital serve patients better?		
Accurate predictions about the number of beds can help the hospital advertise?		

Replicate the graphs below on an excel sheet. Make sure you are able to use the labels in the same way.

All rights reserved. No part of this page may be reproduced, stored in a retrieval system or transmitted in any form or by any means without prior permission in writing of the publisher.

	Sharjah	Dubai
Q2 - Current Branch	8	12

Use this space to write a short description of what the Pie Chart is telling you?



	Rating 1	Rating 2	Rating 3	Rating 4	Rating 5
Q3 - Manager Rating in May 2019	4	5	3	3	5



Review the “How to guides” in lesson 7 that outline what to do before and during the interview. Highlight the most important actions in each guide.

Using the space below explain the key difference a research needs to consider before and after the interview.

Using the experiment you completed in lesson 8. Describe what do you see happening between the independent (amount of air) and dependent variables (travel distance). What is the relationship between the two variables?



Notes





GLOSSARY



KEYWORD

abstract

action plan

analysis

annotation

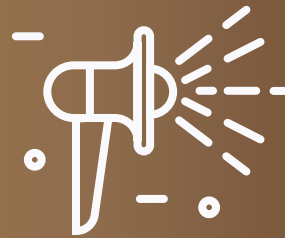
appendices

attributes

attitudes

assumptions

authentic



MEANING

a summary of the contents of a book, article, or speech.

a proposed strategy or course of action.

detailed examination of the elements or structure of something

a note by way of explanation or comment added to a text or diagram.

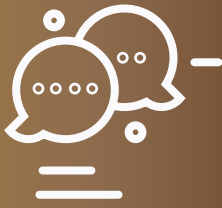
a section or table of subsidiary matter at the end of a book or document.

a section or table of subsidiary matter at the end of a book or document

how a person thinks or feels about something

something that is accepted as true or as certain to happen, without proof

when something is undisputed and genuine



KEYWORD

background research

bibliography

categorical questions

characteristics

cluster sampling

components

consistent



MEANING

also called secondary research and literature review. it is the first research the researcher does to learn about the topic selected for research

a systematic description of books, their authorship, printing, publication, editions

questions that often have an accompanying list of categories or alternative responses

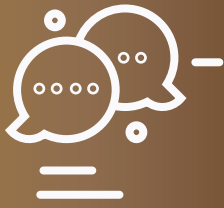
a feature or quality belonging typically to a person, place, or thing and serving to identify them.

a probability sampling technique where researchers divide the population into multiple groups

a part or element of a larger whole

doing something in the same way over time, especially so as to be fair or accurate





KEYWORD

convenience sampling

correlation

copyrighted

data collection

deadlines

deductive

descriptive

disaggregation



MEANING

a type of non-probability sampling method where the sample is taken from a group of people easy to contact

a mutual relationship or connection between two or more things

when someone's idea or an author's work is legally protected by law and others cannot use without permission

the process of gathering and measuring information on targeted variables

project targets that are set in the research schedule

related to using principles of logic to figure something out

describing or classifying in an object, situation or sample

the act of separating something (a sample) from the whole



KEYWORD

encyclopaedias

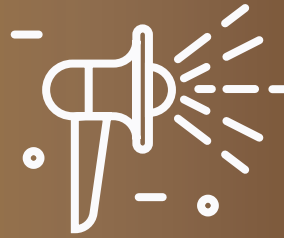
ethics

evidence

evaluate

examine

experimentation



MEANING

a book or set of books giving information on many subjects or on many aspects of one subject and typically arranged alphabetically

principles of moral behaviour and practice that should be planned in any research project

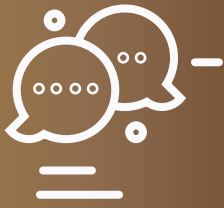
the available body of facts or information indicating whether a belief or proposition is true or valid

making a judgment, one that most likely results from some degree of analysis

to study something carefully in order to understand it

when a test is designed to examine variables that are actively manipulated, controlled, and measured in an effort to gather evidence to support or refute a claim





KEYWORD

exploratory

expressions

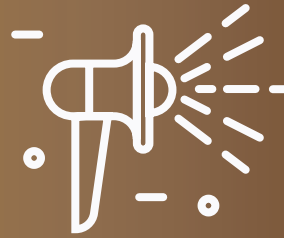
framework

frequency

hypothesis

implications of research

bivariate



MEANING

relating to or involving exploration or investigation.

the body language or action of making known your thoughts or feelings

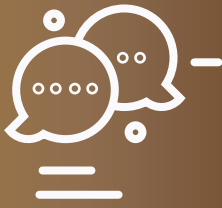
a basic structure underlying a system, concept, or text

the rate at which something occurs over a particular period of time or in a given sample

a proposed explanation made on the basis of limited evidence as a starting point for further investigation.

another common term used for implications is significance. this section in research would describe what impact your research might have on policy, future research

involving or depending on two variates



KEYWORD

inductive

inquiry

interpret

interrelationships

interval questions

investigate

irrelevant

iterative process



MEANING

using a particular set of facts or ideas to form a general principle

an act of asking for information and/or official investigation

to explain the meaning of information or actions

the way in which each of two or more things is related to the other or others

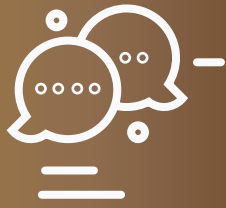
these questions measures variables that exist along a common scale at equal intervals

to carry out a systematic or formal inquiry to discover and examine the facts

something not connected with or relevant to something

re-repeating something with slight improvements in the process until the desired result is achieved





KEYWORD

literature review

measurement

methodical

mixed methods

multivariate

narrative

nominal number

non-probability
sampling



MEANING

background research of previous studies
on the topic

the size, length, or amount of something,
as established by measuring

doing something according to a
systematic or established procedure

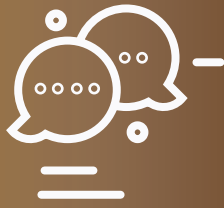
a research study that uses both
quantitative and qualitative methods

involving more than two variable
quantities

a person's view of events or story of
connected events

a number used only as a name, or to
identify something

non-probability sampling is a sampling
technique where the odds of any member
being selected for a sample cannot be
calculated



KEYWORD

neutral

objectives

omission

ordinal numbers

participants

perceived

percent distributions

plagiarism

phenomenon



MEANING

impartial or unbiased

aims of a research project

to leave out something

a number defining the position of something in a series, such as 'first', 'second', or 'third'

a person who takes part in something

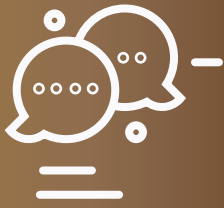
to come to an opinion about something, or have a belief about something

a frequency distribution in which the individual class frequencies are expressed as a percentage of the total frequency equated to 100

cheating in academic work by copying and not giving reference to work cited and used as one's own

a fact or situation that is observed to exist or happen





KEYWORD

prediction

primary research

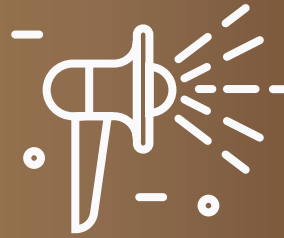
primary sources

qualitative

quantitative

random

references



MEANING

when someone says a thing with happen, or a forecast

a type of research where researchers to collect data directly

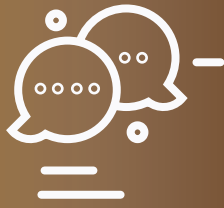
primary sources are immediate, first-hand accounts of a topic, from people who had a direct connection with it

research that is based on non-numerical data where the researcher is exploring in depth the opinions and experiences of the study participants

research that is based on numerical data where the researcher is interested in how many and how often a phenomenon happens

something made, done, or happening without method or conscious decision

sources used in the research



KEYWORD

realistic

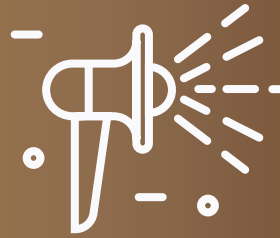
referencing

reliability

replicate

representative sample

research context



MEANING

a sensible and practical idea of what can be achieved

also known as referencing format or style which refers to the format of writing, citation, and research paper formatting required. common referencing formats are apa, mla, harvard, chicago, etc

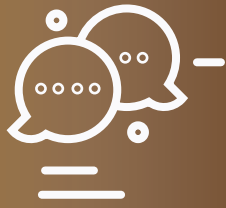
related to how confident a qualitative researcher is in the truth of research findings

to make an exact copy or to reproduce something

a subset of a population that seeks to accurately reflect the characteristics of the larger group.

researcher provides background details about the setting of the research study assuming that the reader is not knowledgeable about the local setting





KEYWORD

research design

research methodology

research process

research proposal

respondents

review of literature

sampling



MEANING

the strategy a researcher decides to use to collect data. this could include interviews, surveys, experiments, etc.

methods are either qualitative, quantitative or a mix of both

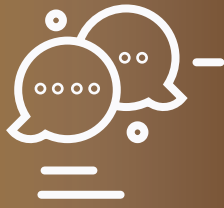
the research process involves identifying, locating, assessing, and analysing the information you need to support your research question

a summary paper for a proposed or suggested research project that needs approval before starting the research project

a person who replies, supplies information

background research about a topic

selecting a portion of the population, in your research area, which will be a representation of the whole population



KEYWORD

scaled questionnaire

scientific method

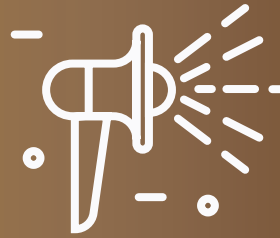
secondary research

secondary sources

society

social institutions

social research



MEANING

questions that have a predefined answer list with options that are incrementally related to each other

a systematic observation, measurement, and experiment, and the formulation, testing, and modification of hypotheses

literature review or background research

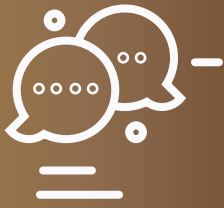
secondary sources were created by someone who did not experience first-hand or participate in the events or conditions you're researching.

an organised group of people living together in an ordered community.

important organisations or services, such as education or healthcare | that make up a society

a method used by social scientists and researchers to learn about people and societies





KEYWORD

social responsibility

social science

stakeholders

systematically

tabulation

theoretical

transcribe

unbiased



MEANING

is a concept that say every person or organization has an responsibility to act for the benefit of society

the scientific study of human society and social relationships

any person or entity that has an interest or effected by an issue

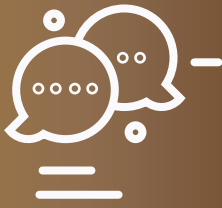
doing something according to a fixed plan or system; methodically.

to arrange information is to organize it into a table

the theory of a subject or area of study rather than its practical application

put thoughts, speech, or data into written or printed form

showing no prejudice or favouritism for or against something; being impartial



KEYWORD

scaled questionnaire

scientific method

secondary research

secondary sources

society

social institutions

social research



MEANING

questions that have a predefined answer list with options that are incrementally related to each other

a systematic observation, measurement, and experiment, and the formulation, testing, and modification of hypotheses

literature review or background research

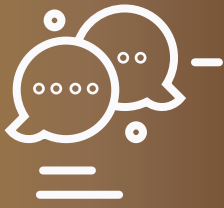
secondary sources were created by someone who did not experience first-hand or participate in the events or conditions you're researching.

an organised group of people living together in an ordered community.

important organisations or services, such as education or healthcare | that make up a society

a method used by social scientists and researchers to learn about people and societies





KEYWORD

social responsibility

social science

stakeholders

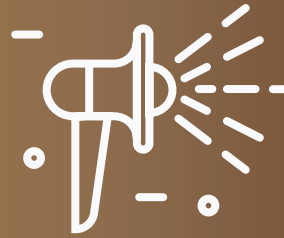
systematically

tabulation

theoretical

transcribe

unbiased



MEANING

is a concept that say every person or organization has an responsibility to act for the benefit of society

the scientific study of human society and social relationships

any person or entity that has an interest or effected by an issue

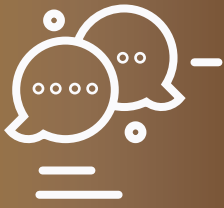
doing something according to a fixed plan or system; methodically.

to arrange information is to organize it into a table

the theory of a subject or area of study rather than its practical application

put thoughts, speech, or data into written or printed form

showing no prejudice or favouritism for or against something; being impartial



KEYWORD

unconscious

univariate

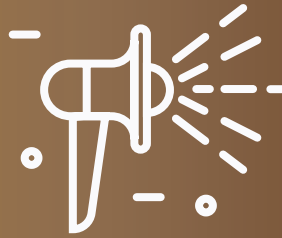
unravel

unstructured interview

variables

validity

voluntary



MEANING

an action that is done or existing without one realizing

involving one variate or variable quantity

to undo or investigate and solve or explain something complicated or puzzling

an interview in which there is no specific set of predetermined questions

an element, feature, or factor that is likely to change.

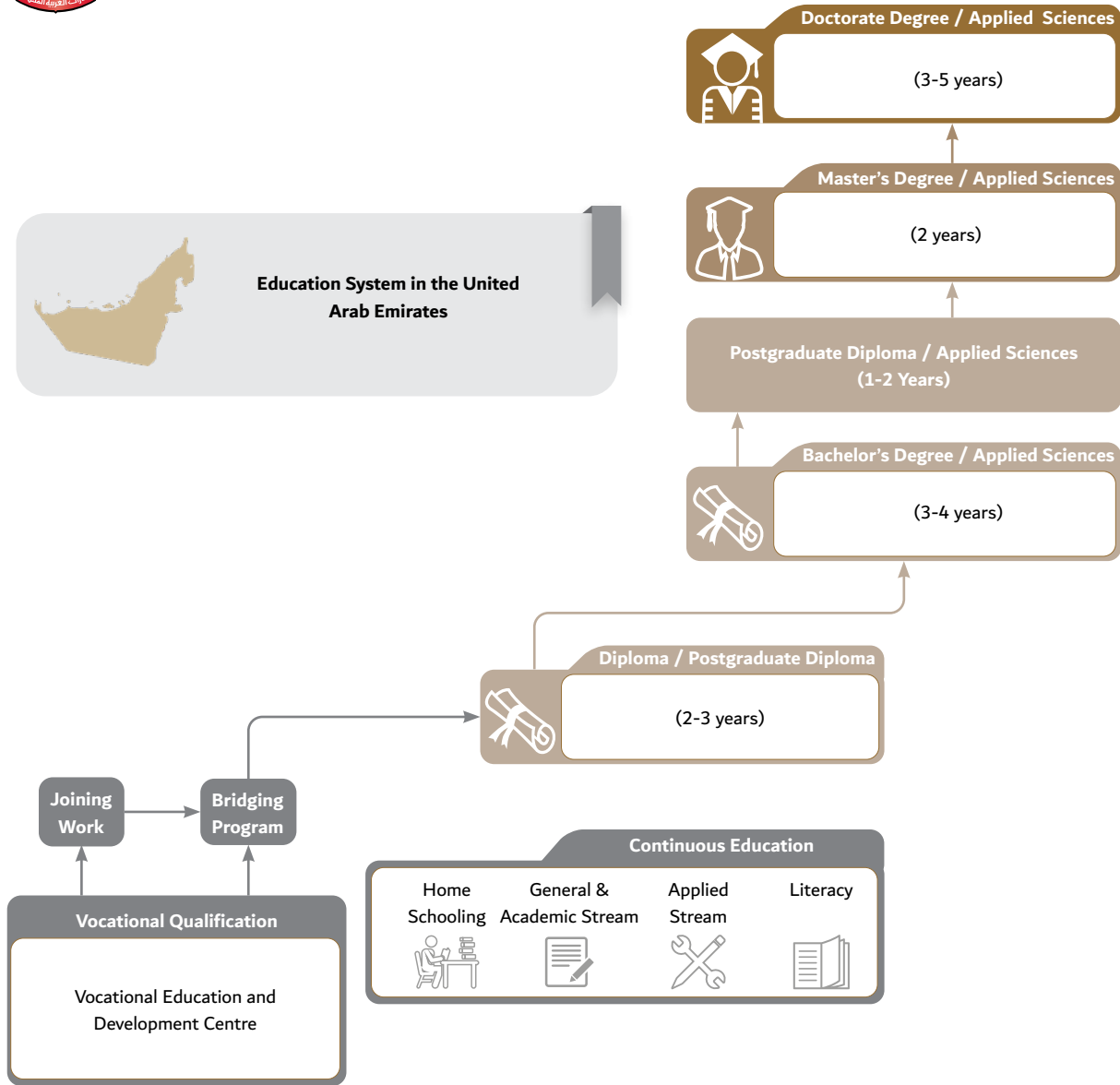
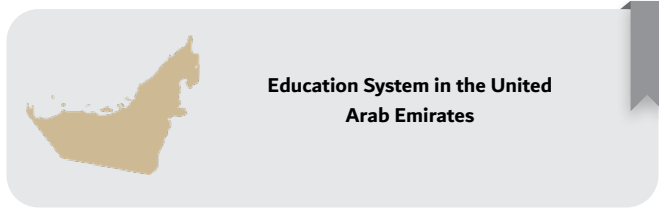
the quality of being logically or factually accurate

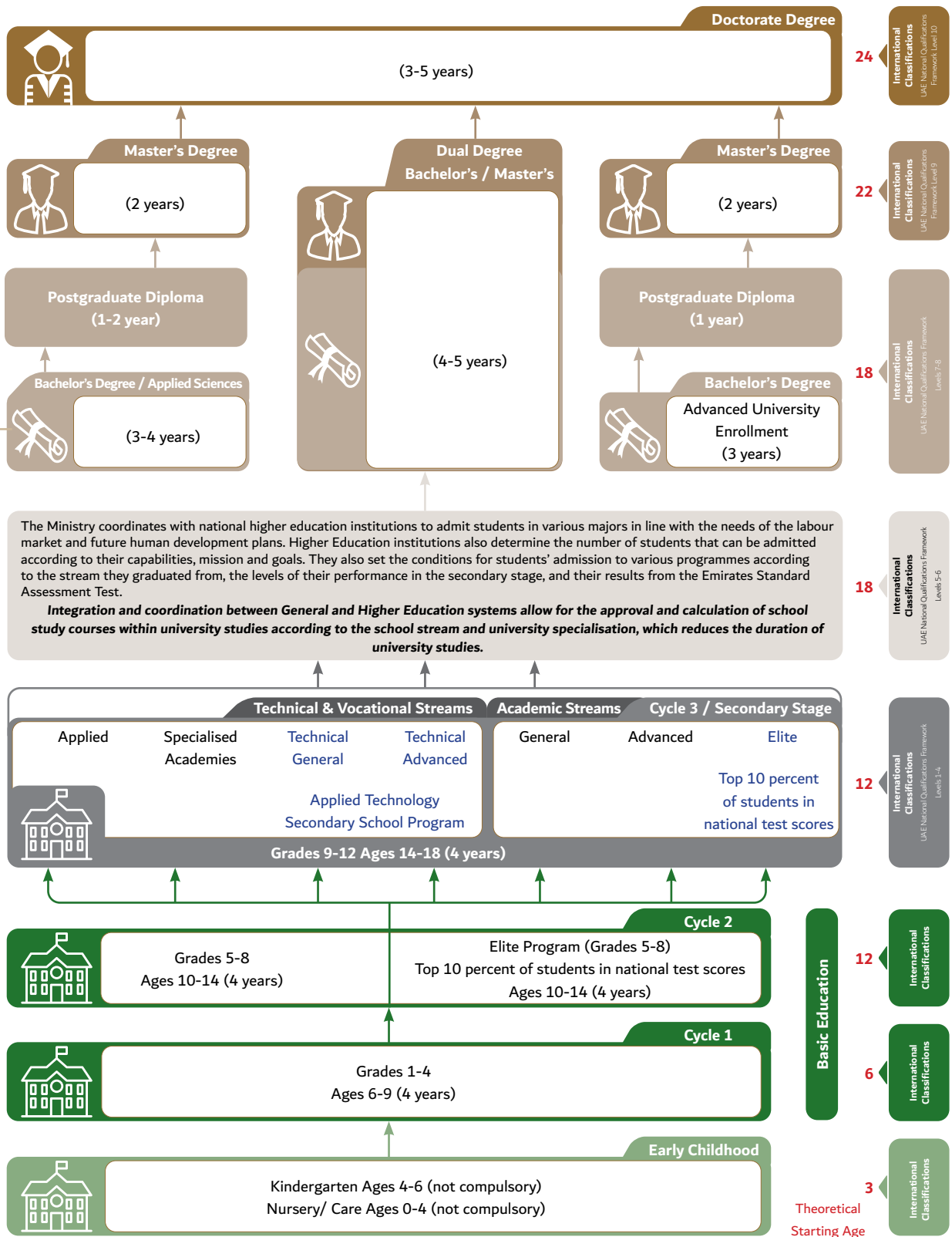
when a person acts or is involved in something with their own free will





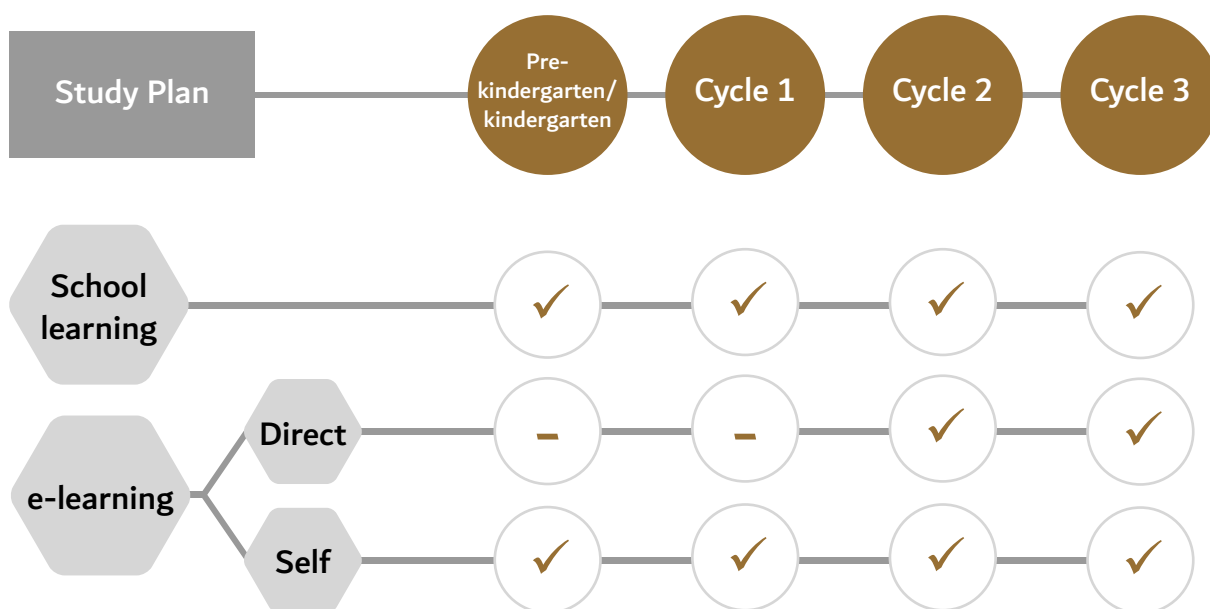
UNITED ARAB EMIRATES
MINISTRY OF EDUCATION





Hybrid education in the Emirati school

Within the strategic dimension of the Ministry of Education's development plans and its endeavor to diversify education channels and overcome all the challenges that may prevent it, and to ensure continuity in all circumstances, the Ministry has implemented a hybrid education plan for all students at all levels of education.



Channels for obtaining a textbook:



برنامج محمد بن راشد
للتعلم الذكي
Mohammed Bin Rashid
Smart Learning Program

Electronic units

