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Lecture Seven

Academic Writing

Description of the Lecture

This lecture is about academic writing. Throughout the lecture students will become familiar with many aspects of academic writing. The emphasis is put on the definition, meanings, types, and guidelines for academic writing. The current lecture is made up of two main sections; theory and practice.

Objectives of the Lecture

On successful completion of the lecture, students should be able, among other things, to;

- ❖ Be familiar with the meanings of academic writing style.
- ❖ Learn about the different rules and conventions of academic writing.
- ❖ Understand the structure of academic writing style.
- ❖ Understand the degree of formality and the shift between formal, semi-formal and informal language according to the contexts.

Introduction

Academic writers need to be sure that their communications are written in the appropriate style. The style of a particular piece must not only be consistent, but must also be proper for the message being conveyed and for the audience. A formal research report written in informal English may be considered too simplistic, even if the actual ideas and data are complex. Lectures are generally delivered in a relatively nonacademic style. It is not uncommon to hear lectures use words and phrases like stuff, things, bunch, or a whole lot of, which would not be appropriate for an academic writing task. They may also use elaborate metaphors and other vivid expressions to enliven their speaking style, while it is valuable to understand and acquire such language for personal use. It is not generally appropriate for academic writing style. This shift in style is indeed the most silent features of academic writing.

1. Definition of Academic Writing

Academic writing follows certain conventions of structure, style and content. It allows writers to contribute to the academic debate; you evaluate the arguments of others and you suggest your own. So the precise and concise meaning of academic writing must include;

- Writing in an academic setting.
- By scholars for scholars, e.g. research articles
- Logically structured

- Objective
- Combines theory and empirical data.
- Analytic and critical
- Develops a central problem area.
- Draws conclusions
- Argues in relation to what others have said/written.
- Includes references
- Formal in style

Anyone who wishes to become a good writer should endeavor, before he allows himself to be tempted by the more showy qualities, to be direct, simple, brief, vigorous, and lucid.

(Fowler & Fowler, 1906, p. 11)

2. Rules and Conventions of Academic Writing

2. 1. You must write in Full Sentences

Sentences have the following characteristics: they start with a capital letter; end with a full stop, exclamation mark or question mark; and contain a verb (doing word). Students commonly make the mistake of not writing in full sentences (they fail to provide a main clause in their "sentence") or write very long, rambling sentences that would be better chopped into smaller ones. Short, clear sentences are usually more effective than those which are long and complex. If you are in any doubt, split up any longer sentences into two or three shorter ones. This advice is especially important if you find writing difficult, or English is not your first language. Short sentences will help you avoid grammatical mistakes and make it easy for the reader to follow your line of argument. Each sentence that you write should make sense if it were read out independently of the sentence before and after it.

2. 2. Subject and verb in sentence must agree with one another

The number of **the** verb must agree with the number **of** the subject. **A** singular subject has a singular verb, and a plural subject a plural verb. It follows that you must correctly identify the subject, which is not necessarily the first or only noun in the sentence. If the subject of a sentence is singular, then the verb form must be singular as well:

- The student passes the exam. In this example the student is the subject. There is just one student, so the subject is singular. The verb is "to pass" and agrees with the singular subject. If this sentence described the activity of several students the subject would be plural, so the verb agreement would reflect this: **The students pass the exam.**

Problems can occur with case agreement in two circumstances:

1. A statement begins in the singular, but drifts into the plural. The following sentence is incorrect:

- *An information manager needs to know whether they are doing their job properly.*

2. The easiest solution to this problem is to make both the subject and verb plural:

- Information managers need to know whether they are doing their jobs properly.

3. Collective nouns cause confusion. The following sentence is incorrect:

- The government are passing new legislation.

4. Since there is just one government in the example given above, the sentence should read:

- The government is passing new legislation.

2. 3. Use Formal and Appropriate Vocabulary

Certain words which we frequently encounter in everyday communication may not be suitable for use in academic essays. These include words which are casual (informal) and commonly used only in spoken English. This does not mean that informal language is inferior to formal language. It simply means that there are words which are more appropriate than others for use in each context. Choosing words that are appropriate in your writing can convince your readers that your work is serious and important. On the other hand, if your words are unclear, ambiguous and/or incorrect, chances are your readers might be confused about the content of your essay or might even think that your work is not worth reading. Furthermore, it is important that you use the right vocabulary in your work. The mistakes that crop up regularly in students' work are usually due to confusion between two words such as: For example, in reporting work done by others in a subject that you are investigating, you would not write:

- **A couple of** researchers have **found out** that.....
  - ✓ Instead, you are more likely to write
- **Several** researchers have **discovered** that.....
- affect/effect, quote/quotation, practice/practice, license/licence (the first is the verb, the second is the noun);
- dependent and dependent (the first is an adjective, the second is a noun);
- alternate and alternative, principal and principle (these words have different meanings);
- Less and fewer (less means less in quantity: there is less water than before. Fewer means smaller in number: there are fewer people than before).

2. 3. 1. Avoid Uninformative Vocabulary Forms

In order to make your essay more formal, make sure that **you avoid features of informal language** in your writing. Se the table below for more details:

Informal Features	Definitions	Examples	alternatives
Jargon	Take special care with terms that have specialized meanings in your subject area.	The terms "tacit" and "explicit" have specific meanings in the context of knowledge management.	The authors **do not** provide explicit evidence for their claim.
Slang words	Words characteristic of casual conversation among friends or a particular group of people	One wonders if cosmetic surgeries really originated from the psychological challenges of **busted** individuals.	One wonders if cosmetic surgeries really originated from the psychological challenges of **unattractive** individuals.
The Impersonal Style	It is rare that you would be expected to write in the first person singular (using the word "I") when preparing essays and reports. You should aim to write impersonally. The idea is that you remove any personal bias from the argument when you write impersonally.	I conducted a survey on the use of social media in schools. [First person singular]	**1.** The author conducted a survey on the use of social media in schools. [Third person singular] **2.** A survey was conducted on the use of social media in schools. [Impersonal writing]
Clichés and Euphemism	Overused expressions or ideas whose original meaning or effect is lost. These are rarely helpful and frequently cryptic. Some common	The research of Yuan et al. (2007) on sustainable architecture in Singapore is considered to be **the cream of the crop**.	The research of Yuan et al. (2007) on sustainable architecture in Singapore is considered to be **the best**. The patient expired All and all If and when

	euphemisms are simply awkward.		
Colloquialisms	Words, phrases, or expressions characteristic of ordinary or familiar conversation but, unlike slang, usually not limited to use by only one particular group of people.	While current concerns about the loss of jobs in the United States are valid and real, what is more alarming is the growing negative cultural attitude towards India among those who have been **Bangalored**.	While current concerns about the loss of jobs in the United States are valid and real, what is more alarming is the growing negative cultural attitude towards India among those who **have lost their jobs because their companies have relocated to India for cheaper labor costs**.

2. 4. Use Synonyms

A *synonym* is a word that has the same or nearly the same meaning as another word. There are two reasons to use synonyms: First, to avoid monotony from using the same term repeatedly.

- The subject demonstrated a marked sensitivity to the allergen. After receiving the medication, she showed marked improvement. This is a marked medical achievement.

The repeated use of ***marked*** makes this passage tedious. The text can be improved by substituting different synonyms. Synonyms for common words can be found in a thesaurus, a dictionary, and some word processing programs. Understanding the nuances of synonyms can admittedly be difficult for those of us with English as a second or foreign language. The best ways to improve your grasp are to read English language authors and practice your own writing.

2. 5. Choose Strong or One Word Verbs

In general, academic writers prefer strong verbs to phrasal verbs (verb + preposition), which are very common in spoken or more casual uses of English, e.g. *establish* instead of *set up, produce* instead of *churn out, tolerate* instead of *put up with* and *assemble* instead of *put together*. Consider the examples given in the two tables below in regard to verbs and other words:

Some less formal verb words and their formal equivalents:	
Less Formal	**More Formal**
• Help (n.) • Buy • Need • Get	• assistance • purchase • require • obtain

Phrasal Verbs	Strong Verbs
The veteran researcher has **churned out** many articles in recent years.	The veteran researcher has **produced** many articles in recent years.
The team that was hurriedly **put together** has not been productive because the members do not share common objectives.	The team that was hurriedly **assembled** has not been productive because the members do not share common objectives.
The auditors' report suggests that the treasurer had tried to **cover up** the financial irregularities.	The auditors' report suggests that the treasurer had tried to **hide** the financial irregularities.

2. 6. Choose Specific Verbs

In reporting what you have gathered from reading, you will need to use a variety of powerful verbs that suit your purpose. Rather than using the words *say*, *show* or *report* all the time, you can use more specific verbs in academic reporting as illustrated below in these examples:

- In the article, "Euthanasia"…the author **outlines** the origins of the practice in the Nazi regime...
- Many medical studies have **demonstrated** a clear correlation between smoking and the incidence of lung cancer...
- The researcher **maintains** that nanoparticles are likely to remain lodged...
- The paper **concludes** that university education must remain accessible to all who qualify and that none should be denied the opportunity...
- Available literature seems to **support** the view that one acquires a second language...
- The report **notes** that there are inconsistencies in the way the economic data have been presented...

Other useful words for reporting what you have gathered in your secondary research are: *assert, claim, argue, infer, reason, postulate* and *illustrate*. The table below presents a list of verbs that are generally used in academic writing and research reports to express ideas more accurately. Using these verbs can help writers give their academic writing and research reports and papers a sense of formality. The following examples reflect how formal verbs can be used to rewrite ideas in a more academic style:

to adapt	to determine	to determine	to prove
to arise	to discriminate	to discriminate	to recognize
to carry out	to emphasize	to emphasize	to relate to
to characterize	to establish	to establish	to supplement
to clarify	to exhibit	to exhibit	to undergo
to concentrate on	to focus o	to focus	to generate

2. 7. Use Passive Voice over Active Voice

English verbs have two voices: ***active*** and ***passive.*** In the active voice, the subject performs the action, while in the passive voice, the subject receives the action.

- Frances always wins the award. [Active voice] = The award is always won by Frances. [Passive voice] = Note the change of the verb from ***win*** for the active voice to ***is won*** for the passive. The passive voice always combines some form of the verb ***to*** be with a past participle.

As fashions change with time, so does the style of scientific writing. Prior to 1900, scientists routinely used the active voice and personal pronouns in their reports, making such statements as, “I made the following experiment,” “I cannot say,” “I have seen,” and “I would point out, however , that . . . . ” The passive voice gradually gained popularity, perhaps from a belief that its impersonal style denoted greater professionalism. On the other hand, style experts now prefer the active voice, which is more direct, sounds more natural, and usually saves words. It clearly identifies who performs the action, and does not necessarily require the use of pronouns ***I, we, she,*** and so forth. **Again** the passive voice is also used to avoid mentioning the performer of the action when the performer is unimportant, indefinite, unknown, or obvious from context.

2. 8. Be Tentative to Punctuation Marks

Remember that punctuation and spacing are important, too. Sometimes the omission of a single mark of punctuation can cause confusion. A reader might erroneously infer different meanings. The following newspaper excerpt illustrates the importance of proper spacing:

In August 1993, a dam in a remote western province of China burst and killed 257 people. However, the U.N. disaster relief agency misread a Chinese document and reported the death figure at 1,257, The error resulted from a misplaced space in the English translation of the document, which read “as of September 1,257 people were dead,” instead of “as of September 1, 257 people were dead.”

2. 9. The Use of the Apostrophe Correctly for both Possessive Case and Contraction

2. 9. 1. Possessive Case

The possessive case refers to ownership. You can say "the work of the information manager" or "the information manager's work." The use of the apostrophe depends on whether the possessor is singular or plural.

- When the possessor is singular, possession is indicated by using an apostrophe followed by the letter **s** added to the noun: the student's assignment
- When the possessors are plural, possession is indicated by placing the apostrophe after the final **s** of the noun: the students' assignments

- Note that some organizations omit the apostrophe in their name, for example Barclays Bank. In academic writing, however, you must use the apostrophe to denote possession.

Note 1. Adjectives and possessive case

- Possessive adjectives do not use apostrophes.
- Adjectives are describing words. There are many of these in English, for example blue, happy, distinguished.
- Possessive adjectives are words that describe possession. There are seven of these in English: my, your, his, her, its, our, their. Note that *none* of these takes an apostrophe. This includes "its". So, if the use of the word “its” appears in your work to denote ownership, remember that it does *not* take the apostrophe. Examples of the use of possessive adjectives:
  1. The information manager has been in her job for ten months. [The job belongs to her].
  2. The organization prepared its information strategy in 2013. [The information strategy belongs to it].
  3. Their market sector is in decline. [The market sector belongs to them].
- Check every instance of the words "its" and "it's", "there" and "their", "you're" and "your" in your finished work.

Note. Contractions and Apostrophes

In written English words that have been contracted (i.e. shortened) use apostrophes to show where the missing letters would normally appear. This has two main purposes: to avoid confusion with other words and to indicate a different pronunciation for example "we're" is a shortened version of "we are". The apostrophe distinguishes the word "we're" from "were", which has both a different meaning and different pronunciation. Examples of the use of apostrophes to denote missing letters:

- **1.** They don't employ staff in Wales. [do not]
- **2.** I can't come on Monday. [cannot]
- **3.** it's likely that the company will grow by 10% in the next financial year. [It is]

2. 10. Be Consistent with either American English or British English

British writing is different from American writing in certain forms of punctuation and spelling. Whatever style is used will not normally affect the reader’s understanding of the text, but you should be consistent and employ the same style throughout a work. If you submit a manuscript to an English journal, its editorial office will automatically convert the punctuation and spelling to British style. Similarly, an American journal will impose the American style.

2. 11. Pay Attention to Capitals

Capital letters are used for:

- **Proper Nouns: H**azel **H**all, **P**rofessor, **E**dinburgh **N**apier **U**niversity
- **Names of Civic Holidays: C**hristmas **D**ay
- **Geographical Names: C**entral **B**elt
- **Public thoroughfares: P**rinces **S**treet
- **Important Events: G**raduation **D**ay
- **Trade Names: W**indows, **J**ava
- **Journal Titles:** ***I****nternational* ***J****ournal of* ***I****nformation* ***M****anagement*
- **The First Letter (only) of Book Titles:** ***N****avigating business information sources: a practical guide for information managers*

2. 12. Delete Uninformative Words and Avoid Redundancy

Using fewer words to convey a message almost always improves readability. It also requires more effort, as the mathematician Pascal once noted to a friend: "I **am** writing a longer letter than usual, because there is not enough time to write a short one. " The examples in the left-hand column below are unnecessarily wordy. The right-hand column displays improved versions. (This side-by-side format for displaying "before and after" examples is used throughout the book.)

Old Version	New Version
• Brief in duration • Sufficient in number • The wound was of a serious nature. • The solution was red in color. • It was precooled before used. • We repeated the experiment again	• Brief • Sufficient • The wound was serious. • The solution was red. • It was precooled. • We repeated the experiment.
• **Do not add words to lengthen your essay or create fancy expressions. It is far more important to get your message across effectively.**	

2. 13. Numbers in Academic Writing

The rules for using numbers in academic writing vary among academic disciplines. The conventions described here are for NON-TECHNICAL academic prose where numbers are not a significant focus. Scientific and technical writing will have their own conventions and students should consult a manual dedicated to those standards. The main rules about the use of numbers in standard academic writing are about:

1. When to write numbers in words
2. How to avoid confusion with numbers in a sentence
3. When to use digits for numbers
4. How to write numbers correctly

2. 13. 1. When to Write Numbers in Words

- **Write in words one or two-word numbers, rounded numbers and ordinal numbers.** For general academic writing, you need to write these numbers in words: all numbers under one hundred (e.g. ninety nine) rounded numbers (e.g. four hundred, two thousand, six million) and ordinal numbers (e.g. third, twenty-fifth). See the following examples:
  - ✓ The country had been at war for **twenty-five** years. (number under 100)
  - ✓ Over **four hundred** soldiers were sent to the war zone. (rounded numbers)
  - ✓ The **thirty-eighth** battalion was sent to the war zone for the **fourth** time. (ordinal numbers)
- **Write in words numbers beginning a sentence.** Either write the number in words, or if that's awkward, then rewrite the sentence to avoid beginning the sentence with a numeral. ***Exception: You can begin a sentence with a date.*** See the following examples:
  - ✓ × **130 student volunteers** joined the university peace mission. (wrong)
  - ✓ ✓ **One hundred and thirty student volunteers** joined the university peace mission. true)
  - ✓ × **75 percent** of the rental properties were occupied by students. (wrong)
  - ✓ ✓ Students occupied **75 percent** of the rental properties in the town. (rewrite) (true)
  - ✓ ✓ **2008** was a good year to commence university studies. (beginning with a date) (true)
- **Write in words approximate numbers and some times of the day.** In non-technical academic writing, write in words the number for approximate figures (including fractions) and for full, half and quarter hour times. See the following examples:
  - ✓ About half the students; a quarter of the university; four times as often; hundreds of times.
  - ✓ Six o'clock, half past six, quarter past seven, quarter to nine, midday, midnight

2. 13. 2. How to Avoid Confusion with Numbers in a Sentence

- **Avoid confusion when using two numbers together (run-on numbers) or when dealing with several numbers in a single sentence.** See the following examples:
  - ✓ There were **32 third-grade students** participating in the test. (run-on numbers)
  - ✓ The computer laboratory has 24 thirty-centimeter monitors.(run-on numbers)

- ✓ At least 28 million people lived in the region where a 1500 dollar a year support allowance was given for each student's education fees. (**Be consistent—write both numbers in digits or words)**.

2. 13. 3. When to Use Digits for Numbers

- **Use digits for numbers greater than one hundred and in the following situations**

Use digits for	Examples
• **Numbers above 100**	• Use digits (e.g. counted 3968 books on the shelves).
• **Money**	• Use digits for exact amounts (e.g. $24.28), but use digits and words for rounded and large amounts (e.g. 98 dollars; $15 million).
• **Measurement**	• Use digits with a measurement symbol (e.g. 32 0C *or* 32 degrees centigrade; 6 cm *or* 6 centimeters).
• **Percentages**	• Use 55%, 55 percent or fifty-five percent (e.g. Over 55% of students passed the examination.).
Fractions and Decimals	• **Fractions:** Write in digits or words. If you use words, join the fraction parts with a hyphen (e.g. ⅔ *or* two-thirds). • **Decimals:** Give exact amounts in digits (e.g. 0.45 not .45; 2.36).
• **Surveys**	• Write survey results in digit form (e.g. A survey of participants revealed that 4 out of 5 students worked.).
• **Scores**	• Write scores in digit form (e.g. Students scored from 8 to 75 out of 100.).
• **Statistics**	• Use digits to describe statistical information (e.g. The survey focused on 90 teachers, 10 principals and 24 auxiliary staff from 20 different schools.).
• **Eras Time Spans**	• Choose from a variety of formats, but be consistent (e.g. the eighteenth century *or* the 18th century; from the 1960s to the 1990s; during the 2000s; in 2300 BC [before Christ]; in 1770 AD [*anno Domini*, after Christ]).
• **Dates**	• Use this order (day/month/year) consistently (e.g. Tuesday 23 February 2008).
• **Time of day**	• Choose from a variety of formats, but be consistent (e.g. 9 am *or* 9.00 am *or* 8.22 pm). IF you are NOT using 'am' or 'pm', THEN WRITE OUT THE TIME IN WORDS (e.g. the eight-thirty bus; four o'clock in the afternoon). For midday and midnight, write in words—do not use 12 am and 12 pm).

• **Spans of Numbers**	• Use digits (e.g. *pages*: 56–74, 115–117; *years:* 1864–1899, 1998–2008; *streets* 36–99 Spa St).
• **Divisions in a Book**	• Use digits to refer to divisions in books and plays (e.g. volume 5, chapter 6, page 45; act 2, scene 4).

2. 14. The Correct Use of Abbreviations

- Abbreviations are not used in formal English. They give the impression of a style that is chatty and too informal. So, for instance, when you want to introduce an example into your work you should use, in full, the phrase "for example".
- When you are taking notes in class you may like to use the abbreviation for "for example". The abbreviation is for the Latin term "exempli gratia" and is written as "e.g."
- Do not confuse "e.g." with "i.e. "This abbreviation "i.e." is an abbreviation for the Latin phrase "id est" and means "that is to say" or "in other words".

3. Formal versus Informal Language

English has an amazing array of formal and informal tones. Just look at the following sentences:

1. "Depart from this domicile and desist all your illegal larceny." **(Ultra-formal)**
2. "Leave the premises and cease stealing my property." **(Formal)**
3. "Get out of my house and stop taking my belongings." **(Informal)**
4. "Get outta my crib and quit jacking my stuff." **(Ultra-informal or slangy)**

Three Levels of Formality in English		
Formal	**Semi-formal**	**Informal**
• Textbooks, • official reports, • academic articles, • essays, • business letters, • contracts, • official speeches	• Day-to-day interaction with colleagues and teachers, • popular magazines/books, • interviews, • when talking with someone in authority or who you respect	• Interacting with friends, • speaking or chatting online

1. **Avoid contractions.** I'm, you're, can't, don't, wasn't, it's... See the examples in the table below.

Less Formal	More Formal
▪ The shipment **hasn't** arrived. ▪ **They're** manufactured in China.	▪ The shipment **has not** arrived. ▪ **They are** manufactured in China.

▪ **He's** the director of marketing. ▪ **We'd** like to inform you...	▪ **He is** the director of marketing. ▪ **We would** like to inform you...

2. **NO idioms, slang, text speak and shortened words.** See the examples below.

Idioms	
• The software is **a piece of cake.** • The software is **quite user-friendly.** • The software is **extremely easy to use.**	
Slang	
• A million **bucks** in profit. • A million **dollars** in profit.	
Text speak	
• Tks & we look 4ward 2 meeting u. • Thanks, and we look forward to meeting you.	
Shortened Words	
• The **info** was incomplete. • The results have arrived from the **lab.** • fruits and **veggies**	• The **information** was incomplete. • The results have arrived from the **laboratory.** • fruits and **vegetables**

Acronyms	**TAFE**	Technical and Further Education
	ANZAC	Australian and New Zealand Army Corps
	QANTAS	Queensland and Northern Territory Aerial Services
Initialism	**UTS**	University of Technology Sydney
	ISO	International Standards Organization
	OECD	Organization for Economic Cooperation and Development

Summary

In academic setting, make sure to include and be consistent with the rules and conventions of the writing style you follow. A paper will be more readable if words are used economically. Writing concisely may be contrary to common practice in some countries where, I have been told, authors are paid by the number of words published!

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Practice

Focus Questions

1. What are the different writing types you know?
2. What is the meaning of academic writing style?
3. What are the rules and conventions of academic writing style?
4. What are the characteristics of academic writing style?
5. What is the common structure of academic writing style?
6. List a number of situations with their corresponding writing styles.

Exercise 1

Which of the following statements reads as most credible and convincing? Why?

1. Emotional intelligence is essential in the practice of management.
2. In my opinion emotional intelligence is essential in the practice of management.
3. According to Smith (1967) emotional intelligence is essential in the practice of management.
4. Jones (2004) argues that emotional intelligence is essential in the practice of management. In his view successful management practice hinges on effective communication between people, and emotional intelligence can contribute to that.
5. It may seem reasonable to suggest that the necrotic effect may possibly be due to toxins.
6. In studies pertaining to identification of phenolic derivatives, drying of the paper gives less satisfactory visualization.
7. **A** method, which was found to be expedient and not very difficult to accomplish and which possessed a high degree of accuracy on its results, was devised whereby . . .

Exercise 2 preciseness in Academic Writing: Acknowledging exceptions and limitations

How would you make these sentences more precise?

1. Narrative is the structure used for a novel or film.
2. Historians believe that history is the study of significant past events which have relevance for the present and future.
3. Knowledge of grammar improves the standard of writing.
4. Smokers die at a younger age than non-smokers

Exercise 3 Formality: Formal and impersonal language

Some of the language in the following examples is more appropriate for speaking than writing. Identify which expressions are too informal and personal.

1. **A)** When I look at the situation in emergency wards, with many staff leaving, it's hard not to worry about how many doctors will be available to treat patients in the future.
2. **B)** If we consider the situation in emergency wards, with increasingly low staff retention rates, there are concerns about the capacity of hospitals to maintain adequate doctor to patient ratios.
3. **A)** It's so obvious that people were given jobs just because they were male or female. I don't think that is an acceptable approach and is even against the law.
4. **B)** It appears that in a number of instances jobs were assigned on the basis of gender. Given the current anti-discrimination laws, this raises serious concerns.

Exercise 4

Rewrite the sentences in a more academic style using verbs from the list below. Note that you may need to change the verb tense.

Investigate, assist, raise, discover, establish, increase, eliminate,

1. Systems analysts can **help out** managers in many different ways.
2. This program was **set up** to improve access to medical care.
3. Medical research expenditure has **gone up** to nearly $350 million.
4. Researchers have **found out** that this drug has serious side effects.
5. Exercise alone will not **get rid of** medical problems related to blood pressure.
6. Researchers have been **looking into** this problem for 15 years now.
7. This issue was **brought up** during the coroner's inquest.

Exercise 5

Delete the uninformative, unnecessary and redundant words or expressions in the following statements keeping the exact same meaning with justification.

1. The process is brief in duration.
2. The description is sufficient in number.
3. The picture was red in color.
4. The truth fact was drawn by the researcher of the study.
5. We repeated the experiment again.
6. It was pre-cooled before use.
7. The researcher carefully investigates the problem.
8. Past history indicated terrible wars.
9. They Mix together the independent parts to research the conclusions.
10. Human volunteers are ready to save the ……..
11. The original source of the datum was T.V. report.
12. The advance planning is done to protect the …
13. The earth planet is globular in shape.
14. The decision of the teacher seems to appear righteous that that of the …..
15. The investigation is done for a period of several minutes.
16. The role of cobra snake is still a matter of speculation.
17. The reason was because of lack of references.

Exercise 6: Degrees of Formality

Rewrite the sentences below, replacing the words in italics with their formal equivalents from the box. Make sure you use the correct form of the verb.

Review	**Concerned**	**Angry**	**Ensure**	**Receive**
Purchase	**Complete**	**Assure**	**Request**	**Would like**

1. I can promise you this will never happen again.
2. We will *make sure* the computer is repaired by one of our technicians.
3. The book I *bought* online was damaged.
4. I *want* you to give me my money back.
5. I hope you *got* the package I sent last week.
6. He's really *mad* about the service he received at our store.
7. The work will be *finished* by the end of the month.
8. The manager is *worried* that they won't meet their deadline.

Exercise 7

Make the following more <u>formal</u>:

1. She just wanted to say, "Hey y'all!"
2. That question is a no-brainer.
3. That's a cheesy t.v. with no color.
4. Chopping up frogs in biology grosses me out--like, gags me totally.
5. Dude, what's up with that?
6. That prof needs to chill out about kids using slang. We can't all talk like her.
7. Now girlfriend, don't you be dissing me!
8. That boy's such a grammar-geek.
9. Yo! That fella is a player, I'm telling you.
10. He seems a bit flaky to me. He oughta be in juvie.
11. That's the boss-man calling for ya, buddy.
12. Six bucks for that dress? What a rip off!
13. That rookie is hot stuff on the 'turf, man!

Exercise 8: Avoiding two word verbs

There is often a choice in English between a two word verb and a single verb - bring up/raise, set up/establish. Rewrite the following sentences, replacing the *informal two-word verb* with a more formal equivalent.

1. A primary education system was *set up* throughout Ireland as early as 1831.
2. This will *cut down* the amount of drug required and so the cost of treatment.
3. The material amenities of life have *gone up* in Western society.
4. The press reflected the living culture of the people; it could influence opinion and reinforce existing attitudes but it did not *come up with* new forms of entertainment.
5. Thus, he should have *looked into* how the patient has coped previously.
6. The aggregate of outstanding balances *went up and down* quite violently.
7. The court thinks it just and equitable to *give back* the property.
8. Dieters often feel that they should totally *get rid of* high-fat and high-sugar foods.
9. Thus when a Gallic bishop in 576 converted the local Jewish community to Christianity, those who *turned down* baptism was expelled from the city.
10. Western scholars gradually *turned out* a corpus of translations from the Arabic and studies of Islam.

Exercise 9

Complete the following table by what is necessary. Then state your opinion about English language style in terms of academic writing requirements.

American English	British English
Connection	……..
……..	Inflexion
Kids	……
……	Analyse
Center	……..
……..	Judgement
Behavior	……..
……	Mollusk
Distill	……..
……..	Flat
Catalog	……..
……..	Lift
Acknowledgment	……..
……	Pants
fetus	……

Lecture Eight

Ways of Knowing and Knowledge

Description of the Lecture

This lecture is about ways of knowledge. Throughout the lecture students will become familiar with many aspects and ways of knowledge. The emphasis is put on the definition, meanings, types, and ways of knowledge. The current lecture is made up of two main sections; theory and practice.

Learning Objectives of the Lecture

On successful completion of the lecture, students should be able, among other things, to;

- ❖ Explain the meaning and concept of knowledge;
- ❖ List and explain the conditions of knowing something such as facts, faith, truth, and justification
- ❖ List and explain the three types of knowledge such as personal, procedural and prepositional knowledge.
- ❖ List and explain the multiple ways of knowing such as language, sense perceptions, emotions, reason, faith, authority, imagination, intuition, and memory.
- ❖ List and explain the multiple sources of knowledge such as life experience, authority, traditions and customs, deductive and inductive reasoning,

Introduction

Knowledge is a topic, widely discussed both in philosophy and in everyday life of a common man who is not aware of its principles and existing connotations. This lecture attempts to explain “knowledge”, significance of “Knowing” by incorporating diverse interdisciplinary, multicultural perspectives on understanding of “Knowledge” and its concepts that we experience “knowingly or unknowingly”. It involves a discussion on wisdom-knowledge interaction, ways of knowing, sources of knowing.

1. The Definition of Knowledge

Collins “Dictionary of the English Language"*defines knowledge as:

1. **1.** The facts, feeling and experiences known by a person or a group of people,
2. **2.** The state of knowing,
3. **3.** Awareness, consciousness or familiarity gained by experience or learning,
4. **4.** Evaluation or informed learning,
5. **5.** Specific information about a subject.

- Knowledge is the totality of systematized and organized ideas produced as a result of sensory intellectual and intuitive experiences of individuals and conserved by human civilization.

2. Ways of Knowing

2. 1. Language

- How does language shape knowledge?
- Does the importance of language in an area of knowledge ground it in a particular culture?
- How are metaphors used in the construction of knowledge?

Language can refer to the mental faculty which allows people to learn and use complex communication systems, or it can refer to those systems themselves. Language consists of a system of signs with agreed or conventional meanings combined according to a set of rules for the purposes of communication, formulation of ideas, storage of knowledge or as a medium of thought. The term "signs" can be interpreted very broadly to include letters, symbols, sounds, gestures, images and even objects. Language is a crucial part of our daily lives, but is also filled with potential problem areas, for example, ambiguity, sarcasm, irony and translation issues.

Language plays an important role in communicating knowledge. However, some see language as having an even more central role, arguing that language doesn't just describe our experiences of the world but in fact actually structures those experiences. In the section on the knowledge framework there is a discussion about whether certain types of knowledge are actually constituted by language— the idea that language is part and parcel of the knowledge claim itself and not merely a description of something that exists independently of language. The view that facts about the world might be determined by the language is called linguistic determinism.

2. 2. Sense Perception and Empiricism

- How can we know if our senses are reliable?
- What is the role of expectation or theory in sense perception?
- What is the role of language in sense perception?

Sense perception is the process by which we can gain knowledge about the outside world. Traditionally, there were believed to be five senses: sight, touch, smell, taste and hearing. However, many now argue that there are others such as a sense of heat, sense of pain, sense of movement, sense of balance and the senses of hunger and thirst, or a sense of where our body parts are.

Some Major Advantages Empiricism, Observation or Sensory Perception	**Some Major Disadvantages Empiricism, Observation or Sensory Perception**
• knowledge is grounded in *observable* "facts" and is thus termed *objective* • claims of knowledge may be tested and	• all phenomena are not easily observable, and some phenomena may not be observable at all • our senses have limits (e.g., human hearing differs

criticized by others relatively easily • it is basic to the scientific method, which has proven to be a valuable process in establishing a great deal of our knowledge in the modern world • it is a way of knowing that often can be tested *repeatedly*	from that of other animals) and can at times mislead us (e.g., optical illusions) • observable data takes on meaning by the way it is organized and interpreted, and such organization and interpretation may introduce bias • Emphasis on "objectivity" may mask "subjective" influences

2. 3. Emotions

- Are emotions universal? Can/should we control our emotions?
- Are emotions the enemy of, or necessary for, good reasoning?
- Are emotions always linked to belief?

Emotion has sometimes been regarded as an unreliable way of knowing. Emotions have, for example, been criticized as being irrational obstacles to knowledge that distort our picture of reality. However, others believe that not only do emotions help make sense of social and cultural experiences and behaviors, but they are also the source of social, ethical and political knowledge by helping us form an understanding of the world around us.

2. 4. Reason and Rationalism

- What is the difference between reason and logic?
- How reliable is inductive reasoning?
- Are we predictably irrational?

Reason is the ability to think. This ability is indispensable to having knowledge of any sort, including knowledge acquired through sense perception. Sense experience may provide-the raw material for our judgment but without reason we cannot formulate the judgment at all. Thus reason is a "prerequisite for all knowledge. The most familiar kind of reasoning, which is often taken as the model for all reasoning, is deductive reasoning. In a deductive argument, the conclusion must logically follow from the premises: or in other words if the premises of the argument are true, the conclusion must be true. It means that if we want to know that a conclusion is true we have to be sure that the premises are true and the arguments valid. But all reasoning is not deductive. We also argue inductively i.e. from evidence to conclusion. However, the conclusion s in-inductive reasoning is not certain but only probable to one degree or another.

Major Advantages of Rationalism, Reason and Logic	**Major Disadvantages Rationalism, Reason and Logic**
• it does not depend upon the limits of sensory observation	• it works with abstractions which may be unrelated to the "real world we live in"

• it is checked by rules of logic and internal consistency • in its least formal practice, this is often a "common sense" way of knowing	• logical arguments may hide logical fallacies and rhetorical conceits • what at first may seem "logical" may turn out to be merely social/cultural convention

2. 5. Imagination

- What is the role of imagination in producing knowledge about a real world?
- Can imagination reveal truths that reality hides?
- What is the role of the imagination in understanding others?

Imagination is often identified in a narrow sense as the capacity to form a mental representation of something without the stimulus of sense experience. Traditionally, imagination has been associated with imagery and making a mental image of something. However, more recently interest in the imagination has also focused on exploring propositional imagining, or "imagining that". The importance and power of the imagination is highlighted by a number of medical conditions which impact upon it, for example, conditions which can impair imagination such as severe autism, or conditions which can cause delusions such as severe schizophrenia.

Imagination is sometimes viewed in a broader way as being associated with creativity, problem-solving and originality. Here it might be the making of connections between otherwise disparate ideas in order to solve problems. This might be useful in model making or theory creation in the sciences and solving structural problems in the arts. Imagination is, however, also sometimes distrusted, in part because it is regarded as something that is derived in the mind of the individual and therefore subjective. Imagining is also sometimes associated with counterfactual reasoning; imagining "what would happen if …", or "what would have happened if …"

2. 6. Faith

- Should humanism or atheism be described as a faith?
- Can theistic beliefs be considered knowledge because they are produced by a special cognitive faculty or "divine sense"?
- Does faith meet a psychological need?

Faith is belief in something for which there is no evidence. However, people have been found claiming to knowledge on the basis *of* faith. As such faith cannot be taken as a source of knowledge if it cannot be verified by sense experience or reasoning.

The term "faith" is most frequently used to refer specifically to religious faith, but can also be used in a secular sense as a synonym for trust. Although most associated with belief in a God or gods, faith can be religious without being theistic, for example, in Buddhism. Alternatively, it can be seen as a commitment to a particular interpretation of experience and reality which is not necessarily religious at

all, such as humanism. Logical positivism claims that statements of faith have no meaningful cognitive content, so it doesn't make sense to speak of faith as a way of knowing. However, for many people faith is a key way in which they try to understand and explain the world.

2. 7. Intuition, Inspiration or Revelation

- Why some people are considered more intuitive than others?
- Are there certain things that you have to know prior to being able to learn anything at all?
- Should you trust your intuition?

Intuition is sometimes described as immediate cognition, or knowledge which is immediately evident without prior inference, evidence or justification. Intuition is often contrasted with reason, as it is regarded as knowing without the use of rational processes. Famous scholars referred to intuition as perception via the unconscious, highlighting the idea that intuition is often seen as beliefs which are known without understanding how they are known.

Intuition is sometimes associated with the concepts of instinct and innate knowledge. For example, some would argue that although we do not have innate knowledge of any particular language, we have an intuitive capacity to use language. Intuition has been much discussed in the field of ethics in terms of whether we have moral intuition, or a kind of innate sense of right and wrong. It is also seen by some to play an important role in scientific advances.

Some Major Advantages of Intuition	**Some Major Disadvantages of Intuition**
• it may allow us to "know" things which could be unavailable to us by other ways of knowing • it may allow us a direct and unmediated form of knowledge • it seems to produce knowledge that is personally powerful and deeply affecting • it may allow us to tap into a certain "emotional wisdom" (as opposed to what is purely intellectual) or a transcendent or divine knowing	• it deals with personal and private experience that is relatively inaccessible to others or to outside critical evaluation • it may be quite vulnerable to personal misconceptions/delusions • because it is such a personal and private way of knowing, it may be hard to communicate/translate this knowledge for others' use • it may be the subtle product of undifferentiated *other* ways of knowing

2. 8. Memory

- Can we know things which are beyond our personal present experience?
- Is eyewitness testimony a reliable source of evidence?
- Can our beliefs contaminate our memory?

Memory, and particularly habit, has a strong link to procedural knowledge and remembering how to perform actions. In contrast to perception, memory refers to things which are not currently happening. And in contrast to imagination, memory refers to things which we believe really happened. Some would argue that memory is not itself a source of knowledge, but instead is a process which we use to recall knowledge gained in the past. However, although memory refers to knowledge gained in the past, it can be argued that even new knowledge is dependent on and influenced by memory. For example, how we interpret new situations can be heavily influenced by experience and previous events. In this way, apart from being a "storage unit" for existing knowledge, memory can also be a mechanism that allows us to process new and unique situations.

3. Sources of Knowledge

Knowledge is a result of many processes like knowing, perceiving, thinking, remembering, reflecting, observing, finding out, inferring, proving and so on. Knowledge, as you read in the previous section, is justified belief. Knowledge has three elements which are:

- **1)** existence of a group of ideas and phenomena,
- **2)** these ideas and phenomena correspond to things which exist,
- **3)** The correspondence is supported by beliefs.

3. 1. Life Experience

Humans need to find solutions to their problems so as to live in harmony with the world around. For this they need to understand various phenomena and activities they undergo and make sense of their experiences. One of the most primitive and primary source of knowledge for human beings are their life experiences. Nomadic tribes learned from experience about the edibility of certain wild fruits and also that others were harmful. All their actions were based on whatever they experienced in performing their daily life activities. They observed weather patterns throughout the year and could ascribe reasons for floods or droughts. The experiences gained during the course of life accumulate into a body of knowledge and enable individuals to cope with life's problems. However, one cannot rely solely on personal experiences as a source of knowledge for tackling new problems. Sometimes this may lead to wrong conclusions if the experiences are examined uncritically. The inferences drawn may be affected by personal prejudices and may be influenced by subjectivity. Two people may perceive and report a particular situation or event in completely different ways. Classroom practices adopted by teachers should enable children to relate the knowledge gained with their daily life. Opportunities should be provided for group work, discussions and sharing of experiences and ideas guided and facilitated by the teacher. (IGNOU, 2007)

3. 2. Authority

Getting knowledge or seeking knowledge from authorities is a common practice. Whenever the individual comes across a new situation or encounters a problem that she has never experienced before, he/she takes recourse to seeking answers from established authorities, parents, teachers even older siblings and friends. It is all the more true for children in the teacher-centric classroom, where they can get answers on solutions to problem situation from their teachers. However, such a practice should not be encouraged. Learners should be provided such learning experiences that engage them in learning tasks leading to solutions. Role of authorities, i.e. teachers in this case, should be that of a facilitator and guide leading them on the path of self-directed and independent problem solving. In a society that is evolving at a rapid pace the role and place of experts and trained individuals is important. Experts are required in every field and are a valuable source of knowledge and skills, because of their level of expertise and knowledge. However, one must not lose sight of the fact that even experts can at times be wrong. One cannot accept their advice or guidance unconditionally. The truth of their statements should not be accepted without validation and authentication from other sources. When dealing with children teachers need to be thorough in their subject areas and pedagogical skills. This way they can deal with problems and obstacles faced by children in the classroom adeptly and also guide them to explore situations in diverse ways (IGNOU 2007).

Some Advantages of Authority	Some Disadvantages of Authority
• it utilizes the wisdom of "great" people and traditions • many "authorities" are recognized as such because they have been time-tested through some social process of validation • utilizing authorities can conserve our own effort	• authorities can be wrong • authority is sometimes largely just a function of the popularity or political power of a person or tradition • deference to authorities can hinder our own critical judgment or cause us to discount our own wisdom

Note. Ways of knowing do not operate in isolation

Ways of knowing should not be viewed in isolation. They interact in various ways in the construction of knowledge and the formation of knowledge claims. For example, even a simple claim such as "this table is blue" involves a number of ways of knowing coming together. I need language to be able to understand the terms "table" and "blue". I need a conceptual system based on reason to realize that a table is something that has the possibility of being blue. I need sense perception to recognize that what I see is a table and that the color of the table is blue. In this way, the individual ways of knowing are woven together into more elaborate structures in order to generate knowledge in the areas of knowledge.

3. 3. Customs and Traditions

Our customs and traditions are a rich source of knowledge. Many communities in India are a storehouse of knowledge. All of us are used to certain patterns of behaviors in our daily lives which are customary. For example, the food we eat, dresses we wear, and cultural practices we adopt, and so on. All these are accepted practices and serve as guides for our future behaviors. This is true especially in school settings where customary and traditional practices are relied on. Children belonging to diverse and heterogeneous communities bring in the class room a varied set of experiences. Teachers can tap this rich resource of knowledge by organizing group work or project studies based on local knowledge and practice. For example, teachers can engage children in discussions about how their families celebrate different festivals, or about different kinds of food habits in their communities. However, one must exercise caution because all customary and traditional practices may not hold true or be useful in the present context. Some erroneous practices need to be discouraged and even rejected.

3. 4. Deductive and Inductive Reasoning or Inference

As discussed in the earlier section knowledge is also arrived at by reasoning. Two types of reasoning generally accepted are: (a) deductive and (b) inductive. Before we discuss the two types of reasoning, it is necessary to understand what is reasoning and how it is a source of knowledge**. Reasoning is a process of thinking through which reliable knowledge is obtained.** A child tends to make meaning of the external world by reasoning.

3. 4. 1. Deductive Reasoning

Deductive reasoning is based on Aristotle's syllogism which is a great contribution to formal logic. Syllogism has been defined by Aristotle as, "a discourse in which certain things being posited, something else than what is being posited follows them". A syllogism consists of a major premise based on a priori or self-evident proposition, a minor premise providing an example and a conclusion. It will be clear from the following examples:

- ✓ All men are mortal. (Major premise)
- ✓ Socrates is a man. (Minor premise)
- ✓ = Therefore, Socrates is mortal. (Conclusion)

- ✓ 1) All mammals have lungs. (major premise)
- ✓ 2) Rabbits are mammals. (mirror premise)
- ✓ = Therefore, all rabbits have lungs. (Conclusion)

In deductive arguments, the premises provide the truth of the conclusion. The basic assumption of syllogism is that valid conclusions are deduced from valid premises through a sequence of logical arguments from general to specific. Deductive reasoning is employed in problem solving. In the

classroom situations children use deductive logic to solve problems. Researchers use deductive logic to find solutions to research problems. However, deductive reasoning does have its limitations. It depends on preexisting knowledge and relies on verbal symbols. Words may mean different things to different people and may lead to ambiguity. But deductive logic does enable generation of new knowledge through enquiry and by systematizing the existing knowledge. It can help to identify new relationship by moving from known to unknown. In the above examples, you find that conclusion follows from the premises. Both the arguments and the conclusion are valid. But one must be able to distinguish between validity and truths. The arguments may be valid but the premises may not necessarily be true. They may also lead to a logical conclusion. For example:-

- ✓ All snakes are mammals.
- ✓ This is a snake.
- ✓ = Therefore it is a mammal.
    - ✓ In this example, argument is valid, because conclusion is derived from the premises. But the premises are false and the conclusion arrived is also false.

Sometimes the premises may be true but the argument may not be valid. For example:

- ✓ India is a multilingual country.
- ✓ 5 plus 5 equals 10.
- ✓ =Therefore he can swim.

All the premises in this case are true but the conclusion does not follow from the premises. Hence, to know that a conclusion is true the premise should be true and the argument should be valid. In deductive argument the conclusion is often contained within the premises.

3. 4. 2. Inductive Reasoning

Inductive reasoning is about where the premises provide the probable evidence to support the conclusion but not completely to the same extent as deductive method. Francis Bacon argued against the practice of syllogistic (deductive) reasoning which derived conclusions from authoritative premises. He believed that researchers should collect their own data after careful observations and base their conclusion on this data. The conclusion drawn in the process of inductive reasoning are not certain but probable. The examples that follow will illustrate this:

- ✓ 1) Pigeon 1 is grey.
- ✓ 2) Pigeon 2 is grey.
- ✓ = Pigeon 3 is grey.
- ✓ = (Ten thousand and more pigeons) Therefore, all pigeons are grey.

- ✓ 1) Gold is malleable and ductile.
- ✓ 2) Silver is malleable and ductile.

- ✓ = Copper is malleable and ductile.
- ✓ = Iron is malleable and ductile.
- ✓ = (For all metals) therefore all metals are malleable and ductile.

In the first example, even though the ten thousand premises may be true but the next pigeon we come across may be white. Hence the conclusion is not certain even though the premises are true. In the second example, the conclusion is also not certain as there may be metals which are not malleable and ductile. The truth is established based on earlier evidence or observation. Inductive arguments are based on laws of nature, which are formulated on the basis of certain recurring phenomena with uniformity. For example, it is an established law that:

- ✓ 1) all living things reproduce,
- ✓ 2) fish is an aquatic animal,
- ✓ 3) Ice melts on heating.

We come across many such uniform patterns of occurrences based on which we arrive at inductive arguments. In inductive reasoning, the conclusion is only probable and not certain.

The difference between deductive and inductive reasoning depends on the strength of evidence to the premises, which the author believes, to provide for the conclusion. The difference does not depend on the content of the subject matter of the argument. Much depends on the strength of the justification, which the author intends that the premises provide for the conclusion. A logically invalid argument may emerge wherein the premises though true, may provide no support for the conclusion. Consider the example:

- ✓ All odd numbers are integers.
- ✓ All even numbers are integers.
- ✓ = Therefore, all odd numbers are even numbers.

If the author argues that the premises are true and thus the conclusion is true, then the argument becomes deductive, although a bad deductive argument. **Limitations of inductive reasoning** are that it too does not by itself lead to advancement of knowledge. The inherent limitation is that it can be applied only to as many instances as can be observed. **See the table below about two examples of deductive and inductive logic as formal sources of knowledge.**

Deductive Logic	Inductive Logic
• All men are mortal • Socrates is a man • Therefore, Socrates is mortal • X ……. • X …… • **= True**	• The sun came up September 1 • The sun came up September 2 • The sun came up September 3 • The sun will come up next September • X …….. • **= Understood**

• **= Certain** • **= Complete 100 %** • **= Rational and reason** • **= Form general to specific** • **= From known to unknown** • **= Reasoning and mental** • **= It systematize the existing knowledge to generate new knowledge**	• = **Not certain but probable** • = **Incomplete beyond 50 %** • = **Empirical and experience** • **= From specific to general** • **= From known to unknown** • **= Observation and sensory** • **= it can be applied to many observed instances without advancing knowledge**
Inductive + deductive methods = The scientific method • = The synthesis of methods of reasoning and observations were combined to result in the scientific method of generating knowledge. • = Scientific method thus combines inductive and deductive methods of reasoning. • = The investigator first operates inductively from observation to hypotheses to their implications. • = Hypotheses, based on inductive and deductive methods, lead to the logical consequences of the hypotheses. • = By combining both inductive and deductive one arrives at reliable knowledge. • = The scientific method can be used to teach all subjects in the curriculum.	

3. 5. Scientific Method (Inductive-Deductive Method)

The scientific method of acquiring knowledge was propounded by Francis Bacon. He believed that investigators should arrive at conclusions by observing facts. The synthesis of methods of reasoning and observations were combined to result in the scientific method of generating knowledge. (IGNOU, 2007) Scientific method thus combines inductive and deductive methods of reasoning. According to Mouly (1978), the scientific method consists of **"a back and forth movement in which the investigator first operates inductively from observation to hypotheses to their implications, in order to check their validity from the standpoint of compatibility with accepted knowledge".** Therefore, scientific method aims at discovering facts. But these facts have to be arrived at through a process of reflective thinking and enquiry. Unlike methods of gaining knowledge from experience, authority, customs, traditions, folk-lore, it strives to attain knowledge through systematic process of enquiry and investigation. The basic steps involved in scientific method are:

- **1)** experiencing a difficulty or a problem situation,
- **2)** defining the problem - the problem or difficulty based on observation of facts is defined in concrete terms,

- **3)** formulating hypotheses or intelligent guesses that are made about the probable solutions to the problem,
- **4)** Collecting evidences or data to test the probable solutions or hypotheses. These are collected through observation, experimentation or testing,
- **5)** Verifying or testing the hypotheses: Evidences are collected to confirm or discard the hypotheses.

4. Two Paradigms of Knowledge

A second important issue in epistemology concerns the ultimate source of our knowledge. There are two traditions: **empiricism**, which holds that our knowledge is primarily based in experience, and **rationalism**, which holds that our knowledge is primarily based in reason. Although the modern scientific worldview borrows heavily from empiricism, there are reasons for thinking that a synthesis of the two traditions is more plausible than either of them individually.

4. 1. Empiricism

Empiricists hold that all of our knowledge is ultimately derived from our senses or our experiences. They therefore deny the existence of innate knowledge, i.e. knowledge that we possess from birth. Empiricism fits well with the scientific world-view that places an emphasis on experimentation and observation. It struggles, however, to account for certain types of knowledge, e.g. knowledge of pure mathematics or ethics. Empiricism is the theory that experience is of primary importance in giving us knowledge of the world. Whatever we learn, according to empiricists, we learn through perception.

4. 2. Rationalism

Rationalists hold that at least some of our knowledge is derived from reason alone, and that reason plays an important role in the acquisition of all of our knowledge. There is clearly a limit to what we can learn through abstract thought, but the rationalist's claim is that reason play a role in observation, and so that the mind is more fundamental than the senses in the process of knowledge-acquisition.

Rationalism holds, in contrast to empiricism, that it is reason, not experience that is most important for our acquisition of knowledge. There are three distinct types of knowledge that the rationalist might put forward as supporting his view and undermining that of the empiricist.

Note

Take the children to the school garden. Ask them to identify different parts of the plants. Describe the function of leaves.

- Data: Show them a leaf, flower, stem, and bud.

- Information: Leaf, flower and stem are parts of a flowering plant. Leaf is green in color. Flowers are colored and even white. Stems may be brown or green colored.
- Knowledge: Green color of a leaf is due to the presence of pigment chlorophyll, which is essential for preparation of food.
- Understanding: Plants prepare their own food with the help of leaves. Leaves perform an important function.
- Wisdom: Why are leaves important? Make a list of some leafy vegetables that you eat.

Summary

In this lecture we discussed the following:

- Life experiences, customs and traditions are rich sources of knowledge for learners. Learners should be given the opportunity to learn in their social and cultural contexts. Their natural tendencies of questioning and curiosity should be nurtured by the teachers.
- Inductive-deductive methods of acquiring knowledge were described. Teachers should employ thought provoking questions which make children aware of their own reasoning abilities. The skill of observation must be emphasized so that children take note of features of the events and arrive at conclusions by making logical connections.
- Adoption of scientific method and social inquiry methods of acquiring knowledge were described. These methods are very important for developing skills of inquiry among learners.

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Practice

Focus Questions

1. What is the meaning of the term “knowledge”?
2. What is the meaning of the term “knowing”?
3. What is the distinction between knowing and knowledge?
4. What are the ways of knowing?
5. What are the sources of knowledge?

Exercise 1 Context of Learning

Talk to children about how they decorate their houses. This will also bring out the different times and occasions and the locally available materials which they use to decorate their houses. You can also discuss how decorations vary depending on the festival or occasion. Ask them to bring pictures, photographs depicting different areas of houses done up in a variety of ways. The discussion can be based on some of these questions:

1. Is there any special way in which you decorate your house?
2. When do you do so?
3. How do you decorate the house?
4. Discuss in groups when and how they decorate their houses.
5. Make a list of things with which you decorate your house.

Exercise 2: Life Experiences

Lesson on Water: Class 3(Looking Around, EVS textbook for Class 3,NCERT) Ask the children to read/recite a poem/song on water. The poem may mention many forms of water and refer to different kinds of water bodies. After recitation ask the children to:

1. Make a list of water bodies mentioned in the poem and any other that you may know.
2. Put a tick mark on activities for which water is needed: to dance, to swim, to read, to make tea, to paint , to write, to play guitar, for gardening, to clean the house.
3. Put a circle round the places from where you get water for your daily use: lake, well, tap, tube well, hand pump, river, tank, and stream.

Exercise 3: Authority

In a lesson for Class 3 students on postal communication, you can ask the children to discuss with elders at home on how letters were delivered in old times. For example, the elders may tell their children that messengers were carrying messages of kings and subjects to far-off places. Similarly, trained pigeons were used to send letters to distant places. Although children are not exposed to these

experiences, they tend to believe information as true because they get them from the elders who are considered as authorities.

Exercise 4: Customs and Traditions

Help children to identify plants which are available in their immediate environment and are used as medicines. This will enhance their traditional knowledge of medicinal plants. After this the children can be given the following exercise: When you are sick do you take any medicine which we get from plants? What do you take when you ….

- Get hurt
- Have a stomach ache
- Have cough and cold
- Have a tooth ache

Exercise 5: the Scientific Method

1. Write down the steps of scientific method of knowledge acquisition.
2. Select a topic from the subject you teach. Describe how you will apply the scientific method of inquiry to provide learning experiences to children in your class. Discuss the skills and concepts you will develop through this approach.

Lecture Nine

Introduction into Scientific Research

Description of the Lecture

This lecture is about the scientific research. Throughout the lecture students will become familiar with many aspects of scientific research. The emphasis is put on the definition, meanings and objectives of the scientific research. The current lecture is made up of two main sections; theory and practice.

Objectives of the Lecture

On successful completion of the lecture, students should be able, among other things, to;

- ❖ Draw a simple diagram of the research process.
- ❖ Have realized the key objectives, purposes and significance of research while thinking and doing research.
- ❖ Be familiar with the paradigms of research and their meanings.
- ❖ Be familiar with the multiple types of research as well as their meanings.
- ❖ Have integrated the scientific criteria and foundations of the research process in the field of applied linguistics and education.

Introduction

Research project is a normal part of year course work in the university. This course gives an understanding of the primary functions and structural steps of the entire research process. This is because if the research project is carefully designed, genuinely conducted and co-ordinate, you derive a lot of value from the entire activity. This process is much of an intensive academic exercise, which gives you the process of scientific thinking and way of doing things.

1. Definition of Research

The term ‘Research’ consists of two words:

- Research = Re + Search
  - ✓ ‘Re’ means again and again and ‘Search’ means to find out something, the following is the process:
- Therefore, research means to observe the phenomena again and again from different dimensions. For example there are many theories of learning due to the observation from different dimensions.

- The research is a process of which a person observes the phenomena again and again and collects the data and on the basis of data he draws some conclusions.

Research is oriented towards the discovery of relationship that exists among phenomena of the world in which we live. The fundamental assumption is that invariant relationship exists between certain antecedents and certain consequents so that under a specific set of conditions a certain consequents can be expected to follow the introduction of a given antecedent.

2. Paradigms of Research

2. 1. Empirical versus Theoretical Research

The philosophical approach to research is basically of two types: empirical and theoretical. Applied linguistics research mainly follows the empirical approach, i.e. it is based upon observation and experience more than upon theory and abstraction. Epidemiological research, for example, depends upon the systematic collection of observations on the related phenomena of interest in defined populations. Moreover, even in abstraction with mathematical models, advances in understanding of disease occurrence and causation cannot be made without a comparison of the theoretical constructs with that which we actually observe in populations. Empirical and theoretical research complement each other in developing an understanding of the phenomena, in predicting future events, and in the prevention of events harmful to the general welfare of the population of interest.

Empirical research in the field of science can be qualitative or quantitative in nature. Generally, scientific research deals with information of a quantitative nature, and this manual deals exclusively with this type of research. For the most part, this involves the identification of the population of interest, the characteristics (variables) of the individuals (units) in the population, and the study of the variability of these characteristics among the individuals in the population. Thus the quantification in empirical research is achieved by three related numerical procedures: (a) measurement of variables; (b) estimation of population parameters (parameters of the probability distribution that captures the variability of observations in the population); and (c) statistical testing of hypotheses, or estimating the extent to which ‘chance’ alone may account for the variation among the individuals or groups under observation.

2. 2. Basic versus Applied Research

Research can be functionally divided into basic (or pure) research and applied research. Basic research is usually considered to involve a search for knowledge without a defined goal of utility or specific purpose. This kind of research is academic in nature and is undertaken in order to gain knowledge about phenomena that may or may not have applications in the near future, and to develop new techniques and procedures that form the body of research methodology. The main purpose of these types of research is to obtain empirical data which can be used to formulate, expand or evaluate a theory. It is not actually directed in design or purpose towards the solution of practical problems. The main aim

is to expand the frontiers of knowledge without the intention of having practical applications. However, the results may be applied eventually to practical problems that have social values. Let us use hotel management as an example. You will see that all the advances made in this area are dependent upon basic researches in foods and nutrition, catering and hospitalities. In the same way, the progress made in business administration practices has been related to progress in the discovery of economics theories, administrative theories and management theories.

Unlike basic research, this type is directed towards the solution to an immediate, specific and practical problem. It is the type of research which you can conduct in relation to actual problems and under the conditions in which they are found in practice. You can use the applied research to solve problems at the appropriate level of complexity. Take for instance in the area of business management, or administration or even your own area of specialization, you can depend on basic research for discovering the more general laws of management or administration, but you have to employ applied research to determine how these laws operate in the real situation if scientific changes are to be affected in our lives, this approach will continue to be very essential.

2. 3. Quantitative versus Qualitative Research

According to Leedy (1995) ***Quantitative research*** is an inquiry into a social or human problem, based on testing a theory composed of variables measured with numbers or figures and analyzed with statistical procedures in order to determine whether the predictive generalizations of the theory hold true. He also defines ***Qualitative research*** is an enquiry process of understanding a social or human problem, based on building a complex, holistic picture formed with words reporting detailed views of information, and conducted in a natural setting. Whereas quantitative research, sometimes referred to as the traditional, the positivist, the experimental or the empiricist approach, is typically used to answer questions about the relationships among measured variables with the purpose of explaining, predicting and controlling phenomena; the qualitative research is used to an answer questions about the nature of phenomena with the purpose of describing and understanding the phenomena from the participants points of view. The qualitative research is sometimes referred to as the interpretative, the naturalistic, the constructivist or the postpositive approach.

Mixed-methods approach to research: In some studies researchers use both qualitative and quantitative methods to answer their research questions. For example, Pragmatic researchers propose that even within the same study, quantitative and qualitative methods can be combined in creative ways to more fully answer research questions.

2. 4. Descriptive versus Analytical Research

Descriptive research includes surveys and fact-finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present. In social

science and business research we quite often use the term *Ex post facto research* for descriptive research studies. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening. Most *ex post facto research* projects are used for descriptive studies in which the researcher seeks to measure such items as, for example, frequency of shopping, preferences of people, or similar data. *Ex post facto studies* also include attempts by researchers to discover causes even when they cannot control the variables. The methods of research utilized in descriptive research are survey methods of all kinds, including comparative and correlational methods. In *analytical research*, on the other hand, the researcher has to use facts or information already available, and analyze these to make a critical evaluation of the material.

2. 5. Conceptual versus Empirical

Conceptual research is that related to some abstract idea(s) or theory. It is generally used by philosophers and thinkers to develop new concepts or to reinterpret existing ones. On the other hand, empirical research relies on experience or observation alone, often without due regard for system and theory. It is data-based research, coming up with conclusions which are capable of being verified by observation or experiment. We can also call it as experimental type of research. In such a research it is necessary to get at facts firsthand, at their source, and actively to go about doing certain things to stimulate the production of desired information. In such a research, the researcher must first provide himself with a working hypothesis or guess as to the probable results. He then works to get enough facts (data) to prove or disprove his hypothesis. He then sets up experimental designs which he thinks will manipulate the persons or the materials concerned so as to bring forth the desired information. Such research is thus characterized by the experimenter's control over the variables under study and his deliberate manipulation of one of them to study its effects. Empirical research is appropriate when proof is sought that certain variables affect other variables in some way. Evidence gathered through experiments or empirical studies is today considered to be the most powerful support possible for a given hypothesis.

2. 6. Longitudinal versus Cross-sectional Research

The main differences between **Longitudinal** and **Cross-sectional** studies concern the role of **time** in what is being investigated.

Longitudinal studies involve collecting data from the same individuals or groups at different points in time , with the researcher collecting data regularly over many weeks , months , or even years to examine how a particular individual or group changes over time . A typical **longitudinal** study might seek to compare one group of learners' performance of knowledge of a particular linguistic structure at times A, B, and C.

Cross-sectional studies on the other hand; data are typically collected at a single point in time, with the researcher looking for relationships or patterns in the data. For example, a cross-sectional study

might examine learners' knowledge of a linguistic structure by looking at data collected at one point in time from beginning, intermediate and advanced learners.

2. 7. Primary versus Secondary Research

There are two major sources of data that both basic and applied researchers can gather while conducting research

Secondary Research (Literature Reviews): In using secondary data, researchers examine what others have discovered about a particular topic. For example, if teachers want to know about the advantages and disadvantages of using peer review in a writing class, they can investigate what others have written on the topic. As McDonough and McDonough (1997) point out, when secondary data is used, "the outcome of the research is the establishment, publicizing, or utilization of something that somebody—not the researcher or the person commissioning it—already knows" (p. 37).

One example of a study using secondary data is Silva (1993). In this study Silva summarized the findings of 72 empirical research studies that compared L1 and L2 writers with regard to their composing processes and the features of their written texts. He then discussed what these findings suggest in general for designing an effective L2 writing program. Studies such as these are termed literature reviews**.**

Primary Research: In using primary data, researchers gather original data to answer a particular research question. That is to say, in such a research researchers gather first hand data, "the outcome is knowledge nobody had before" (p. 37). **e.g.,** we gather data directly from students who are learning a language rather than from secondary resources (books about students who are learning a language). *In fact this type of research is*

- ✓ *One of the* most rewarding locations for discovering current questions being asked by the applied linguistics community. The better versed we are in the research literature, the more aware we become of the missing pieces in our framework of knowledge.
- ✓ Many issues in primary research might lead us to raise important questions from previous research. For instance, sampling, the type of material used in a treatment, the method for administering a treatment, and the way in which the data were analyzed are often places where gaps might be found.
- ✓ Future research is needed to help complete the bigger picture before our own questions can be answered.

3. Types of Research

There are many types of applied linguistics research studies and there are also a number of ways in which they may be classified. Studies may be classified according to topic whereby the particular phenomena being investigated are used to group the studies. Some examples of applied linguistics research topics are: teaching methods, language learning, classroom interaction and management, cross-

cultural studies etc. Studies may also be classified according to whether they are exploratory or confirmatory.

3. 1. Exploratory Research

An exploratory study is undertaken in situations where there is a lack of theoretical understanding about the phenomena being investigated so that key variables, their relationships, and their (potential) causal linkages, are the subject of conjecture. In contrast a confirmatory study is employed when the researcher has generated a theoretical model (based on theory, previous research findings, or detailed observation) that needs to be tested through the gathering and analysis of field data. A more widely applied way of classifying educational research studies is to define the various types of research according to the kinds of information that they provide. Accordingly, educational research studies may be classified as follows:

3. 2. Descriptive Research

Many educational research methods are descriptive; that is, they set out to describe and to interpret *what is*. Descriptive research, according to Best, is concerned with: conditions or relationships that exist; practices that prevail; beliefs, points of views, or attitudes that are held; processes that are going on; effects that are being felt; or trends that are developing. At times, descriptive research is concerned with how, what *is* or *what exists* is related to some preceding event that has influenced or affected a present condition or event. (Best, 1970) Such studies look at individuals, groups, institutions, methods and materials in order to describe, compare, contrast, classify, analyze and interpret the entities and the events that constitute their various fields of inquiry. For example, a descriptive research of request speech act realization patterns of Algerian and English students to compare and analyze what are the linguistic similarities and differences between the two groups.

3. 3. Historical research

Historical research has been defined as the systematic and objective location, evaluation and synthesis of evidence in order to establish facts and draw conclusions about past events (Borg (1963). It is an act of reconstruction undertaken in a spirit of critical inquiry designed to achieve a faithful representation of a previous age. In other words, Historical research generates descriptions, and sometimes attempted explanations, of conditions, situations, and events that have occurred in the past. For example, a study that documents the evolution of teacher training programs since the turn of the century, with the aim of explaining the historical origins of the content and processes of current programs.

3 4. Correlational Research

Correlational techniques are generally intended to answer three questions about two variables or two sets of data. First, 'Is there a relationship between the two variables (or sets of data)?' If the answer to this question is 'yes', then two other questions follow: 'What is the direction of the relationship?' and 'What is the magnitude (degree)?' Therefore, correlational research involves the search for relationships between variables through the use of various measures of statistical association, and describes in quantitative terms the degree to which the variables are related. For example, a research that investigates the relationship between motivation and academic achievements falls within this type of research.

3. 5. Causal-Comparative or EX-POST FACTO research

This type of research suggests causal linkages between variables by observing existing phenomena and then searching back through available data in order to try to identify plausible causal relationships. In other words, both the effect and the alleged cause have already occurred and are studied by the researcher in retrospect. Kerlinger (1973) defines Ex-post Facto research as: "Systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable". For example, a study of factors related to student 'drop out' from secondary school using data obtained from school records over the past decade. Some authors categorize Ex-post facto studies into the category of descriptive research.

3. 6. Experimental Research

Experimental research is used in settings where variables defining one or more 'causes' can be manipulated in a systematic fashion in order to discern 'effects' on other variables. For example, an investigation of the effectiveness of two new textbooks using random assignment of teachers and students to three groups – two groups for each of the new textbooks, and one group as a 'control' group to use the existing textbook. Therefore, the primary characteristic of experimental research is manipulation of at least one variables and control over the other relevant variables so as to measure its effect on one or more dependent variables .The variable (s) which is manipulated is also called an independent variable(s), a treatment, an experimental variable(s) or the cause.

3. 7. Case Study Research

Generally refers to two distinct research approaches. The first consists of an in-depth study of a particular student, classroom, or school with the aim of producing a nuanced description of the pervading cultural setting that affects education, and an account of the interactions that take place between students and other relevant persons. For example, an in-depth exploration of the patterns of friendship between students in a single class falls within this type of research. The second approach to Case Study Research involves the application of quantitative research methods to non-probability

samples – which provide results that are not necessarily designed to be generalizable to wider populations. For example, a survey of the reading achievements of the students in one rural region of a particular country falls within this type of research.

3. 8. Ethnographic or Naturalistic Research

Usually consists of a description of events that occur within the life of a group – with particular reference to the interaction of individuals in the context of the sociocultural norms, rituals, and beliefs shared by the group. The researcher generally participates in some part of the normal life of the group and uses what he or she learns from this participation to understand the interactions between group members. For example, a detailed account of the daily tasks and interactions encountered by a school principal using observations gathered by a researcher who is placed in the position of 'Principal's Assistant' in order to become fully involved in the daily life of the school.

Summary

Scientific inquiry is one of the most challenging enterprises of mankind, and the support that it receives is a measure of the strength, vitality and vision of a society. It becomes evident therefore that a researcher deals with a wide range of associations, from concrete day to day activities and problems to a philosophical level of search for truth. We can then capture in a hierarchical or taxonomic fashion the main purpose of research as: - training, problem solving and search of truth or knowledge generation.

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Practice

Focus Questions

1. What is the definition of the scientific research?
2. Compare and contrast between the research and scientific research
3. Explain the meaning of the research as a process but not a single action

4. Compare and contrast between the qualitative and qualitative research

Exercise 1

Define the following terms concisely and precisely.

1. **Everyday research** ……
2. **Scientifics research** ……
3. **Applied linguistics research** …….
4. **Inductive reasoning** ……...……
5. **Process action** ……
6. **Primary research** ……..
7. **Ethnography research** …….
8. **Inductive reasoning** ……...
9. **Scientific knowledge** ……..……
10. **Quai experimental research** …….
11. **Secondary research** ……..……...

Exercise 2

1. Quantitative research inquirers into social or human problem based on testing of theory composed of variables measured with numbers or figures and analyzed with statistical procedures in order to determine if the predictive generalization of a theory holds true. But qualitative research deals with the understanding of a social or human problem based on building a complex, holistic picture formal with words reporting detailed views of informants and conducted in a natural setting. The purposes of research are:
    - Training in research
    - Problem solving and
    - Searching for truth.

2. Research is a systematic process of collecting, analyzing and interpreting information in order to increase our understanding of the phenomenon with which we are interested. The characteristic of research are:
    - **(a)** Objectivity
    - **(b)** precision
    - **(c)** Design and
    - **(d)** Verifiability.
3. Write an essay in which you compare quantitative and qualitative approaches in terms of research methods and data gathering tools.

Lecture Ten

The Scientific Method

Description of the Lecture

This lecture is about the scientific method. Throughout the lecture students will become familiar with many aspects of the scientific method. The emphasis is put on the definition, meanings steps and procedures of the scientific method. The current lecture is made up of two main sections; theory and practice.

Objectives of the Lecture

On successful completion of the lecture, students should be able, among other things, to;

- Define the scientific method.
- Understand the importance of the scientific method to increasing knowledge.
- To realize the process and methodology of academic research through the scientific method.
- To learn about the key steps of the scientific method.

Introduction

In this lecture, you will discover the nature, meanings and the steps of the scientific method to a very simple investigation. You and your group will make readings about the deeps of the scientific method. You will analyze and deepen more your readings about the related ones to the scientific method.

1. The Nature Scientific Method

Scientific method refers to a body of techniques for investigating phenomena, acquiring new knowledge, or correcting and integrating previous knowledge. To be termed scientific, a method of inquiry must be based on gathering observable, empirical and measurable evidence subject to specific principles of reasoning. A scientific method consists of the collection of data through observation and experimentation, and the formulation and testing of hypotheses. As have indicated in cited references knowledge is more than a static encoding of facts, it also includes the ability to use those facts in interacting with the world.

The scientific method is a systematic framework for experimentation that allows researchers to make objective statements about phenomena and gain knowledge of the fundamental workings of a system under investigation. The scientific method can also be seen as a social contract, a set of conventions that the community of researchers agrees to follow to everyone's benefit, rather than the one and only path to knowledge. The reasons for its existence are practical. The goal of adopting a

universally accepted set of guidelines is to be able to gain confirmable knowledge and insight into patterns of behavior that can be modeled systematically and can be reproduced in an experimental environment, under the assumption of there being a fundamental cause that drives the observed phenomena.

Scientific method **is the general process of advancing scientific knowledge through observation, the framing of laws, hypotheses, or theories; and the conducting of more experiments.** It is not a method for carrying out a specific program, because the design of experiments and the explanations of results draw on the creativity and individuality of a researcher. The scientific method, then, has three basic elements:

1. First, you come up with the idea.
2. Next, you perform your experiments and make observations to test the idea.
3. Finally, you interpret your results, and discard or modify your original idea if it is in conflict with the results.

The scientific method is not a recipe: it requires intelligence, imagination, and creativity. It is also an ongoing cycle, constantly developing more useful, accurate and comprehensive models and methods. For example, when Einstein developed the Special and General Theories of Relativity, he did not in any way refute or discount Newton's *Principia*. On the contrary, if the astronomically large, the vanishingly small, and the extremely fast are reduced out from Einstein's theories — all phenomena that Newton could not have observed — Newton's equations remain. Einstein's theories are expansions and refinements of Newton's theories and, thus, increase our confidence in Newton's work.

2. Deductive and Inductive Research Strategies

The systematic nature of science involves the use of both inductive and deductive research strategies. **Inductive reasoning** involves the formulation of a general principle or theory based on a set of specific observations. Conversely, **deductive reasoning** involves the formulation of specific observational predictions based on a general principle or theory. **Figure 2** depicts the direction of reasoning. Notice that with inductive reasoning, multiple observations lead to one theory. With deductive reasoning, one theory leads to multiple predictions.

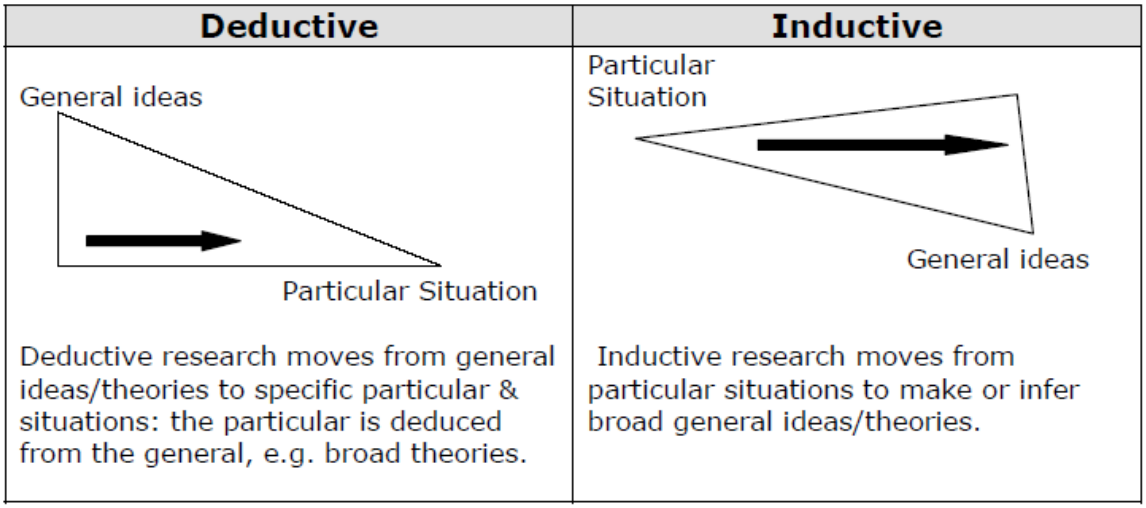

Figure 2: Deductive and Inductive Research Strategies

Examples of Deductive/Inductive Research in Action Imagine you wanted to learn what the word 'professional' meant to a range of people. **Deductive Approach is when it** is clear that you would want to have a clear theoretical position prior to collection of data. You might therefore research the subject and discover a number of definitions of 'professional' from, for example, a number of professional associations. You could then test this definition on a range of people, using a questionnaire, structured interviews or group discussion. You could carefully select a sample of people on the basis of age, gender, occupation etc. The data gathered could then be collated and the results analyzed and presented. This approach offers researchers a relatively easy and systematic way of testing established ideas on a range of people. **While Inductive Approach** If you adopted this approach you might start by talking to a range of people asking for their ideas and definitions of 'professional'. From these discussions you could start to assemble the common elements and then start to compare these with definitions gained from professional associations. The data gathered could then be collated and the results analyzed and presented. This approach might lead you to arrive at a new definition of the word – or it might not! This approach can be very time-consuming, but the reward might be in terms of arriving at a fresh way of looking at the subject.

3. The Steps of the Scientific Method

Before embarking on the details of research methodology and techniques, it seems appropriate to present a brief overview of the research process. Research process consists of series of actions or steps necessary to effectively carry out research and the desired sequencing of these steps. So the research process consists of a number of closely related activities, as shown through I to VII. But such activities overlap continuously rather than following a strictly prescribed sequence. At times, the first step determines the nature of the last step to be undertaken. If subsequent procedures have not been taken into account in the early stages, serious difficulties may arise which may even prevent the completion of the study. One should remember that the various steps involved in a research process are not mutually

exclusive; nor are they separate and distinct. They do not necessarily follow each other in any specific order and the researcher has to be constantly anticipating at each step in the research process the requirements of the subsequent steps. However, the following order concerning various steps provides a useful procedural guideline regarding the research process. In other words, a linearized, pragmatic scheme of the points above is sometimes offered as a guideline for proceeding:

1. formulating the research problem;
2. extensive literature survey;
3. developing the hypothesis;
4. preparing the research design;
5. determining sample design;
6. collecting the data;
7. execution of the project;
8. analysis of data;
9. hypothesis testing;
10. generalizations and interpretation, and
11. Preparation of the report or presentation of the results, i.e., formal write-up of conclusions reached. A brief description of the above stated steps will be helpful.

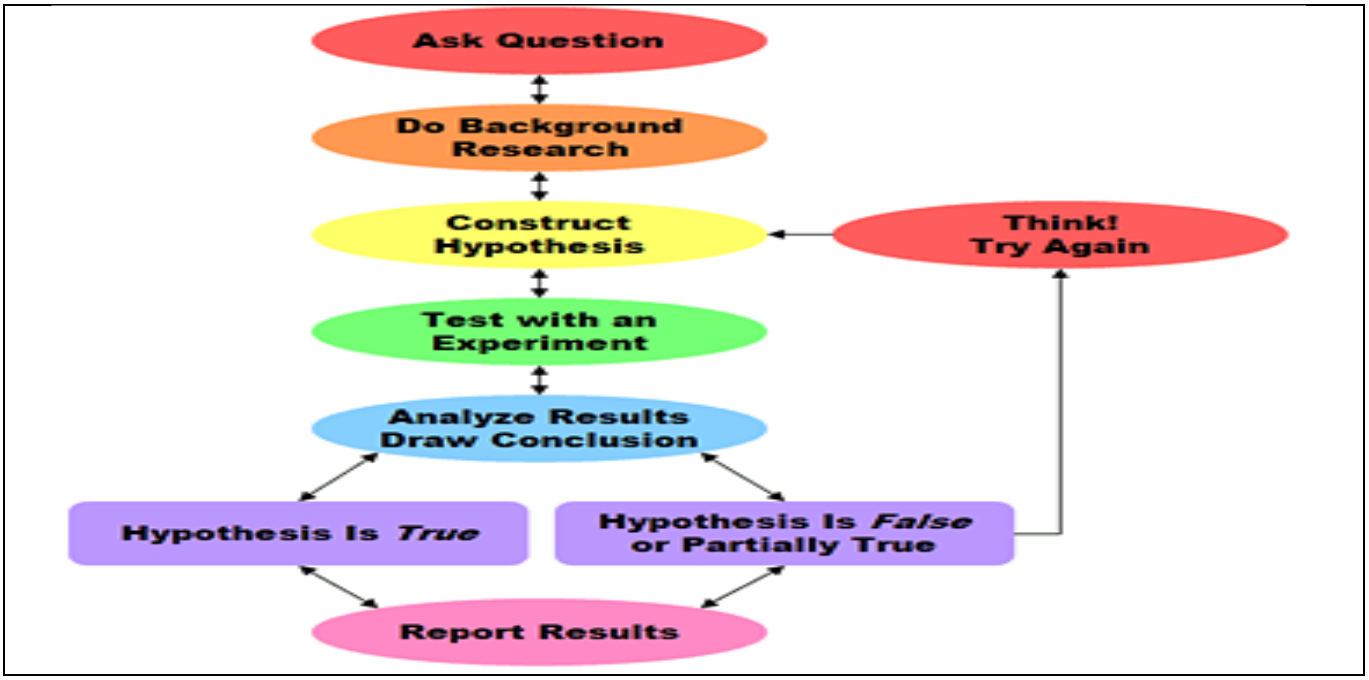

Figure 5: The Skeleton of the Scientific Method

3. 1. Formulating the Research Problem

There are two types of research problems, viz., those which relate to states of nature and those which relate to relationships between variables. At the very outset the researcher must single out the problem he wants to study, i.e., he must decide the general area of interest or aspect of a subject-matter that he would like to inquire into. Initially the problem may be stated in a broad general way and then

the ambiguities, if any, relating to the problem be resolved. Then, the feasibility of a particular solution has to be considered before a working formulation of the problem can be set up. The formulation of a general topic into a specific research problem, thus, constitutes the first step in a scientific enquiry. Essentially two steps are involved in formulating the research problem, viz., understanding the problem thoroughly, and rephrasing the same into meaningful terms from an analytical point of view.

3. 2. Extensive literature review

Once the problem is formulated, a brief summary of it should be written down. It is compulsory for a research worker writing a thesis for a Ph.D. degree to write a synopsis of the topic and submit it to the necessary Committee or the Research Board for approval. At this juncture the researcher should undertake extensive literature survey connected with the problem. For this purpose, the abstracting and indexing journals and published or unpublished bibliographies are the first place to go to. Academic journals, conference proceedings, government reports, books etc., must be tapped depending on the nature of the problem. In this process, it should be remembered that one source will lead to another. The earlier studies, if any, which are similar to the study in hand, should be carefully studied. A good library will be a great help to the researcher at this stage.

3. 3. Development of working hypothesis

After extensive literature survey, researcher should state in clear terms the working hypothesis or hypotheses. Working hypothesis is tentative assumption made in order to draw out and test its logical or empirical consequences. As such the manner in which research hypotheses are developed is particularly important since they provide the focal point for research. They also affect the manner in which tests must be conducted in the analysis of data and indirectly the quality of data which is required for the analysis. In most types of research, the development of working hypothesis plays an important role. Hypothesis should be very specific and limited to the piece of research in hand because it has to be tested. The role of the hypothesis is to guide the researcher by delimiting the area of research and to keep him on the right track. It sharpens his thinking and focuses attention on the more important facets of the problem. It also indicates the type of data required and the type of methods of data analysis to be used. How does one go about developing working hypotheses? The answer is by using the following approach:

1. Discussions with colleagues and experts about the problem, its origin and the objectives in seeking a solution;
2. Examination of data and records, if available, concerning the problem for possible trends, peculiarities and other clues;
3. Review of similar studies in the area or of the studies on similar problems; and

4. Exploratory personal investigation which involves original field interviews on a limited scale with interested parties and individuals with a view to secure greater insight into the practical aspects of the problem.

3. 4. Preparing the Research Design

There are several research designs, such as, experimental and non-experimental hypothesis testing. Experimental designs can be either informal designs (such as before-and-after without control, after-only with control, before-and-after with control) or formal designs (such as completely randomized design, randomized block design, Latin square design, simple and complex factorial designs), out of which the researcher must select one for his own project. The preparation of the research design, appropriate for a particular research problem, involves usually the consideration of the following:

1. the means of obtaining the information;
2. the availability and skills of the researcher and his staff (if any);
3. explanation of the way in which selected means of obtaining information will be organized and the reasoning leading to the selection;
4. the time available for research; and
5. The cost factor relating to research, i.e., the finance available for the purpose.

3. 5.Determining Sample Design

The researcher must decide the way of selecting a sample or what is popularly known as the sample design. In other words, a sample design is a definite plan determined before any data are actually collected for obtaining a sample from a given population. Thus, the plan to select 12 of a city's 200 drugstores in a certain way constitutes a sample design. Samples can be either probability samples or non-probability samples. With probability samples each element has a known probability of being included in the sample but the non-probability samples do not allow the researcher to determine this probability. Probability samples are those based on simple random sampling, systematic sampling, stratified sampling, cluster/area sampling whereas non-probability samples are those based on convenience sampling, judgment sampling and quota sampling techniques. In practice, several of the methods of sampling described above may well be used in the same study in which case it can be called mixed sampling. It may be pointed out here that normally one should resort to random sampling so that bias can be eliminated and sampling error can be estimated. But purposive sampling is considered desirable when the universe happens to be small and a known characteristic of it is to be studied intensively. Also, there are conditions under which sample designs other than random sampling may be considered better for reasons like convenience and low costs. *The sample design to be used must be decided by the researcher taking into consideration the nature of the inquiry and other related factors*.

3. 6. Collecting the Data

In dealing with any real life problem it is often found that data at hand are inadequate, and hence, it becomes necessary to collect data that are appropriate. There are several ways of collecting the appropriate data which differ considerably in context of money costs, time and other resources at the disposal of the researcher. Primary data can be collected either through experiment or through survey. If the researcher conducts an experiment, he observes some quantitative measurements, or the data, with the help of which he examines the truth contained in his hypothesis. But in the case of a survey, data can be collected by any one or more of the following ways:

1. **By Observation:** This method implies the collection of information by way of investigator's own observation, without interviewing the respondents. The information obtained relates to what is currently happening and is not complicated by either the past behaviour or future intentions or attitudes of respondents. This method is no doubt an expensive method and the information provided by this method is also very limited. As such this method is not suitable in inquiries where large samples are concerned.
2. **Through personal interview***:* The investigator follows a rigid procedure and seeks answers to a set of pre-conceived questions through personal interviews. This method of collecting data is usually carried out in a structured way where output depends upon the ability of the interviewer to a large extent.
3. **Through Telephone Interviews:** This method of collecting information involves contacting the respondents on telephone itself. This is not a very widely used method but it plays an important role in industrial surveys in developed regions, particularly, when the survey has to be accomplished in a very limited time.
4. **By mailing of Questionnaires:** The researcher and the respondents do come in contact with each other if this method of survey is adopted. Questionnaires are mailed to the respondents with a request to return after completing the same. It is the most extensively used method in various economic and business surveys. Before applying this method, usually a Pilot Study for testing the questionnaire is conduced which reveals the weaknesses, if any, of the questionnaire. Questionnaire to be used must be prepared very carefully so that it may prove to be effective in collecting the relevant information.
5. **Through Schedules:** Under this method the enumerators are appointed and given training. They are provided with schedules containing relevant questions. These enumerators go to respondents with these schedules. Data are collected by filling up the schedules by enumerators on the basis of replies given by respondents. Much depends upon the capability of enumerators so far as this method is concerned. Some occasional field checks on the work of the enumerators may ensure sincere work.

The researcher should select one of these methods of collecting the data taking into consideration the nature of investigation, objective and scope of the inquiry, financial resources, available time and the desired degree of accuracy. Though he should pay attention to all these factors but much depends upon the ability and experience of the researcher. To this stage the in collection of statistical data commonsense is the chief requisite and experience the chief teacher.

3. 7. Analysis of the Data

After the data have been collected, the researcher turns to the task of analyzing them. The analysis of data requires a number of closely related operations such as establishment of categories, the application of these categories to raw data through coding, tabulation and then drawing statistical inferences. The unwieldy data should necessarily be condensed into a few manageable groups and tables for further analysis. Thus, researcher should classify the raw data into some purposeful and usable categories. *Coding* operation is usually done at this stage through which the categories of data are transformed into symbols that may be tabulated and counted. *Editing* is the procedure that improves the quality of the data for coding. With coding the stage is ready for tabulation.

Tabulation is a part of the technical procedure wherein the classified data are put in the form of tables. The mechanical devices can be made use of at this juncture. A great deal of data, especially in large inquiries, is tabulated by computers. Computers not only save time but also make it possible to study large number of variables affecting a problem simultaneously.

Analysis work after tabulation is generally based on the computation of various percentages, coefficients, etc., by applying various well defined statistical formulae. In the process of analysis, relationships or differences supporting or conflicting with original or new hypotheses should be subjected to tests of significance to determine with what validity data can be said to indicate any conclusion(s). For instance, if there are two samples of weekly wages, each sample being drawn from factories in different parts of the same city, giving two different mean values, then our problem may be whether the two mean values are significantly different or the difference is just a matter of chance. Through the use of statistical tests we can establish whether such a difference is a real one or is the result of random fluctuations. If the difference happens to be real, the inference will be that the two samples come from different universes and if the difference is due to chance, the conclusion would be that the two samples belong to the same universe. Similarly, the technique of analysis of variance can help us in analyzing whether three or more varieties of seeds grown on certain fields yield significantly different results or not. In brief, the researcher can analyze the collected data with the help of various statistical measures.

3. 8. Hypothesis Testing

After analyzing the data as stated above, the researcher is in a position to test the hypotheses, if any, he had formulated earlier. Do the facts support the hypotheses or they happen to be contrary? This

is the usual question which should be answered while testing hypotheses. Various tests, such as Chi square test, *t*-test, *F*-test, have been developed by statisticians for the purpose. The hypotheses may be tested through the use of one or more of such tests, depending upon the nature and object of research inquiry. Hypothesis-testing will result in either accepting the hypothesis or in rejecting it. If the researcher had no hypotheses to start with, generalizations established on the basis of data may be stated as hypotheses to be tested by subsequent researches in times to come.

3. 9. Generalization and Interpretation

If a hypothesis is tested and upheld several times, it may be possible for the researcher to arrive at generalization, i.e., to build a theory. As a matter of fact, the real value of research lies in its ability to arrive at certain generalizations. If the researcher had no hypothesis to start with, he might seek to explain his findings on the basis of some theory. It is known as interpretation. The process of interpretation may quite often trigger off new questions which in turn may lead to further researches.

3. 10. Writing the Report

Finally, the researcher has to prepare the report of what has been done by him. Writing of report must be done with great care keeping in view the following:

1. The layout of the report should be as follows: **(*i*)** the preliminary pages; **(*ii*)** the main text, and **(*iii*)** the end matter. *In its preliminary pages* the report should carry title and date followed by acknowledgements and foreword. Then there should be a table of contents followed by a list of tables and list of graphs and charts, if any, given in the report. *The main text of the report* should have the following parts:
   - **(a) Introduction:** It should contain a clear statement of the objective of the research and an explanation of the methodology adopted in accomplishing the research. The scope of the study along with various limitations should as well be stated in this part.
   - **(b) Summary of Findings:** After introduction there would appear a statement of findings and recommendations in non-technical language. If the findings are extensive, they should be summarized.
   - **(c) Main Report:** The main body of the report should be presented in logical sequence and broken-down into readily identifiable sections.
   - **(d) Conclusion:** Towards the end of the main text, researcher should again put down the results of his research clearly and precisely. In fact, it is the final summing up.
   - *At the end of the report*, appendices should be enlisted in respect of all technical data. Bibliography, i.e., list of books, journals, reports, etc., consulted, should also be given in the end. Index should also be given specially in a published research report.
2. Report should be written in a concise and objective style in simple language avoiding vague expressions such as ‘it seems,’ ‘there may be’, and the like.

3. Charts and illustrations in the main report should be used only if they present the information more clearly and forcibly.
4. Calculated 'confidence limits' must be mentioned and the various constraints experienced in conducting research operations may as well be stated.

Summary

The scientific method is to reject, reinterpret, or reorganize entries in a way that maintains or enhances overall coherence. Sometimes whole inter-woven sections of the web must be rejected and replaced. But the decision and the process of doing this are not haphazard or whimsical. They are guided by objective standards of coherence. The small descriptive pieces are justified by their fit in the larger descriptive account of nature.

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- ✓ Kitcher, P., Science, Truth, and Democracy, Oxford University Press, 2002.
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- ✓ Quine, W.V. and Ullian, J. S., The Web of Belief, Random House, 1978. This is a short and very accessible book about the holistic network of our beliefs about the natural world.
- ✓ Scheffler, I., Science and Subjectivity, 2nd edn, Hackett, 1982. This level-headed discussion of subjective influences in science argues that objective results are nonetheless possible.

Practice

Focus Questions

1. What is the definition of the "scientific method"? Give examples.
2. What is meant by "do background research"? Give examples.
3. What is meant by "constructing hypothesis"? Give examples.
4. What is meant by "testing your hypothesis"? Give examples.

5. What is meant by “making conclusions”? Give examples.
6. What is meant by “report your results”? Give examples.
7. What is the purpose of the “scientific method”?
8. What should happen if a scientist finds evidence that contradicts a hypothesis, law, or principle?
9. Which is more reliable, an idea of a scientist who has an excellent reputation or a single verifiable experiment that shows the idea is wrong?
10. Is the following sentence true or false? Scientific findings are harder to verify or to disprove when they are expressed mathematically.
11. Is the following statement true or false? Following the steps of the scientific method exactly is an important part of the success of science.
12. In everyday speech, the word *theory* means……...
13. In science, the word *theory* means……..
14. Is the following statement true or false? Once an idea becomes a theory, it cannot be changed
15. Is the following statement true or false? Progress was much slower thousands of years ago than it is today
16. Is the inspiration for progress today similar to or different from the inspiration thousands of years ago?

Exercise 1

Match each term form Colum A to its definition in column B n the following table.

Term	Definition
Law or principle Fact Hypothesis science Scientific method Observation Literature review Experiment Research problem Scientific theory	**1.** Familiarizing oneself with the existing theory and research on a topic related to your area of interest **2.** A close agreement by competent observers who make a series of observations of the same phenomenon. **3.** Selecting a topic for research and defining key concepts **4.** It is an integrated, comprehensive explanations of many “facts” especially one that has been repeatedly tested or is widely accepted and can be used to make predictions about natural phenomena. **5.** It can be information directly perceived through the senses or information detected with instruments which extends our senses. **6.** It is designed to prove or disprove the hypothesis. If your prediction is correct, you will not be able to reject the hypothesis. **7.** An organized way to answer a question **8.** A hypothesis that has been tested over and over again and not contradicted

	9. A statement that is not fully accepted until demonstrated by experiment **10.** It is a process used to answer questions, solve problems, and better understand events in nature.

Exercise 2

Match each term to its definition.

Term	Definition
• Law or principle	a close agreement by competent observers who make a series of observations of the same phenomenon
• Fact	a hypothesis that has been tested over and over again and not contradicted
• Hypothesis	an educated guess that is not fully accepted until demonstrated by experiment
• Science	concerned with the source, purpose, and meaning of everything
• Arts	concerned with the value of human interactions as they pertain to the senses
• Religion	concerned with discovering and recording natural phenomena

Exercise 3: Multiple Choice

Put X next to the correct answer for each question or statement then justify your choice.

1. You begin to be a scientist when you
- Ask questions about things you wonder about.
- Find answers to questions you wonder about.
- Do experiment to prove why something happens.

2. When doing a scientific project following the scientific method, you should first
- Write a report describing how you will follow the scientific method.
- Do experiment or field work.
- State your hypothesis.

3. Find out information about your question so you can make a hypothesis.
- Conclusion
- Research

4. The scientific method is a process that involves following certain steps. Which of these steps would come first?
- Ask a question
- Make a hypothesis
- conduct an experiment

5. The Method of gathering information by using your senses is called a/an_____
   - Observation
   - experiment
   - conclusion
6. Make observations and compare what you thought would happen with your results of your experiment.
   - Conclusion
   - hypothesis
7. Scientists learn and study the world around them by using:
   - The Big Bang Theory
   - Characteristics of Life
   - Scientific Method
8. Which of the following experiments is MEASUREABLE?
   - McDonald's is a good place to buy coffee
   - McDonald's coffee cups keep coffee warmer for longer than Burger Kings
   - McDonald's is dirty inside

Exercise 4

<u>Question 1:</u> Fill in the blanks with the suitable word that makes the sense (senses, test, hypothesis, research problem, ideas, theory, scientists, conclusion, refute, natural, plausibility, data, experiments, investigation, process, scientific)

The……..…**1**……..method is a……..…**2**…….that ……**3**……Use to help them to ……..…**4**……new ideas. The first step usually involves the defining of the ……..…**5**…… the next step involves getting information and making observation of ……..…**6**……. Phenomena, a way in which this can be done by using one or more of the ……..…**7**……after initial observation has been made, the next step usually involves the scientist making an educated guess or a ……..…**8**……. This is a possible explanation of how and why the phenomena have been observed. The researcher may prove or ……..…**9**…… this possible explanation. Following this……**10**……may be carried out to determine the ……..…**11**…….of the explanation. This is usually done through one or more activities that are relatively known as……..…**12**…….after the observation has been recorded in a form of……**13**…… once the data are analyzed and interpreted, they become ……..…**14**……. Or laws and once laws are proved again and again they turn into a ……..…**15**……..

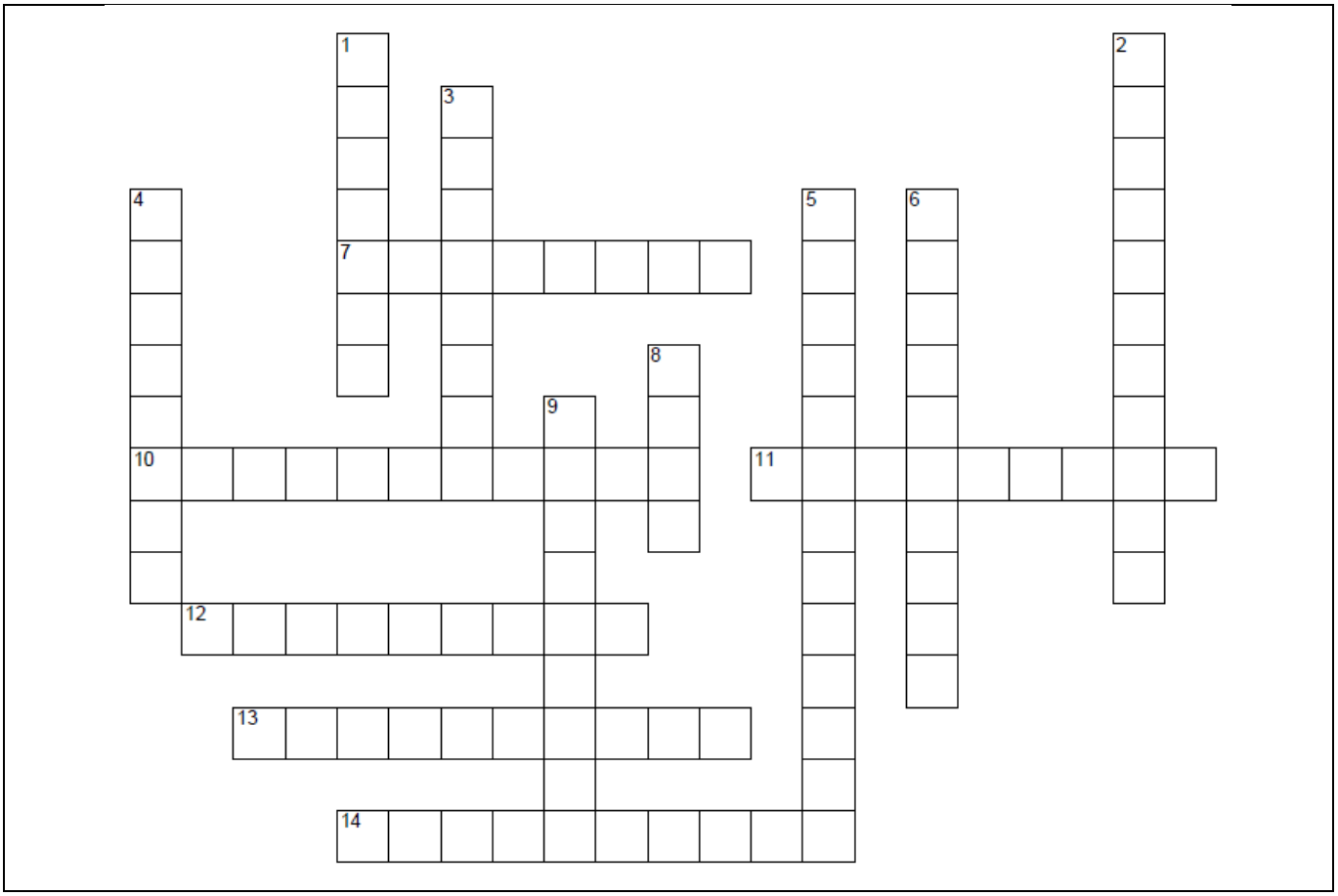
Exercise 5

The scientific method involves the construction of knowledge based upon observation, testing, and measurement. Non-science often involves a much different type of knowledge, which is based upon faith and cannot be experimentally tested. Identify each statement below as empirically based (E) or Non-empirically based (N). Give a brief explanation of your answers.

1. ___ Leonardo da Vinci is a better painter than Picasso.
2. ___ Alcohol consumption by pregnant women causes retardation & other birth defects.
3. ___ I know that there is a Supreme Being.
4. ___ the sun rises in the East each morning.
5. ___ Four out of 5 dentist's recommend Crest.
6. ___ Ibuprofen taken before strenuous exercise can reduce muscle ache afterward.
7. ___ People born between Aug 25 and Oct 1 should be concerned about failing the first test in Bill 150, however, people born between Oct 5 and Nov 19 will get an A on test 2.
8. ___Fetal tissue transplanted into the brains of patients with Parkinson's disease causes improvement in brain function in these patients.
9. ___ Tissue from fetuses should be harvested to cure Parkinson's patients.
10. ___ Tylenol is a better pain reliever than ibuprofen.

Exercise 6 Scientific Method Crosszord Puzzle

DOWN	ACROSS
1 Variables that remain constant	**7** Should be performed before the hypothesis
2 Variable that stands alone	**10** This variable is found on the x-axis
3 Start scientific method here	**11** Items changed in your experiment
4 This item should be able to be measured	**12** This variable is found on the y-axis
5 Graphs may be used at this step	**13** An educated guess
6 How you test the hypothesis	**14** Either accept or reject this
8 Collected during the experiment	
9 Variable that responds to other variable	
WORD BANK: Control, data, data-analysis, dependent, experiment, hypothesis, independent, question, research, variables	



Exercise 7: Scientific Method Crosszord Puzzle

Complete the crossword puzzle using the clues below.

Across

5. Scientists use this to represent things they cannot directly study

10. If your hypothesis is well tested, supported and verifiable, it might become a...

12. A type of variable that you do not change in an experiment

16. Another name for a variable that depends on another

18. You might display your data or information using a...

21. The things you record as you carry out your investigation

22. An explanation of a phenomenon that is to be tested

23. The tools that scientists use to acquire knowledge

Down

1. You arrive at this after carrying out your experiment

2. The types of observations you make using your 5 senses

3. The thing you do to learn more about your observations

4. These describe relationships between things you observe

6. A quick explanation of something that you observe

7. The evidence you collect as you conduct your experiment

8. Another name that is also commonly used for a variable that you can change

9. Something that can affect how the results of an experiment are viewed and are to be avoided

11. It is important to design an experiment that is easily...

13. A type variable that you can change in your experiment

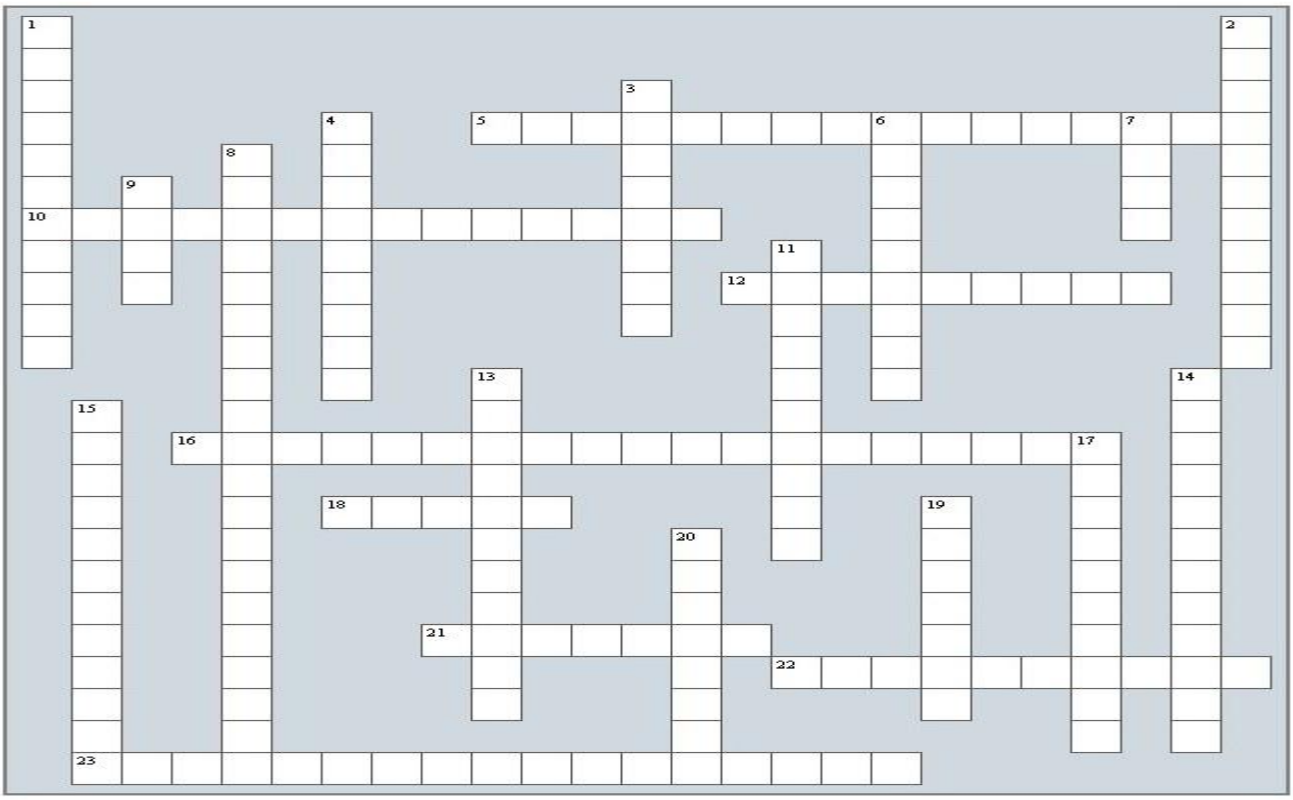
14. The types of observations you make when you count or measure something

15. These are usually the first things in your scientific investigation

17. Something that you carry out to test your hypothesis

19. The variable that you use to compare experimental results

20. A good hypothesis must be one that is...



Exercise 8: Scientific Method Crosszord Puzzle

Complete the crossword puzzle using the clues below.

Across

1. The process of testing a hypothesis by carrying out data-gathering procedures.

5. During a controlled experiment this group does not receive the independent variable.

6. Choosing a research ___ is the step in which you identify your variables and outline your procedure.

8. The responding variable that you look for during an experiment.

11. ___ the data is the step in which you organize your data into tables and graphs.

14. Drawing ___ is the seventh step in the scientific method when you report on your outcomes.

16. The manipulated variable that you control during an experiment.

17. Stating in advance the result that will be obtained from testing a hypothesis.

Down

2. Defining the ___ is the first step of the scientific method.

3. An excellent hypothesis is written in the

4. A good hypothesis is worded so that you can ___ it with an experiment.

7. The process of forming testable statements about observable phenomena.

8. Collecting the ___ is the fifth step in the scientific method.

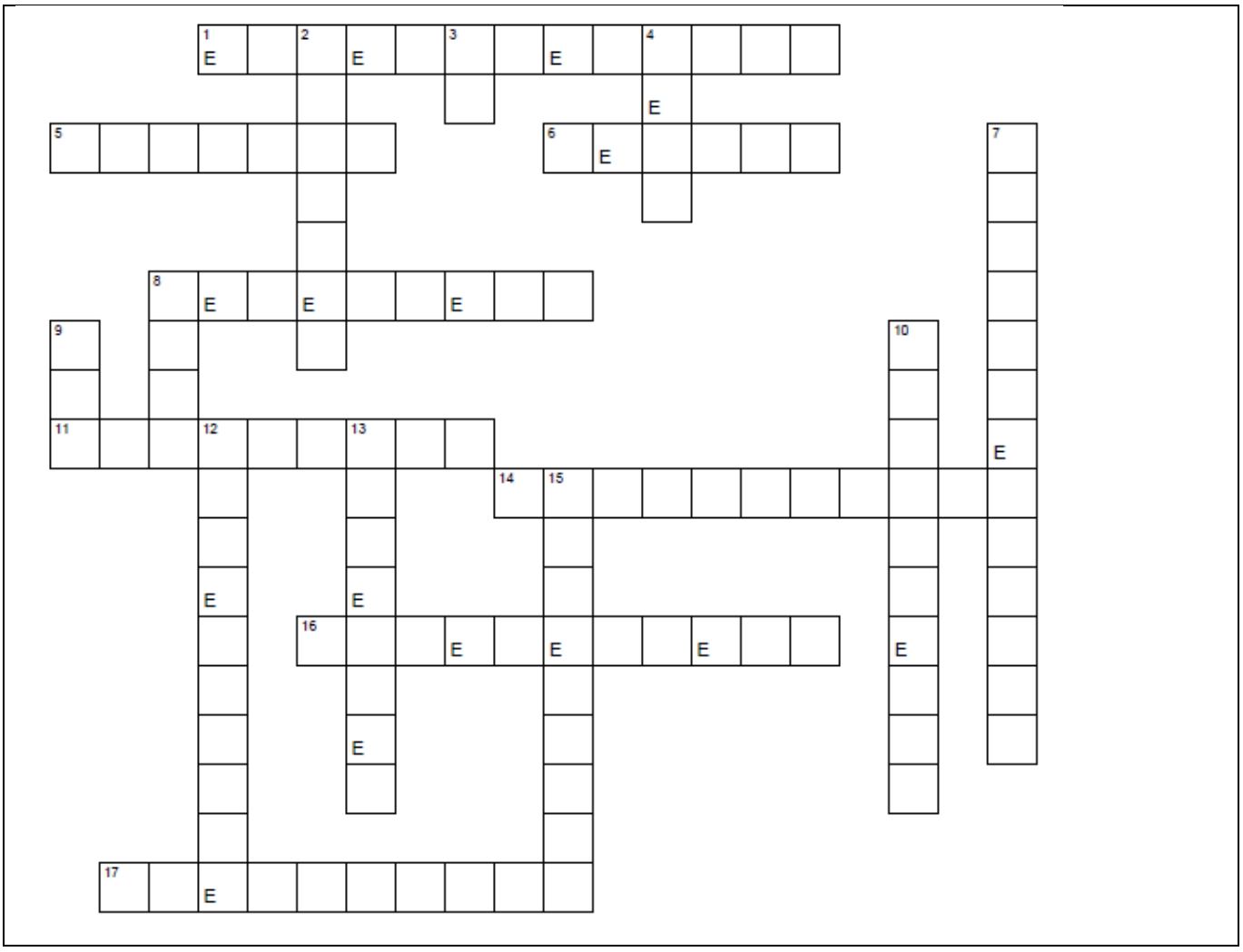
9. American Psychological Association report and bibliography format rules known as ___ style.

10. A carefully worded statement that predicts how the independent variable will affect the outcome.

12. Reviewing the ___ is the second step of the scientific method.

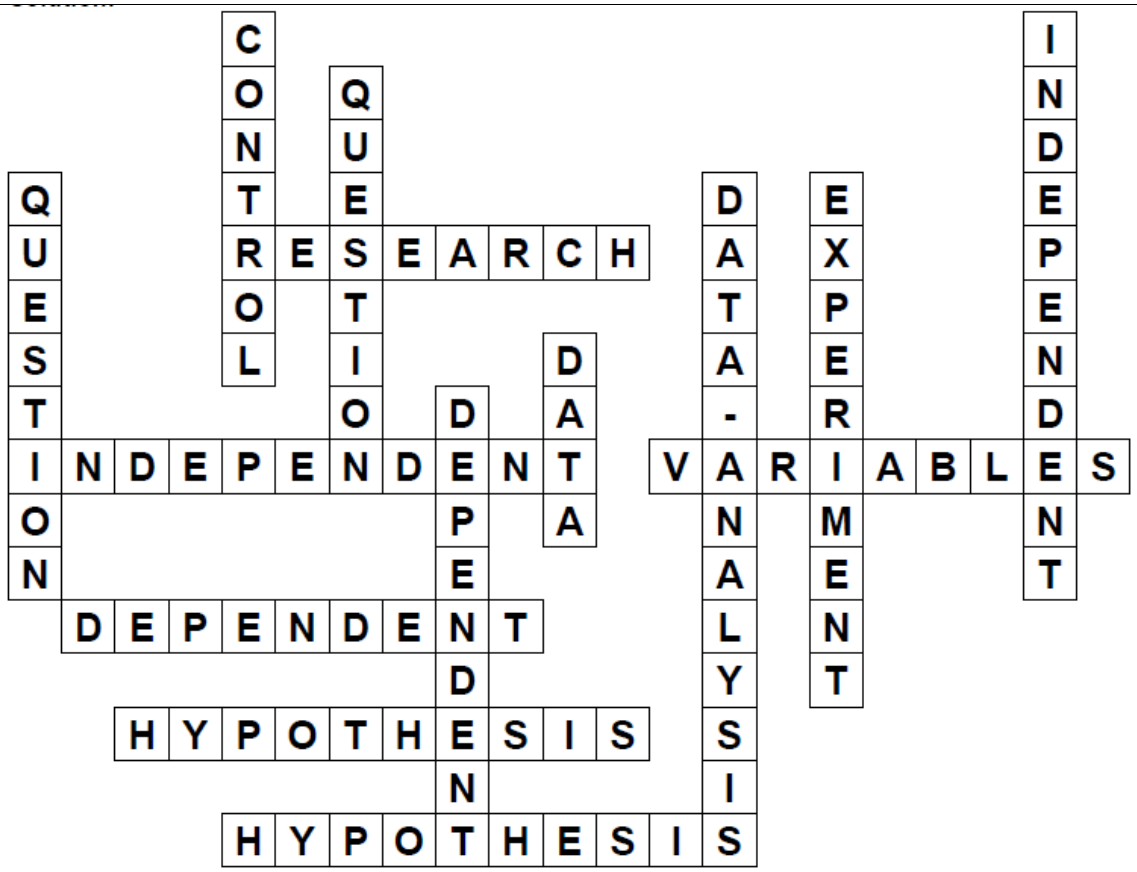
13. If a bibliographic citation is longer than one line, additional lines must be ___ five spaces.

15. The use of one or more of the five senses to perceive objects or events.



Keys and Solutions to Some Exercises

1. CONCLUSIONS	9. BIAS	17. EXPERIMENT
2. QUALITATIVE	10. SCIENTIFIC LAW	18. GRAPH
3. RESEARCH	11. REPEATABLE	19. CONTROL
4. VARIABLES	12. DEPENDENT	20. TESTABLE
5. SCIENTIFIC MODEL	13. INDEPENDENT	21. RESULTS
6. INFERENCE	14. QUANTITATIVE	22. HYPOTHESIS
7. DATA	15. OBSERVATIONS	23. SCIENTIFIC METHOD
8. MANIPULATED VARIABLE	16. RESPONDING VARIABLE	



Lecture Eleven

The Structure of the Dissertation

Description of the Lecture

This lecture is about the structure of the dissertation. Throughout the lecture students will become familiar with many aspects of the dissertation. The emphasis is put on the definition, meaning, and structure of the dissertation. The current lecture is made up of two main sections; theory and practice.

Aims of the Lecture

On successful completion of the lecture, students should be able, among other things, to;

- Be familiar with the meanings of the dissertation and thesis.
- Understand the differences between the dissertation and thesis.
- Learn about the structure of the dissertation.
- Understand the dissertation division into preliminary pages, general introduction, literature review, research methodology, data analysis and interpretation, results, implications, recommendation, references and appendices.

Introduction

The goal of academic research is not to show off everything that you know about your topic, but rather to show that you understand and can think critically about your topic (and this is what earns you a good grade). Plus, you will develop skills in researching, evaluating information, organizing, arguing, responding to others' arguments, analyzing, and expressing yourself clearly in writing in the language of instruction. These skills, by the way, are all valued by the target audience. As a response to this final university courses, this lecture details the place and structure of the master dissertation, that's why this guide was written.

1. Important Terms

Many academic degree programs include a piece of academic research such as a dissertation, or extended piece of writing based on broader research and reading. Some schools and departments may define it as a long project. Both your academic subject area and the level of award you are studying for will define what is required for your academic research. Generally, the following summaries identify the key features of the academic writing:

1. 1. Graduation and post-Graduation Studies

1. 2. Undergraduate Research

A dissertation provides a student with an opportunity to develop intellectual independence and to specialize in depth in a topic of interest. Especially in the humanities and social sciences, you will mostly be using secondary sources; that is, the existing scholarship published in journals, books etc. You will then develop your own critical analysis of these materials and their contribution to your research topic. However, some academic subject areas encourage students to use some primary sources or to produce data, especially – but not exclusively - in the sciences. Such sources/data may include experiments, case studies, questionnaires, or a focused study of selected archival documents.

1. 3. Masters Research

Your Dissertation should be an independent piece of work. An undergraduate Dissertation is not expected to be a wholly original contribution to knowledge, but it must be original in the sense of being an independent piece of writing, based on wide reading, and giving evidence of your own understanding and analysis of your subject. It usually covers a narrower field than a course based on lectures and seminars, and requires more thorough reading. Students are expected to demonstrate their ability to engage critically and analytically with primary texts and literary criticism. While the Dissertation topic may vary in scope between individual submissions, all dissertations must have a clear focus with definable boundaries. You will therefore need to find a research question, engage with relevant literature, and plan a schedule. It is very likely that at this level you will have to produce or identify a specific collection of primary sources or data. By conducting your own research, you begin to add to the scholarship already produced and add/develop your own critical analysis on your research topic. Usually, the Masters dissertation is a longer piece of writing than for undergraduate study, requiring more extensive reading and research to put your own critical interpretation of sources into the context of existing scholarship.

1. 4. Doctorate Research

Writing a doctoral thesis such as a PhD requires a student to make “an original contribution” to the existing knowledge on their research topic; that is, it should both identify and fill a gap in that knowledge. Primary source research is therefore a significant element of a PhD, whether this involves consulting archives or historical documentation, or producing empirical data from experiments, case studies, or questionnaires. However, do remember that despite the scale of a PhD (it can be up to 100,000 words in length), your work still has to be focused and the gap you are filling may be quite small even if it is intellectually significant. Despite thousands of books and theses already out there, each year people still find new things to write about the playwright William Shakespeare!

2. Thesis and Dissertation: What is the Difference?

The aim of both a thesis and dissertation is to give the student the opportunity to investigate or research a problem using principles and methodologies developed within the Diploma in the related field of interest course. By doing a thesis or dissertation students should master skills in:

- Developing a research proposal to explore a specific research question.
- identifying and accessing the resources necessary to undertake the investigation
- Reviewing and analyzing relevant literature.
- Choosing a research methodology appropriate to the problem and applying that methodology whether it is qualitative or quantitative.
- Reporting the project particularly its purpose, backgrounds, method, findings, conclusions, and recommendations.
- Interpreting the findings and identifying the wider implications of the research project especially on the related sample and population.

2. 1. Scope of a Dissertation

The dissertation counts for half or more credit points and so represents half the requirement for the degree required within the field of interest. The other half is from coursework. A dissertation will not often require primary data collection (see Data Collection below), that is, data collected by the student through interview or survey. It may require analysis of secondary data, that is, data extracted from routine data sources (e.g. ordinary governmental institutions statistics) or data already collected by a previous or wider study. A literature review alone is not usually considered sufficient for a dissertation, unless it is augmented by substantial critical discussion and debate, or with a proposal outlining methodology for new research, or if it is a formal systematic review. Length will vary with the nature of both the topic and the methodology used. It is expected that most texts will be around 80-100 pages, or 20-30,000 words, single-sided, including tables and appendices.

2. 2. Scope of a Thesis

The thesis represents one full time year's work or more and constitutes the full points of the degree of the academic field. The thesis will generally require data collection and analysis. This data will often be primary data (see Data Collection below), that is, data collected by the student through interview or survey, although secondary data may also be permitted, that is, data extracted from routine data sources (e.g. ordinary governmental institutions statistics). The length of the report will vary depending on the topic and method used. It is expected that most texts will consist of up to 200 pages, or 50-60,000 words, single-sided, including tables and appendices.

3. The Nature of Master Dissertation

The dissertation is the final stage of the Master's degree and provides you with the opportunity to show that you have gained the necessary skills and knowledge in order to organize and conduct a research project. It should demonstrate that you are skilled in identifying an area, or areas, suitable for research: setting research objectives; locating, organizing and critically analyzing the relevant secondary data and authoritative literature; devising an appropriate research methodology; analyzing the primary data selected and drawing on the literature in the field; drawing conclusions; and if appropriate making relevant recommendations and indications of areas for further research.

A dissertation is a 'formal' document and there are 'rules' that govern the way in which it is presented. It must have chapters that provide an introduction, a literature review, a justification of the data selected for analysis and research methodology, analysis of the data and, finally, conclusions and recommendations. Where the subject is based around a business or an applied situation recommendations for action may also be required. Advice on the range of suitable topics which relate to the subject area of your Master's degree will be approved by your Program Director or course dissertation co-coordinator.

The Masters level dissertation is distinguished from other forms of writing by its attempt to analyze situations in terms of the 'bigger picture'. It seeks answers, explanations, makes comparisons and arrives at generalizations which can be used to extend theory. As well as explaining **what can be done**, it addresses the underlying **why**. The most successful dissertations are those which are specific and narrowly focused.

This document is intended to guide you through the dissertation process. It can only offer suggestions; there is nothing that can be said which will guarantee the production of a fine piece of work, but these are suggestions which, through time, have been found to be both practical and effective. You should read this guide before starting your dissertation and consult it as necessary throughout the process. This will help you to make a start to your dissertation and make more effective use of your meeting sessions with your supervisor. Other useful references specific to your program can also be found for your program on Vision.

4. The Structure of the Dissertation

The Structure of the Dissertation

The Elements of the Dissertation

1. Preliminary Pages

1. 1. The Front Cover Page or the Title Page

1. 2. Abstracts

1. 2. 2. Key Words

1. 3. Dedication

1. 4. Acknowledgment

1. 5. Table of Contents

1. 6. List of Tables

1. 7. List of Figures

1. 8. List of Symbols

1. 9. List of Abbreviations and Acronyms

2. General Introduction = Chapter 1

2. 1. Background, Context and Theoretical Framework of the Study

2. 2. Statement of the Problem

2. 3. Research Questions and Hypotheses

2. 4. General Research Hypotheses

2. 5. Research Assumptions

2. 6. The Scope of the Study: Delimitations and Limitations

2. 7.Purpose of the Study

2. 8. Rational of the Study

2. 9. Significance of the Study

2. 10. The nature of the study

2. 11. Definitions and Operational Terms

2. 12. Organizations of the Dissertation

3. Literature Review = Chapter 2

3. 1. Introduction to the Literature Review

3. 2. Theoretical Framework or Conceptual Framework

3. 3. Review of the Literature

3. 4. Summary

4. Research Methodology = Chapter 3

4. 1. Introduction

4. 2. Research Questions or Hypothesis

4. 3. Research Approach

4. 4. 1. Research method

4. 5. Research Design

4. 6. Population, Samples and Sample Selection Procedures

4. 7. The Subject

4. 8. Data collection Procedures or Management

4. 9. Instrumentations or Sources of the Data

4. 10. Data Analysis Procedures

4. 11.Iuuses of validity

4. 12. Issues of Reliability

4. 13. Issues of Trustworthiness or Ethical Consideration

4. 12. Limitations and Delimitations in the Research Methodology Chapter

4. 13. Summary

5. Data Analysis and Interpretation = Chapter 4

5. 1. Data Introduction

5. 2. Data Classification and Organization

5. 3. Data Description and Reading

5. 4. Looking for Justifications to the Data

5. 5. Joining the Data with the Literature Review of the Study

5. 6. Results

5. 7. The discussion Section

5. 8. Summary of the Data Analysis Chapter

6. The Conclusions, Implications, Recommendations and General conclusion = Chapter 5

6. 1. Conclusions

6. 2. Implications

6. 3. Recommendations

6. 4. General Conclusion

7. List of References

8. Appendices

Summary

Writing a research paper requires patience and practice. There are some simple rules that can assist the novice author in constructing a paper, and there are common pitfalls to be avoided. I would caution that the proper planning of a study is the best way to avoid problems at the writing stage. No amount of clever writing can cover for poor study design or execution. The quality of a dissertation is not only evaluated on the quality of writing. It is also evaluated based on the criteria that have been established for each section of the dissertation.

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Practice

Focus Questions

1. What is the meaning of dissertation?
2. What is the meaning of thesis?
3. What are the differences between dissertation and thesis?
4. What is the macro structure of the dissertation?
5. What are the elements of the dissertation?
6. What is the format of the dissertation?

Exercise 1

Define the following terms concisely and precisely.

1. **Dissertation** ……..……..
2. **Thesis** ……..……
3. **Article** ……..……..
4. **Publication procedures** ……..…….
5. **The anatomy of the dissertation** ……..……
6. **Preliminary pages of the dissertation** ……..……
7. **Limitations of the Study** ……..…….
8. **Research methodology** ……..……
9. **Literature review** …….
10. **Results** ……...……
11. **Data analysis** ……..……

12. Data interpretation ……..

13. Recommendations ……..……..

14. Graduation research ……

15. Appendices ……

16. References …….

17. Bibliography ……..……

18. The format of the dissertation ……..…..

19. Post-graduation research ……...….

20. Delimitations of the Study ……..…….

Exercise 4

Write one of the following words or terms "Thesis, dissertation, limitations, Background, assumptions, front page, hypothesis, delimitations, data analysis, significance, literature review, publication, key terms, and appendices" in front of the right statement. Justify your choice.

1. They are used to place lengthy and detailed material that supports the main body of work……
2. It counts for full or more credit points and so represents half the requirement for the degree required within the field of interest. ……
3. They establish the conditions under which the study is assumed to be taking place…….
4. It answers the basic questions of WHY the investigation is important or valuable……..……
5. It should demonstrate a thorough knowledge of the area and provide arguments to support the study focus……...……
6. It establishes the limits or parameters that the investigator does not choose to include and to leave out……
7. It must include the full name of the researcher, supervisor, university and country……...…..
8. It is tentatively advanced to explain observed facts or phenomenon…….
9. It establishes the limits or parameters that the investigator chooses to include and to leave out.
10. They will be connected with the main theories displayed in the theoretical framework of the study in terms of agreement and disagreement…….……..
11. It is the logical result of any research project. After all the effort required for design, implementation, data collection, and data analysis, it is the crucial end point……..
12. It counts for half or more credit points and so represents half the requirement for the degree required within the field of interest……..……..
13. It contains a brief preliminary reference to literature pertinent to the research study……

14. They define the most frequently used terms within the study. These words and phrases selected for definition should be chosen to be included because they will lead to a better understanding of the study……..……

Exercise 5 Discuss the following examples about assumptions.

- For example, the following assumptions were present in this study:
  - It is assumed that survey participants in this study were not deceptive with their answers, and that the participants answered questions honestly and to the best of their ability. Provide an explanation to support this assumption.
  - 2. It is assumed that this study is an accurate representation of the current situation in rural southern Arizona. Provide an explanation to support this assumption.

- For example: The following limitations/delimitations were present in this study:
  - Lack of funding limited the scope of this study. Provide an explanation to support this limitation.
  - 2. The survey of high school students was delimited to only rural schools in one county within southern Arizona, limiting the demographic sample. Provide an explanation to support this delimitation.

Exercise 6

Have a sample of master dissertations then have a look to the organization, elements, and format of each paper then

- Analyze each paper in terms whether it match or mismatch the guideline presented in the lecture.
- List the missing elements and say whether they are some elements that can replace the missing ones in the dissertation.
- List the extra elements and say whether they are some elements that can replace the missing ones in the lecture.
- Use the lecture and all the dissertations to suggest the best working prototype of the anatomy of the master dissertation.

Lecture 12

Title Writing

Description of the Lecture

This lecture is concerned with the scientific title. Through the lecture students will become familiar with many aspects of the research paper titles as primary part of any research paper. The emphasis is put on the meanings, types, and guidelines for title writing. The current lecture is made up of two main sections; theory and practice.

Learning Objectives of the Lecture

On successful completion of the lecture, students should be able, among other things, to;

- Be familiar the definition of the term title.
- Discover the criteria of title writing.
- Apply the techniques for title writing.
- Discover different title for different papers.

Introduction

The title is not a section, but it is necessary and important. The title should be short and unambiguous, yet be an adequate description of the work. A general rule-of-thumb is that the title should contain the key words describing the whole work presented. Remember that the title becomes the basis for most on-line computer searches - if your title is insufficient, few people will find or read your paper. This lecture presents plenty of details about how to write a research paper title.

1. Definitions

Titles are labels that convey what a piece of writing is or what it is about. After reading your title, your readers will begin to make assumptions about your creativity, preparation, and expertise, so it is important to spend some time crafting a good one. Titles typically highlight the central question an essay investigates, and most will hint at the author's stance on that question. Although every paper you write for class will have a title, titling conventions vary by discipline. Your readers' initial sense of your authority in a particular subject area will be shaped, in part, by how your title demonstrates your understanding of the conventions in that field.

The title defines the contents of your manuscript in as few words as possible. An effective title "sells" your manuscript to the reader immediately and influences whether or not a reader will read the manuscript.

The title is essential in bringing your manuscript to the readers' attention, especially where the database being searched does not include the abstract of the article. It should include all essential words in the right order so the topic of the manuscript is accurately and fully conveyed. An excellent title is the key to ensuring your article will be found. An improperly titled paper may be lost and never reach its intended audience. Your title will be read by many more people than the rest of your manuscript. Indexing services will use the title to categorize your paper. Authors who cite your paper will include the title in their list of references, which, in turn, will be read by thousands of readers.

2. Getting the Title Right

Most electronic databases and search engines, and journal websites, use the words in the title or the keywords provided by the authors to retrieve the scientific paper during online searches. Therefore, having a good and inviting title should be a priority and responds to the following criteria.

2. 1. Keep it Concise

If the title is too long or complicated, it may put off the readers right at the onset. Use of about 10-12 words in the main title will enable you to bring out the essence of the research work (students, motivation, investigation, and outcome). Consider the following title: *"Investigating the role of significance of school counseling and guidance in helping male and female adolescent learners achieve better results in learning English as a second language in Algerian university."*

This would take ages to read. Not many people will have the patience to go through this with a clear head! Now consider: *"Investigating the role of school counseling in enhancing the students motivation".* Obviously, this title is better because it is clear and concise. It permits the reader to engage onto the next section within his/her attention span. To make the title concise, we need to avoid unnecessary phrases , cut any word that do not add to the information provided, and by simply omitting these superfluous words, the title is as informative and definitely sharper.

2. 2. Keep it Specific and Precise

Let us consider another title: "*school counseling and motivation*" Despite being extremely concise, this title is still lacking the power to engage the reader as it is too general and vague. It does not lead the reader in any particular direction. Instead, it leaves the informative work to the abstract and the paper itself, which, as we know, not many people go over. Consider replacing it with "*Investigating the role of school counseling in enhancing the students motivation*" This is longer but definitely more specific.

Not specific and precise	Specific and precise
• Oral communication skill	• speaking
• The motivation of learners	• learners' motivation
• The implementation of effective teaching aids in the classroom to improve learners' outcomes	• Towards implementing videos for better listening' outcomes

2. 3. Whether to include Place of Study

Sometimes, a given study or research, if conducted with the same methodology, by the same researcher but in a new setting, may yield completely different results. Consider a study on the role of school counseling on students' motivation. Here the location of the study is vital to the study itself. The prevalence of school counseling at a certain regions, schools and locations is dependent on its prevalent lifestyle habits, which in turn are affected by the economic status and cultural and social practices. So, inclusion of the place of study in the title for this study would be desirable for sake of completing of information. Now consider the following titles:

- ✓ "Investigating the role of school counseling in enhancing the students motivation"
- ✓ "Investigating the role of school counseling in enhancing the students motivation in Setif 2 university, Algeria"

The study of school counseling in Algeria will not be very different from the study of school counseling elsewhere. The affecting factors here could be the socio-economic or political environment, which will differ and yield different results if we change these factors. However, the results obtained in the first study are also applicable to some extent to other locations, schools and regions. In such studies,

2. 4. Placing the Keywords towards the Beginning

The important words and terms related to your study should be placed towards the beginning of the title. For example, *"school counseling and students motivation"* is a better title than *"Treatment of school counseling".*

Let us take the example of a study being conducted to ascertain the differences in the prevalent trends of obesity between men and women. The title for this study can be composed in two ways: *"Prevalence of Obesity in Adults by Gender"* or *"Gender Differences in Prevalence of Obesity in Adults"*. Both titles are concise, specific, and bereft of unnecessary phrases, yet these are inherently different in their approach. In this example, the focus of the study is not prevalence of obesity *per se*, but the male female comparison of prevalence of obesity. Therefore, the second title, which emphasizes the focus of the study by placing it in the beginning, is more appropriate.

2. 5. Use of Colon between the Title and Subtitle

It is important to note that the study design is usually preceded by a colon in the title. For example, *"Investigating the role of school counseling in enhancing the students' motivation: the case of Setif 2 University, Algeria"*

It is common for pieces of academic writing to have both a title and a subtitle. In these works, the title is presented first and separated from the subtitle by a colon.

2. 6. Use a Descriptive/Neutral Title

A descriptive title has all the elements of the research work (investigation, school counseling, students motivation, outcome), yet it does not reveal the main findings of the study or its conclusion.

Using too amusing or loud titles should be avoided and as far as possible use a neutral title. For example, "*one month for improving the school counseling on students' motivation*" A descriptive title only describes the subject of the paper and does not reveal the main outcome or conclusion. For example: *"Investigating the role of school counseling in enhancing the students' motivation*".

2. 7. Avoid Query/Interrogative Titles

Introducing the subject of research in the form of a query can be distracting, and is best avoided. Consider the query version of the previous example: "does the school counseling affects the students' motivation?" Query titles tend to sensationalize the subject and can sometimes be used for review articles. It is claimed that articles with query titles tend to get downloaded more frequently, yet they are cited less frequently.

2. 8. Avoid Abbreviations/Acronyms in the Title

As far as possible, refrain from using abbreviations/ acronyms in titles. Consider the title: "*Investigating the role of SC in students' motivation*". Here, the abbreviation SC could imply plenty of interpretations, and hence abbreviations are best avoided in titles. A reader unaware of their meaning and full names may skip this article altogether. However, abbreviations are sometimes useful for long, technical terms in scientific writing. The use of abbreviations that appear more frequently, known and very famous is acceptable like EFL, UN, and USA, may be acceptable to some extent.

2. 9. Ingredients of a Good Title

A balanced title needs to be "SPICED". The acronym here refers to the six key elements of a title, i.e., Setting, Population, Intervention, Condition, End-point, and Design.

- **Setting /"Where".** This refers to the situation in which the research takes place in. It could be community-based, home-based, school-based, hospital-based, or laboratory-based. Within the university itself, it could be amongst outstanding students or weak students, or in the classroom interaction. It is important to mention the setting in the Title if results are not generalizable to other settings, or if the setting reflects the magnitude of your research. For example: "*failure in official national exams under secondary school students: A school-based Study*." Here it is important to mention the setting because failure in official exams will be different in ordinary exams admitted to the school and those in the whole community.
- **Population/"Who".** The population is the target of the research work and needs to be explicitly stated (age and/or sex, where necessary). For example: "*school counseling among adolescent students*" and "*school counseling among female adolescent students*" In the first title only age is specified because sex may not be important. The latter title includes both age and sex.
- **Intervention/"How".** Intervention (qualitative or quantitative) is a key element of any study. For example *"Investigating the role of school counseling in enhancing the students' motivation*". The study here could evaluate the effect of school counseling on students' motivation or the occurrence.

The title should be able to clarify the type of study (see Design below) and the type of intervention, if it was planned. A still better title would be *"Investigating the role of school counseling in enhancing the students' motivation: the case of Setif 2 University, Algeria"* Sometimes, research may only be observational with no intervention whatsoever. For example – "the role of school counseling on students' motivation*: A Observational Study*".

- **Condition/"What".** It refers to the independent variable, topic, or the condition of the subjects. "The role of school counseling on students' motivation: An Observational Study", here the condition is school counseling.
- **Endpoint/"Why".** Outcome is sparingly used in the title, unless we wish to use a declarative title. It refers to the change or type of change the condition undergoes after being subjected to intervention. It corresponds mainly to the dependent variable or the possible results of the study
- **Design.** Including the study design in the title itself makes the title complete and it is usually placed after a colon or a dash or at the beginning of the main title. *"**Investigating** the role of school counseling in enhancing the students' motivation: the case of Setif 2 University, Algeria"*

Secrets to Writing the Title of a Research Paper

1. The golden rule is: Express only one idea or subject in your title.
2. Put an important word first in the title and include all key words.
3. Use key words which highlight the main content of your manuscript and can be understood, indexed, and retrieved by a database search. Rely on alphabetical order.
4. Be concise. Omit all waste words such as "A study of ...", "Investigations of .", "Observations on "
5. Eliminate redundant words such as verbs and articles so the title functions as a label rather than a sentence.
6. Be as descriptive as possible and use specific rather than general terms: for instance, include the specific school counseling technique rather than just the class of techniques such as guidance.
7. Write scientific names in full, for instance *Escherichia coli* rather than *E. coli.*
8. Avoid using abbreviations and acronyms; they could have different meanings: for instance "SC" for School Counseling could be mistaken for "CS", which may mean different names.
9. Refer to phenomenon and cases by their common or generic name instead of their aspects or shapes.
10. Do not use words such as "significant", who are considered too strong, state your conclusion too boldly, and trivialize your manuscript by reducing it to a one-liner.
11. Make certain that your title match the final version of your article.
12. It predicts the content of the paper. Make sure it does not include anything that your reader would not be able to find in the paper.
13. It's very important to define the tone of your research in the title and keep it throughout the paper.

If it's a serious and conventional academic study, avoid a casual or fun title containing ornate or conversational language.

14. It answers the questions: what why, where, who, how

15. Avoid abbreviations and jargon: Known abbreviations such as EFL, UN, USA and so on can be used in the title. However, other lesser-known or specific abbreviations and jargon that would not be immediately familiar to the readers should be left out.

16. Use the lower case and upper case appropriately.

17. It is composed of two parts: main part for the research perspectives and subordinate. For the materials and setting.

18. A title is a phrase. It is not a statement, full sentence or a question. It does not take any period at the end.

19. Never use a verb in a title. If there is a need change it into participle.

20. Avoid declarative title to it lets the reader approach the subject with an open mind and retains the curiosity of the reader.

3. Choosing the key Words

The keywords you choose are important as these are used for indexing purposes. Keywords are listed below the abstract text also. It is important to not duplicate the "keywords" and "words used in the main title" as both enable accession and hence citation of your research work. Using the right keywords will speed up the internet retrieval of your work. In order to determine the keywords, read through your paper and list the terms, phrases and abbreviations used frequently. Try to include variants of a term/phrase already used in your title as keywords; *e.g. school counseling, motivations, English foreign language, and university student*. The keywords are not necessarily single words but may be two words. For example, "school counseling" and help automatically to decipher the content of the whole paper. Before you finally submit your article, check if the keywords are appropriate. Type the keywords into the search engine and see if the search results resemble your research work.

4. Creating a Running Title

Many journals ask for a "running title" or "running head" or "short title" to be included in the submitted manuscript. This an abridged forms of the main title, which is usually placed at the top-left in the header of the published page of an article. The running title enables the reader to keep track of the article as he goes through loose printed pages of the article. Most journals would ask for a running title of no more than 50 characters including the spaces. To make the title still shorter, standard abbreviations could be used, and articles and study design be omitted. For example, the running title for a research paper titled *"Investigating the role of school counseling in enhancing the students' motivation: the case of Setif 2 University, Algeria"* can be written as "*school counseling* and students' motivation".

5. Titles in Different Research Papers

5. 1. Titles in Social Science Papers

Titles of academic works in the social sciences present the subject of the paper as simply and directly as possible. According to the APA style guide, the title "should be a concise statement of the main topic and should identify the actual variables or theoretical issues under investigation and the relationship between them." To better understand what this looks like, consider this title: Effect of Context on Performance Approach Orientation

Read in light of the APA's style principles, we can see how this title concisely states the paper's main topic (performance approach orientation), indicates the variable under investigation (context) and states the relationship between the main topic and the variable (the *effect* of one on the other). Note that the principle of concision extends all the way to cutting the initial *the*. These style principles also hold when the "title: subtitle" format is employed, as in the following: The Sacralization of the Individual: Human Rights and the Abolition

As its title clearly signals, this paper will investigate how the abolition of the death penalty (variable under investigation) affects our understanding of the sacralization of the individual (main topic).

5. 2. Titles in Humanities Papers

Titles of academic works in the humanities tend to identify both the subject area and the text(s) the paper will analyze ("Representing 'Other' Diasporas in Recent Global Canadian Fiction"). When analyzing a specific work, it is conventional to include both the author's name and the title of the work. Titles of humanities papers tend to employ more vibrant, vivid language than titles in other disciplines. The following title demonstrates several higher-level techniques: Strange Fruits in the Garden: Surveying the Properties of Lynching

When humanities papers employ the "title: subtitle" structure, the title is usually more suggestive, and its meaning may not become fully clear until the audience has read the paper. Even if the audience isn't familiar with these allusions before reading Alexandre's work, their meaning will become clearer while reading, thereby bolstering readers' sense of Alexandre's cleverness, attention to detail, and, in turn, her authority.

The subtitle of a humanities paper typically states the subject more directly, as Alexandre's title does. However, by punning on *surveying* and *properties* Alexandre employs an additional strategy for conveying her cleverness. When used as jokes, puns in titles can backfire by suggesting that your approach to your subject is unserious. But when employed as Alexandre does here, puns can convey an author's sensitivity to her subject's many layers of meaning.

5. 3. Titles in Science Papers

Titles of academic works in the sciences should present their subject with specificity and do so using as few words as possible. The title should provide details specific enough to distinguish the project undertaken in the paper from other studies on the same topic. Consider these examples taken from Jan Pechenik's *A Short Guide to Writing About Biology*:

- NO: Factors controlling sex determination in turtles
- YES: Roles of nest site selection and temperature in determining sex ratio in loggerhead sea turtles
- NO: The control of organ development in fish
- YES: The novel gene "*exdpf*" regulates pancreas development in zebrafish

Be economical with your language, but don't be so economical that it limits your specificity. The *ACS Style Guide* offers these guidelines for the language of scientific titles: "Choose terms that are as specific as the text permits, e.g., 'a vanadium-iron alloy' rather than 'a magnetic alloy.' Avoid phrases such as 'on the,' 'a study of,' 'research on,' 'regarding,' and 'use of.' In most cases, omit 'the' at the beginning of the title. Avoid non-quantitative, meaningless words such as 'rapid' and 'new.'"

5. 4. Titles in Non-Academic Works (journalism, creative nonfiction, writing for the web)

Titles of non-academic works must account for the audience's purpose in reading. Are readers hoping to be informed? To have their ideas challenged? Are they seeking an experience? If your audience is reading for information, your title should be direct and informative ("Inland Oil Spill Raises Detection Concerns"). If your audience is reading for an experience, you should strive to compose a title that enhances the way they experience your subject. You might, for example, choose a title that works in conversation with your text, a title whose meaning expands and develops as your essay progresses.

Summary

A good title is important for several reasons. The title alerts the reader to the topic of your paper. A well written or phrased title creates curiosity and draws readers to investigate the substance of your paper. However, the main function of the title is to describe your research. Titles should describe the research succinctly

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Practice

Focus Questions

1. What is the meaning of the term "title of the dissertation"?
2. What is a good title?
3. What are the scientific criteria for writing the dissertation's title?

Exercise 1

Study the following titles, and then, decide whether they are well-formed or ill-formed. Provide justification for both choices with reformulation the ill-formed ones.

1. The role of phonological awareness of Arabic language as a mother tongue in promoting the oral performance of English language as a foreign language of Algerian secondary school students.
2. The significance of school counseling and guidance in helping male and female adolescent learners achieve better results in learning English as a second language. The Case of Setif university English learners.
3. Evaluation of culture based contents in the Algerian English foreign language secondary school classroom in relation to teachers, students and textbooks: the case of Setif secondary schools, Algeria
4. Impact of Arabic language as a first language in Algeria in terms of the phonological awareness on oral performance of Algerian English secondary school learners.
5. High motivated learners are more successful in oral interactions.
6. Evaluation of ICC in English textbooks of Algerian secondary School Levels**.**

7. Evaluation of Intercultural Communicative Competence in English Textbooks of Algerian Secondary School Levels: The Province of Setif
8. Teaching Culture in English Classes
9. E- Learning and the Development of Intercultural Communicative Competence
10. Linguistic background impacts on Algerian foreign language learners
11. Mixing between French and English among 400 to 800 female and male students of fourth year in Setif university from 2008 to 2010 rise from 40 pr cent to 55 per year
12. Effects of code- mixing on the oral performance of foreign language learners and its influence on their proficiency in communicating fluently in the target language (English)
13. A study in specification of communicative content of English textbooks with a determine the content validity of tests
14. The impact of anxiety on academic achievements among learners of English as a foreign language

Exercise 2

Study the previous title in terms of the following points.

- **a.** The number of words
- **b.** Redundant, repeated, uninformative and wrong words or expressions in the title
- **c.** Lower and upper case
- **d.** Title's main and subordinate parts
- **e.** Dependent and independent variables
- **f.** Research objectives
- **g.** Population of the study
- **h.** What, where, who, why
- **i.** Key words "terms"

Exercise 3

1- Fill in the following table with information from the previous titles.

2- Identify key words of each title.

Title	what	where	who	why

Lecture 13

Abstract

Description of the Lecture

This lecture is concerned with the scientific abstract. Throughout the lecture students will become familiar with many aspects of the research paper abstracts s as primary part of any research paper. The emphasis is put on the meanings, types, and guidelines for abstracts writing. The current lecture is made up of two main sections; theory and practice.

Learning Objectives of the Lecture

On successful completion of the lecture, students should be able, among other things, to;

- Be familiar the definition of the term abstract.
- Understand the importance of abstract writing in the research paper.
- Be aware of the different types of abstracts.
- Apply the techniques of the abstract writing.
- Discover the differences between the abstract and the introduction.

Introduction

Preparation, submission, and presentation of an abstract are important facets of the research process, which benefit the investigator/author in several ways. Writing an abstract consists primarily of answering the questions, “Why did you start?” “What did you do?” “What did you find?” and “What does it mean?” A few practical steps in preparing to write the abstract can facilitate the process. This lecture discusses those steps and offers suggestions for writing each of an abstract’s components.

1. Definitions

The word abstract comes from the Latin *abstractum*, which means a condensed form of a longer piece of writing. There are two main types of abstract: the (1) Descriptive and the (2) Informative abstract. The type of abstract you write depends on your discipline area. **An abstract** is a condensed version of a full scientific paper. It describes a study and its results. It is a means of conveying to one’s peers what was done and why, what was found, and what the implications are. Because it is strictly limited, either in the number of words it can contain or in the space it can occupy on a page, an abstract can be only a “bare bones” version of all the information pertaining to the study.

2. Components of an Abstract

2. 1. Motivation or Statement of Problem

Why do we care about the problem? What practical, theoretical, scientific, or artistic gap is your research filling? What problem does this work attempt to solve? What is the scope of the project? What is the main argument, thesis or claim?

3. 2. Methods or Approach

This is usually the longest section of the abstract and should give enough information to the reader to understand what and how was your study done. The important aspects that need to be covered here include the study design, study setting, diagnosis of participants, sample size calculation, sampling methods, intervention done, duration of the study, research instruments used, and define the primary and secondary outcome measures and how these were assessed. In short, it addresses the following questions

- What did you actually do to get your results?
- Did you analyze the collected data?
- Did you approach your subject using a specific theoretical framework, technical procedure, or methodology?

An abstract of a scientific work may include specific models or approaches used in the larger study. Other abstracts may describe the types of evidence used in the research.

2. 3.Results or Product

As a result of completing the above procedure or investigation, what did you learn, create, or invent? An abstract of a scientific work may include specific data that indicates the results of the project. Other abstracts may discuss the findings in a more general way.

2. 4. Conclusions or Implications

What are the larger implications of your findings, especially for the problem or gap identified in step 1? How does this work add to the body of knowledge on the topic? Are there any practical or theoretical applications from your findings or implications for future research?

Note

The importance given to the different components can vary between disciplines. You should look at abstracts of research that are similar to your own work as models.

3. Guidelines for Abstract Writing

Nearly all journals require that research papers include abstracts. The abstract appears following the title page. Recently, the *structured abstract* (That is to say, an abstract that has 5 sections: introduction, objective, methods, results, and conclusions) has become the standard for most research

articles (whereas reviews, dissertations. case reports, and certain other types of special articles have non-structured abstracts).

- **Write the abstract last** this might sound like redundant advice, but many students fail to recognize the importance of this. When writing to submit a paper, you should always write the abstract as the last thing you do, since otherwise you are not going to be sure what your results will be, and risk having to re-write it several times. Of course, when you are presenting your work at a conference and need to submit an abstract in advance, your research might not be finished. Should this happen, you always have much of the information that you need for an abstract, you know the problem, purpose, methods and such, and in this case you write about what you *do* know, and what your aim is with the paper or research.
- **Be self-contained** Your reader only has your abstract to explain your work and very little patience as regards to looking things up. Remember to define all acronyms and abbreviations (except standard units of measurement and commonly used abbreviations), to spell out names of tests and drugs (using generic names for drugs), defining unique terms or terms that might not be self-explanatory.
- **Be clear, concise and specific** since you have little space, each sentence needs to be as informative as possible; do not use twelve words when five will do. Furthermore, as you need to grab attention quickly, the lead sentence is the most important one and should be as informative as possible. Remember: the longer you go on, the greater the risk that your reader will lose interest. It should be natural to avoid sentences that contain no real information, but since many authors are sadly used to filling out the pages, this is more difficult than one can imagine. Here are some further tricks to shorten a text you find too long:
  - ✓ use digits for numbers (unless the number begins a sentence)
  - ✓ abbreviate whenever possible (e.g., *vs.* for *versus*)
  - ✓ give a percentage rather than exact data when possible and suitable
  - ✓ don't waste space by repeating the title
  - ✓ **However**, remember not to go overboard with the shortening of sentences. You are always running the risk of comprising sentences to the point that it becomes difficult to understand the given information.
- **Be accurate** It is important to be accurate when writing your abstract, as failure to give a true picture of your paper might dissuade other researchers or students from reading your paper, or future papers you write. Make sure you use the same language, key words and concepts as you use in the paper, varying yourself on this point can confuse the reader. You should only give information that actually appears in your paper. Naturally, this includes the purpose and methods you have used. Finally, your abstract reflects the body of information in the text, but does not argue, comment or reference around it. Also remember that if your paper emphasized a certain point, then so should your abstract, and if

your paper gives equal space to three different aspects, this should be similarly reflected in your abstract. It is a non-evaluative piece.

- It uses one single well-developed paragraph in a block format with no indentation that is coherent and concise, and is able to stand alone as a unit of information.
- The abstract page should not be numbered.
- The abstract should be on a separate page following the title page and in some cases it may be on the title page itself.
- The word abstract is used as a title and is centered at the top of the page there should be a double space between the title and the abstract.
- It covers all the essential academic elements of the full-length paper, namely the background, purpose, focus, methods, results and conclusions
- It is written in plain English and is understandable to a wider audience, as well as to your discipline specific audience. Do not try to impress the target readers with unimportant and **jargon** language.
- It often uses passive structures in order to report on findings, focusing on the issues rather than people.
- It uses the language of the original paper, often in a more simplified form for the more general reader.
- It usually does not include any referencing.
- In publications such as journals, it is found at the beginning of the text, while in academic assignments, it is placed on a separate preliminary page.
- The abstract must accurately reflect the content of the paper; nothing can be included in the abstract that does not appear in the body of the paper. Therefore, it is best to write the abstract *after* you have written and carefully edited your paper.
- The abstract is a synopsis of the paper, and many readers will never read any more than the abstract, so it is very important that the abstract be absolutely accurate and concisely convey the paper's most important data and conclusions.
- The structured abstract demands the author be concise. Do not include background information, do not use abbreviations or acronyms (unless the acronym will appear _ 4 times in the abstract), and delete any word that is not necessary to convey information. Don't go too far, however, and eliminate the essential structure and elements that make a complete sentence.
- Also, don't use phrases such as "Results will be provided," when you could write a phrase that describes a key finding, such as "The treatment group had significantly lower mortality."
- Don't speculate or include opinion in the abstract. The abstract is a "just the facts" presentation of your research.

- The abstract's major emphasis should be the methods and the main results. The introduction or purpose can often be stated in a single sentence. The objective should be stated in one imperative-style sentence.
- For the abstract that is plenty. Describe the methods and the main results in 3–4 sentences each. Carefully select the most important data and statistics to show and/or describe in the results section. Just state the main results. The conclusion, like the introduction can typically be handled in 1 or 2 sentences. Try summing up the findings in the first sentence and then make a conclusion in the second.
- Avoid abbreviations that may be confusing to readers.
- Remember to use keywords important to your field of research or to use words that indicate your field (foreign languages, biochemical engineering, for example, or the history of Byzantine art).
- Your abstract should not be so detailed that it does not require quotations, citations, lengthy background information, references to other literature, and footnotes. Remember, it's a summary! Avoid them.

4. Key Words

The key words cannot be picked simply at the author's discretion; instead, they must be terms that must appear very frequently in the research paper. The key words are superfluous. While not all professors require keywords in abstracts, keywords help readers to identify the main points of the paper in order to find additional articles and papers relevant to their research.

Note The abstract should be address	
What	The conclusion (briefly) and the broad implications of it.
Where	The physical place of the research
When	The time of the research
How	The basic approach and methodology, usually in one sentence
Why	The reason behind the research being done

5. The Abstract SHOULD NOT contain:

- lengthy background information,
- references to other literature,
- elliptical (i.e., ending with ...) or incomplete sentences,
- abbreviations or terms that may be confusing to readers,
- Any sort of illustration, figure, or table, or references to them.

6. Types of Abstracts

6. 1. Descriptive Abstracts

Descriptive abstracts are generally used for humanities and social science papers or psychology essays. This type of abstract is usually very short (50-100 words). Most descriptive abstracts have certain key parts in common. They are:

- Background
- Purpose
- particular interest/focus of paper
- overview of contents (not always included)

6. 2. Informative Abstracts

Informative abstracts are generally used for science, engineering or psychology reports. You must get the essence of what your report is about, usually in about 200 words. Most informative abstracts also have key parts in common. Each of these parts might consist of 1-2 sentences. The parts include:

- background
- aim or purpose of research
- method used
- findings/results
- conclusion

The table below summarizes the main features of, as well as the differences between, the two types of abstracts discussed above. In both types of abstract, your lecturer/tutor may require other specific information to be included.

Descriptive abstract	Informative abstract
• Describes the major points of the project to the reader. • Includes the background, purpose and focus of the paper or article, but never the methods, results and conclusions, if it is a research paper. • Is most likely used for humanities and social science papers or psychology essays.	• Informs the audience of all essential points of the paper. • Briefly summarizes the background, purpose, focus, methods, results, findings and conclusions of the full-length paper. • Is concise, usually 10% of the original paper length, often just one paragraph. • Is most likely used for sciences, engineering or psychology reports.

7. The Difference between the Abstract and Introduction

An introduction provides the reader with some background information to your topic and introduces the rationale for the project, explaining and defining the problem. It then details the content of

the Dissertation and the intended structure. It is different from the abstract in that it does not give any information about the methods, results and conclusion. Students are sometimes confused about the difference between an abstract and an introduction. In fact, they are different pieces of writing with different aims and key parts. The following table will briefly describe these differences in the case of a research paper.

Abstract	**Introduction**
The essence of the whole paper	**Introduces the paper**
It covers the following academic elements: • Background • Purpose and focus • Methods • Results also called findings • Conclusions • Recommendations or implications	It covers the following academic elements: • Background • Purpose • Preposition also called point of view or thesis statement • Outline of key issues • scope
▪ Summarizes briefly the whole paper including the conclusions.	▪ Introduces the paper and foregrounds issues for discussion.

Summary

As your abstract is an important way to promote your work it is worth taking time to write it well. You will likely have to revise several drafts to produce a precise, concise outline of your paper which is clear, complete, includes key search terms and fits within the word limit.

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Practice

Focus Questions

1. What is meant by the "abstract" of a dissertation?
2. What does writing the "abstract" include?
3. What is the format of an "abstract"?
4. What are the guidelines for abstract writing?
5. What the difference between abstract and introduction?
6. What are the types of abstract?

Exercise 1

Read the following abstract then discuss the questions that follow.

Abstract

This study is an attempt to describe the presentation of culture in second generation first year middle school textbook of English *"My book of English"* in Algeria. The textbook analysis is based on the types (small versus big culture) and categories (source versus target culture) of culture. The study relies on both quantitative and qualitative method of analysis. The quantitative method is used with content analysis to trace the distribution of culture presentation in terms of categories and themes. The qualitative method is concerned with content analysis and used simultaneously with the first one as to identify the nature and meaning of the themes of culture based on the Iceberg Model of culture.

In addition, it investigates how the interplay between these categories and themes can encourage intercultural awareness. It is noticed that there has been a growing concern of what to cultural content to be included in textbooks as to serve the reform of 2016 objectives within the intercultural orientation. The results show that the presentation of culture in the second generation first year middle school textbook of English based themes and categories of culture are unbalanced showing a high percentage of non –target culture over target culture and big "c" over small "c". This implies culture presentation provides a slight encouragement toward developing intercultural communication.

1. **Identify the research problem.**
2. **Identify the research aims.**

3. **Identify the independent variable.**
4. **Identify the dependent variable.**
5. **Suggest at least two main research questions.**
6. **Identify the research methodology in terms of the research Approach.**
7. **Identify the research methodology in terms of the research Tools.**
8. **Identify the research methodology in terms of the research Samples and Populations.**
9. **Identify the main result of the study.**
10. **Discuss the main recommendation of the research.**
11. **Suggest five key words to the above abstract**.
12. **Formulate the suitable title to the given abstract.**
13. **Fill in the following table with appropriate information from the above title**.

What	Why	Where	Who

14. **Analyze the form of the abstract. Sort out <u>FIVE</u> mistakes and correct them in the following table. An example word is given.**

Number	Mistake	Correction
Example	The word "abstract" in the first line	It should be centered and capitalized
1		
2		
3		
4		

Exercise 2

Read the following "Abstracts" then study them in terms of the next points:

1. The general topic of the work
2. The research objectives
3. The dependent and independent variables
4. Population of the study
5. The methodology , results and implications
6. The format (number of words , tenses used , spacing and indentation)
7. Provide and appropriate title for each abstract.

Abstract 01

The present research is an attempt to examine the way culture is introduced in teaching English in the Algerian secondary schools. Throughout the study, this issue is examined with reference to the relevant

theoretical background, the first year secondary school textbook “At the Crossroads”, and the teachers' cultural knowledge. The evaluation of “At the Crossroads” demonstrates that the cultural component is not adequately covered within the textbook. That is, the findings make it clear that the textbook is shallow and superficial with respect to its treatment of culture. It is, therefore, inadequate to the task of teaching culture specifics in the deeper sense or culture general skills like communication and understanding. Likewise, the results of the teachers’ questionnaire reveal that most of them lack the sufficient cultural knowledge to teach culture. In addition, the results show the absence of materials which might have helped teachers to introduce the culture efficiently in classrooms. On the basis of these results, some recommendations have been directed in order to help students reach cultural understanding to accompany their linguistic one.

Abstract 02

Listening is one of the most pivotal skills, though; it is unjustly neglected throughout the literature. It was previously considered as passive skill but now those myths have been demystified. Therefore seeking the innovative trends for teaching and developing listening for EFL students are taken for granted. Lack of adequate exposure to listening and dearth of attention with regard to these issues sets the ground for authentic listening materials to fill the cited gaps in Iranian context. There have been controversial ideas based on studies in dealing with authentic listening materials. Their results ranged from totally abstinence to completely utilizing. This study intends to investigate the impact of authentic listening materials on listening skills of Elementary students at university level. To this aim, sixty students of university were randomly assigned to two groups. One group was exposed to and received authentic listening materials (experimental group) and the other groups received simplified listening materials (control group). A proficiency test (consisted of two sub-tests; listening comprehension and listening perception) was used as a pretest to measure the students’ potential differences at outset of study. After the instruction sessions the same proficiency test was administered for both groups. Besides students feedback survey was given to experimental group to evaluate their attitudes and opinions regarding the materials. Analysis of quantitative study and comparing the mean scores of two groups via t-test showed that students who were exposed to authentic materials performed better in posttest. The analysis of feedback survey also denoted their satisfaction and positive attitudes to authentic listening materials.

Abstract 03

This research paper was intended to address the concept of “learner autonomy” enhanced by Information Communication Technologies (ICTs) in the Algerian English foreign language (EFL) context as seen as a facilitating factor of the learning process especially if this latter was enhanced by the use of the multimedia resources. The present study shows how ICTs pedagogies could create positive

opportunities for learners to go beyond their classroom environment and encourage them to engage in meaningful interactional spaces where they are pushed to invest their identities and to "speak as themselves". The dimensions of learner autonomy have been addressed through applying classroom observation and students questionnaire under the descriptive way of dealing with the data.

In the practical part of the study, seventy Algerian male and female EFL learners sorted out from 350 learners and 5 teachers out of 25 teachers were selected randomly from second year level at the English Language and Literature Department at Bejaia University in Algeria. The samples are chosen in order to fill in the research questionnaires (one questionnaire for teacher and another one for learners). The findings of the survey display that ICTs tools not only help learners to express themselves in the target language through motivating them to participate in the different EFL classroom tasks, but also it helped them to express their personal identifies whereby their EFL fluency has been promoted. It also demonstrates that the participants are willing strongly to integrate the ICTs in the process of interaction. Finally in the light of the conclusions teachers and students have to consider the question of ICTs integration at least at small scale in order to make the process of English foreign language learning and teaching more effective and fruitful.

Exercise 2

Read the following passage then identify whether it is an abstract or introduction.

Passage 1

"This essay is an overview of the theoretical, methodological, pedagogical, ideological and power-related issues of world Englishes: varieties of English used in diverse sociolinguistic contexts. The scholars in this field have critically examined theoretical and methodological frameworks of language use based on western, essentially monolingual and mono-cultural frameworks of linguistic science and replaced them with frameworks that are faithful to multilingualism and language variation. This conceptual shift affords a "pluricentric" view of English, which represents diverse sociolinguistic histories, multicultural identities, multiple norms of use and acquisition, and distinct contexts of function. The implications of this shift for learning and teaching world Englishes are critically reviewed in the final sections of this essay" (Bhatt, 2001).

Passage 2

"This article focuses on major current theoretical and methodological issues related to what has been characterized as "World Englishes". In the past three decade, the study of the formal and functional implications of the global spread of English, especially in terms of its range and functions and the degree of penetration in Western and, especially, non-Western societies, has received considerable attention

among scholars of English language, linguistics and literature; creative writers; language pedagogues; and literary critics. It is in this context that the late Henry Kahane remarked: "English is the great laboratory of today's sociolinguist" (1986, p495). There is now a growing consensus among scholars that there is not one English language anymore: rather there a many (McArthur 1998), most of which are disengaged from the language's early Judeo-Christian tradition. The different English languages, studied within the conceptual framework of World Englishes, represent diverse linguistic, cultural, and ideological voices" (Bhatt, 2001).

Exercise 3 Decide about the type of the following abstracts

Abstracts 1

The opportunity to design and deliver short programs on referencing and avoiding plagiarism for transnational USA students has confirmed the necessity of combating both the 'all-plagiarism-is-cheating' reaction and the 'just-give-them-a-referencing-guide' response. The notion of referencing is but the tip of a particularly large and intricate iceberg. Consequently, teaching referencing is not adequate in educating students to avoid plagiarism. In this presentation, I will use the transnational teaching experience to highlight what educating to avoid plagiarism entails.

Abstracts 2

Metalinguistic awareness contributes to effective writing at university. Writing is a meaning-making process where linguistic, cognitive, social and creative factors are at play. University students need to master the skills of academic writing not only for getting their degree but also for their future career. It is also significant for lecturers to know who our students are, how they think and how we can best assist them. This study examines first-year undergraduate Australian and international engineering students as writers of academic texts in a multicultural setting at the University of Adelaide. A questionnaire and interviews were used to collect data about students' level of metalinguistic awareness, their attitudes toward, expectations for, assumptions about and motivation for writing. The preliminary results of the research show that students from different cultures initially have different concepts about the academic genres and handle writing with different learning and writing styles, but those with a more developed meta-language are more confident and motivated. The conclusion can also be drawn that students' level of motivation for academic writing positively correlates with their opinion about themselves as writers. Following an in-depth multi-dimensional analysis of preliminary research results, some recommendations for writing instruction will also be presented.

Lecture 14

Introduction Writing

Description of the Lecture

This lecture is concerned with the introduction writing of t a research paper. Throughout the lecture students will become familiar with many aspects of the research introduction as primary part of any research paper. The emphasis is put on the meanings, types, and guidelines for abstracts writing. The current lecture is made up of two main sections; theory and practice.

Learning Objectives of the Lecture

On successful completion of the lecture, students should be able, among other things, to;

- Be familiar with the meaning of the term introduction.
- Understand the importance of the introduction writing in a research paper.
- Become more attuned to the elements of an introduction.
- Develop the students' skills towards the techniques of introduction writing.

Introduction

A good introduction should address the following five questions.

1. Are you aware of the reality that your dissertation introduction will grab the attention of your dissertation advisor as the famous proverb says “first impression is the last impression?”
2. Are you sure that your dissertation introduction provides enough basic background knowledge of your area of research to place your study in the context?
3. Does your dissertation introduction elucidate the focus of your research completely?
4. Are you confident enough that you are going to write your dissertation introduction in a way that it will give logical and clear specification about your overall research aim and individual objectives?
5. Will you manage to cover your dissertation introduction accurately without even excluding pointing out your research value?

1. Definitions

The first chapter of the dissertation is the dissertation’s introduction “or introductory chapter”. The dissertation introduction details the purpose of the study, the research problem, offers a justification for the study and defines the research objectives. The introduction chapter gives brief summary of the whole

dissertation and sets the stage for the pages followed by it. However, it may be difficult to write an introduction chapter that tells about your full potential. But though it is the introduction of your paper, it is the key content of your writing process and it must be framed in such a way so that it creates interest in the mind of reader to read the whole dissertation.

Function of an introduction: The function of the Introduction is to:

- Establish the context of the work being reported. This is accomplished by discussing the relevant **primary research literature** (with **citations**) and summarizing our current understanding of the problem you are investigating;
- **State the purpose** of the work in the form of the hypothesis, question, or problem you investigated; and,
- Briefly explain your **rationale** and approach and, whenever possible, the possible outcomes your study can reveal.

- Quite literally, the Introduction must answer the questions, "What was I studying? Why was it an important question? What did we know about it before I did this study? How will this study advance our knowledge?"

2. Main Sections of an Introduction

The major subsections of dissertation introduction:

- **Introductory Paragraph:** it states the general field of interest in one or two paragraphs, and end with a sentence that states what study will accomplish. Do not keep the reader waiting to find out the precise subject of the dissertation.
- **Background of the Problem:** This section is critically important as it must contain some mention of all the subject matter in the following Chapter 2 Review of the Literature 2 and the methodology in Chapter 3. Key words should abound that will subsequently be used again in Chapter 2. The section is a brief two to four page summary of the major findings in the field of interest that cites the most current finding in the subject area. A minimum of two to three citations to the literature per paragraph is advisable. The paragraphs must be a summary of unresolved issues, conflicting findings, social concerns, or educational, national, or international issues, and lead to the next section, the statement of the problem. The problem is the gap in the knowledge. The focus of the Background of the Problem is where a gap in the knowledge is found in the current body of empirical (research) literature.
- **Statement of the Problem:** Arising from the background statement is this statement of the exact gap in the knowledge discussed in previous paragraphs that reviewed the most current literature found. A gap in the knowledge is the entire reason for the study, so state it specifically and exactly. Use the

words “gap in the knowledge.” The problem statement will contain a definition of the general need for the study, and the specific problem that will be addressed.

- **Purpose of the Study:** The Purpose of the Study is a statement contained within one or two paragraphs that identifies the research design, such as qualitative, quantitative, mixed methods, ethnographic, or another design. The research variables, if a quantitative study, are identified, for instance, independent, dependent, comparisons, relationships, or other variables. The population that will be used is identified, whether it will be randomly or purposively chosen, and the location of the study is summarized. Most of these factors will be discussed in detail in Chapter 3.
- **Significance of the Study:** The significance is a statement of why it is important to determine the answer to the gap in the knowledge, and is related to improving the human condition. The contribution to the body of knowledge is described, and summarizes who will be able to use the knowledge to make better decisions, improve policy, advance science, or other uses of the new information. The “new” data is the information used to fill the gap in the knowledge.
- **Primary Research Questions:** The primary research question is the basis for data collection and arises from the Purpose of the Study. There may be one, or there may be several. When the research is finished, the contribution to the knowledge will be the answer to these questions. Do not confuse the primary research questions with interview questions in a qualitative study, or survey questions in a quantitative study. The research questions in a qualitative study are followed by both a null and an alternate hypothesis.
- **Hypotheses:** A hypothesis is a testable prediction for an observed phenomenon, namely, the gap in the knowledge. Each research question will have both a null and an alternative hypothesis in a quantitative study. Qualitative studies do not have hypotheses. The two hypotheses should follow the research question upon which they are based. Hypotheses are testable predictions to the gap in the knowledge. In a qualitative study the hypotheses are replaced with the primary research questions.
- **Research Design:** In Chapter 1 this is a summary of the methodology and contains a brief outline of three things: (a) the *participants* in a qualitative study or thesubjects of a quantitative study (human participants are referred tyo as participants, non-human subjects are referred to as subjects), (b) the *instrumentation* used to collect data, and (c) the *procedure* that will be followed. All of these elements will be reported in detail in Chapter 3. In a quantitative study, the instrumentation will be validated in Chapter 3 in detail. In a qualitative study, if it is a researcher-created questionnaire, validating the correctness of the interview protocol is usually accomplished with a pilot study. For either a quantitative or a qualitative study, using an already validated survey instrument is easier to defend and does not require a pilot study; however, Chapter 3 must contain a careful review of the instrument and how it was validated by the creator. In a qualitative study, which usually involves interviews, the instrumentation is an interview protocol – a pre-determined set of questions that

every participant is asked that are based on the primary research questions. A qualitative interview should contain no less than 10 open-ended questions and take no less than 1 hour to administer to qualify as "robust" research. In the humanities, a demographic survey should be circulated with most quantitative and qualitative studies to establish the parameters of the participant pool. Demographic surveys are nearly identical in most dissertations. In the sciences, a demographic survey is rarely needed.

- **Theoretical Framework:** The theoretical framework is the foundational theory that is used to provide a perspective upon which the study is based. There are hundreds of theories in the literature. For instance, if a study in the social sciences is about stress that may be causing teachers to quit, Apple's Intensification Theory could be cited as the theory was that stress is cumulative and the result of continuing overlapping, progressively stringent responsibilities for teachers that eventually leads to the desire to quit. In the sciences, research about new species that may have evolved from older, extinct species would be based on the theory of evolution pioneered by Darwin. Some departments put the theoretical framework explanation in Chapter 1; some put it in Chapter 2.
- **Assumptions, Limitations, and Scope (Delimitations):** Assumptions are self-evident truths. In a qualitative study, it may be assumed that participants be highly qualified in the study is about administrators. It can be assumed that participants will answer truthfully and accurately to the interview questions based on their personal experience, and that participants will respond honestly and to the best of their individual abilities. **Limitations** of a study are those things over which the research has no control. Evident limitations are potential weaknesses of a study. Researcher biases and perceptual misrepresentations are potential limitations in a qualitative study; in a quantitative study, a limitation may be the capability of an instrument to accurately record data. **Scope** is the extent of the study and contains measurements. In a qualitative study this would include the number of participants, the geographical location, and other pertinent numerical data. In a quantitative study the size of the elements of the experiment are cited. The generalizability of the study may be cited. The word generalizability, which is not in the Word 2007 dictionary, means the extent to which the data are applicable in places other than where the study took place, or under what conditions the study took place. **Delimitations** are limitations on the research design imposed deliberately by the researcher. Delimitations in a social sciences study would be such things as the specific school district where a study took place, or in a scientific study, the number of repetitions.
- **Definition of Terms:** The definition of terms is written for knowledgeable peers, not people from other disciplines As such, it is not the place to fill pages with definitions that knowledgeable peers would know at a glance. Instead, define terms that may have more than one meaning among knowledgeable peers.

- **Organization of the research: it** summarizes the content of Chapter 1 and preview of content of Chapter 2.

Note on the Structure of an Introduction

The structure of the Introduction can be thought of as an inverted triangle – the broadest part at the top representing the most general information and focusing down to the specific problem you studied. Organize the information to present the more general aspects of the topic early in the Introduction, then narrow toward the more specific topical information that provides context, finally arriving at your statement of purpose and rationale. A good way to get on track is to sketch out the Introduction backwards; start with the specific purpose and then decide about the scientific context in which you are asking the question(s) that your study addresses. Once the scientific context is decided, then you'll have a good sense of what level and type of general information with which the Introduction should begin. Here is the information should flow in your Introduction:

- **Begin your Introduction by clearly identifying the subject area of interest**. Do this by using key words from your **title** in the first few sentences of the Introduction to get it focused directly on topic at the appropriate level. This insures that you get to the primary subject matter quickly without losing focus, or discussing information that is too general. For example, in the mouse behavior paper, the words hormones and behavior would likely appear within the first one or two sentences of the Introduction.
- **Establish the context by providing a brief and balanced review of the pertinent published literature that is available on the subject**. The key is to summarize (for the reader) what we knew about the specific problem before you did your experiments or studies. This is accomplished with a general review of the primary research literature (with citations) but should not include very specific, lengthy explanations that you will probably discuss in greater detail later in the Discussion. The judgment of what is general or specific is difficult at first, but with practice and reading of the scientific literature you will develop e firmer sense of your audience. In the mouse behavior paper, for example, you would begin the Introduction at the level of mating behavior in general, and then quickly focus to mouse mating behaviors and then hormonal regulation of behavior. Lead the reader to your statement of purpose/hypothesis by focusing your literature review from the more general context (the big picture e.g., hormonal modulation of behaviors) to the more specific topic of interest to you (e.g., role/effects of reproductive hormones, especially estrogen, in modulating specific sexual behaviors of mice.)
- **Know about what literature should you look for in your review of what we the problem**. Focus your efforts on the primary research journals - the journals that publish original research articles. Although you may read some general background references (encyclopedias, textbooks, lab manuals, style manuals, etc.) to get yourself acquainted with the subject area, do not cite these,

because they contain information that is considered fundamental or "common" knowledge within the discipline. Cite, instead, articles that reported specific results relevant to your study. Learn, as soon as possible, how to find the primary literature (research journals) and review articles rather than depending on reference books. The articles listed in the Literature Cited of relevant papers you find are a good starting point to move backwards in a line of inquiry. Most academic libraries support the **Citation Index**. Some of the newer search engines will actually send you alerts of new papers that cite particular articles of interest to you. Review articles are particularly useful because they summarize all the research done on a narrow subject area over a brief period of time (a year to a few years in most cases).

- **Be sure to clearly state the purpose and /or hypothesis that you investigated**. When you are first learning to write in this format it is okay, and actually preferable, to use a pat statement like, "The purpose of this study was to...." or "We investigated three possible mechanisms to explain the ... (1) blah, blah... (2) Etc. It is most usual to place the statement of purpose near the end of the Introduction, often as the topic sentence of the final paragraph. It is not necessary (or even desirable) to use the words "hypothesis" or "null hypothesis", since these are usually implicit if you clearly state your purpose and expectations.
- **Provide a clear statement of the rationale for your approach to the problem studied**. For example: State briefly how you approached the problem (e.g., you studied oxidative respiration pathways in isolated mitochondria of cauliflower). This will usually follow your statement of purpose in the last paragraph of the Introduction. Why did you choose this kind of experiment or experimental design? What are the scientific merits of this particular model system? What advantages does it confer in answering the particular question(s) you are posing? Do not discuss here the actual techniques or protocols used in your study (this will be done in the **Materials and Methods**); your readers will be quite familiar with the usual techniques and approaches used in your field. If you are using a novel (new, revolutionary, and never used before) technique or methodology, the merits of the new technique/method versus the previously used methods should be presented in the Introduction.

3. Purpose of a Dissertation Introduction

The Introduction to your dissertation ought to do a number of things:

- Provide preliminary background information (to place your study in context).
- Clarify your focus of study.
- Specify your overall research aim and individual objectives.
- Point out the value of your research.

Note. An introduction essentially aims to highlight the following elements:

1. **What is known?** The background of the research topic needs to be stated right at the onset to enable the readers to understand what is already known on the subject. This sets the stage for the basis of your research.
2. **What is lacking?** You need to justify "why you are carrying out that research work", i.e., whether you are building upon previous research, looking at a novel aspect not evaluated by previous research, or if you are trying to improve upon a previous research that yielded ambiguous results.
3. **What you aim to do?** You need to briefly state the objectives of your research. It is also advisable to present a detailed hypothesis at this juncture only.

4. How long is too long?

There are no strict word limits for writing the introduction; generally it is one of the shorter sections of the paper. Having the readers meander through too much of introduction can be counterproductive as it may cause them to lose focus and interest. You should assume that your work is going to be read by someone who has at least a reasonable knowledge about your research topic, so it is preferable that you do not beat about the bush. For example, for a study evaluating the role of probiotics in acute diarrhea in children, there is no need to discuss definitions and etiology of diarrhea in the introduction; you could start by commenting upon the well-established treatment options for acute diarrhea and how your study will add to the existing knowledge and practice.

5. How to Write the Introduction?

It would be useful to structure your introduction like an "*inverted pyramid*" or what could be simply said as "*funnel approach*". This implies introducing the topic of the paper and discussing it in a broad context and then finally narrowing down to the research problem and hypothesis.

The introduction can be written in about two-to-three paragraphs. The opening paragraph should be dedicated to introducing the topic of research; it may also provide an overview of the topic of research. You must remember that the introduction is not a review of literature but it should convince the readers that you have thoroughly researched the topic and built their confidence in your hypothesis. A thorough literature search is an essential pre-requisite for identifying and framing the research question. However, a very lengthy literature review can put-off the readers so it is important to summarize what research has already been done on that topic, and highlight the lacunae or controversies regarding the same.

In the second paragraph, you need to identify a research niche. This can be done by highlighting the lacunae in existing research or opposing an existing practice or assumption. This will help you to arrive at your research question. You need to emphasize what additional knowledge will be gained through your research and how you aim to bridge the gap in knowledge. An ideal study should focus on

a central question and may be another two or three questions that can be additionally addressed through your study. It is preferred to use "open ended research question". A good research question should yield a testable hypothesis. It may be necessary for you to clarify any key terms or concepts in the introduction itself, particularly if you are dealing with an unfamiliar or new concept. It is also pertinent to declare any assumptions you are going to make in the research work.

In the third paragraph, you need to articulate your objectives and hypothesis. The hypothesis should be a tentative prediction of relationship between two or more variables. It should be neither too general nor too specific, and is often declarative. While stating the hypothesis it would be better to state it implicitly rather than saying that "Our research is based on the hypothesis…." For example, a research hypothesis can be stated as "10-days duration of intravenous antibiotics is not inferior to 14-days therapy for treating neonatal septicemia". The hypothesis should be used to convince the readers about what results are expected from your research. Also, remember that a hypothesis is valuable even if proved to be wrong.

Summary

As the phrase goes **"Well begun is half done**", so is the story with a research paper. A well drafted introduction section with a strong title will help the researcher to win half the battle. So that the introduction writing section in any research paper is of primary importance.

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Practice

Focus Questions

7. What is a dissertation's introduction?

8. What are the elements of a dissertation introduction?

9. What is the purpose of dissertation's introduction?

10. What are the major subsections that ought to be included in a dissertation's introduction?

11. What is the difference between the abstract and the dissertation's introduction?

Exercise 1

Read the following dissertation's introduction and then sort out:

1. The statement of the problem
2. Research objectives, research questions and hypotheses
3. The significance of the study
4. Methodology (research approach, methods, population and sampling population)
5. The structure of the dissertation
6. Definition of key terms used in the study
7. Write down the possible title for each subsection.

One of the main objectives of writing instruction is to enable the students to write well. Yet, we know from our classes, as well as from published articles and from writing scholars, that EFL students do not write as well as we think they should (e.g., Hillocks, 1986; Ping, 2000;Rijaarsdam et al.,2005). The reasons for students' inability to write well enough to meet teachers' expectations are many and varied. Some teachers blame the students for being lazy, while most students lay it on the writing skill for being extremely complex. However, according to Smit (1991), the most obvious reason that students do not write well is that they do not receive a great deal of instruction, practice, and feedback in writing.

It is necessary, then, if we are going to improve the writing of our students, that we teach writing more often and more effectively, and that we require our students to write more often so that they can get the practice they need (e.g., Hampton, 1995; McCormick, 1989). Moreover, it is only by responding to comments on early drafts and putting them into practice that students can "demonstrate what they have learned and internalize from the advice they have received" (Smit, 1991:.3). However, there is a great deal of evidence that teacher written comments —in and of themselves—have no effect on student writing except when they are focused (e.g., Hillocks, 1986; Leki, 1990). The little teachers' unfocused feedback that students usually receive on their finished papers seems not to help them improve through the various stages of the writing process.

Dissatisfied with the depth of analysis that students were able to demonstrate, regarding their own and each other's writing, we decided to try formal peer review activities to see if this would facilitate their ability to become better writers and better at responding to each other's writing. With research indicating improved student learning through active, collaborative settings (e.g., Bruffee, 1984; Slavin, 1989), it was assumed that peer review might be one way to provide students with specific and immediate feedback that will help them improve problematic areas of their writing, particularly in revising, since time constraints and class size prevent teachers from completely fulfilling this aspect.

In the past decades, the focus of research in L2 writing has shifted from the composition product toward the composing process, with a non-linear sequence of stages—planning, drafting, and revising (e.g., Flower & Hayes, 1981; Zamel, 1987). To help students with this process, the transformation of text through multiple drafts, a commonly used strategy that allows for the intervention of other students as audience and collaborators is peer review.

As a component of the process approach to teaching writing, peer review has been an important aspect of L1 composition courses for many years. Since the late 1980's it has received increasing attention in the L2 field (e.g., Villamil & Guerrero, 1996). While the majority of studies on peer review in native speaker composition courses show that it seems to work well, its application in the L2 classroom has not meant automatic success (e.g., Nelson & Murphy, 1992; Carson & Nelson, 1994). The variations (real and perceived) in the EFL compared to the L1 population necessarily involve a number of different questions and concerns that need to be addressed. As Carson and Nelson (1994) argue, many common practices employed for working in writing classrooms can be problematic for EFL students.

Furthermore, the L2 research that has been conducted is often focused on descriptions of peer review activities, with results indicating affective benefits such as friendly class atmosphere and increased writer confidence (e.g., Gousseva, 1998). However, if one assumes that peer review has as its primary goal the positive development of student writing, rather than only goals of an affective nature, it seems vital to study the effectiveness of this method in helping students improve their texts.

Although many L2 writing teachers now understand peer review as part of the process approach to teaching writing, they are reluctant to use this teaching method because negative experiences are often reported by some of those who do try it; some even deem peer review unsuccessful with the L2 learners (c.f. Carson & Nelson, 1994; Nelson & Murphy, 1992). Berg (1999) believes that differences in implementing this teaching method stem largely from a lack of understanding of its definitions, theoretical underpinnings, purpose in general, and application to the EFL classroom in particular.

One very important, yet largely ignored aspect of peer review, and hence a problematic question pertaining to its implementation in the EFL classroom, concerns the role of training; that is, the preparation of students to participate in the peer review activities. Responding to writing is not a skill with which most students—EFL or not—have had extensive experience (Berg, 1999). It is, therefore, unrealistic to assume that they will be able to successfully read and respond to someone else's' writing, and based on the peer review activity, successfully revise their writing. According to Rollinson (2005), if students are to be expected to skillfully participate in peer review, they need to be given the opportunity to learn how. Training students to become effective peer reviewers seems imperative to successful implementation of peer review in an EFL writing class context (Stanley, 1992).

Given these findings, it is important for EFL composition teachers and EFL writing pedagogy in general, to understand how peer review can be effectively used to improve students' writing quality and revision strategies. EFL teachers urgently need knowledge about peer review and its relationship to student writing (DiPardo & Freedman, 1987). They need insights into the role of peer review in revision strategies, answers to whether peer review can be effective in achieving desired writing outcomes, indications of which response (feedback) strategies might be more effective than others, and suggestions for ways of making peer review useful and accessible to EFL students. Thus, as a preliminary step towards understanding the relationships among peer review training, revision strategies, and writing quality, this study investigates the role of trained peer review in shaping EFL students' writing.

The present study attempts to answer the need for more focused research on peer review among EFL students since most of the conclusions about peer review for non-native speakers of English come from ESL research. Specifically, this study investigates the effect of peer review on improving EFL students' writing. This requires examining any differences in writing performance between two groups of students to determine whether peer review would produce better writing. Our primary aim is to examine whether face-to-face peer review activities would help second-year EFL students at "Teacher Training School of Constantine" to effectively revise their expository essays, at both global and local levels (i.e., for meaning and form), and whether those revisions would ultimately result in improved texts.

This study is intended to offer insights into theory and practice that underlie effective writing instruction. Concerning practice, this research project may benefit three groups of people. First, for those teachers who used or are using peer review activities in their EFL writing classroom, the study might serve as a stimulus to help them reflect on their own practices in using peer review as a regular activity. Second, for those who are or who will be teaching EFL writing courses yet have never incorporated or are not yet planning to use peer review activities in their EFL writing classrooms, the study might serve as a guide to show them what can be done and how. Third, for those who are sceptical about peer review, and those who have used peer review but found their practice ineffective in one way or another, the study provides concrete examples and analyses to show what some of the problems with peer review are and how to solve them. If peer review reveals itself successful in improving student writing, it becomes an example of a teaching strategy that has been demonstrated to important work in the real classroom.

Regarding theory, this research project may contribute in filling a gap in the current research, as it is carried out to examine the actual effects of peer review on improving EFL students' writing, a major issue that has not been adequately addressed. As social interaction is such a key element of peer review process, it is logical to deem that EFL students—with a common native language and culture—

behave and perform differently in the peer review setting from ESL students, who usually come from different linguistic and cultural backgrounds.

In sum, the study can advance scholarship in a number of ways. The insights and understandings of collaborative learning and communicative teaching developed in this research can be useful for teacher education and for designing, implementing and evaluating EFL writing curricula. Insights into how these students participate in peer review activities can also be important to research knowledge because they contribute to an understanding of this instructional technique as experienced by its participants in the real world of the classroom. The pedagogical and research implications of the study will be more elaborated on in chapter Six.

The present investigation is largely framed by L2 composition research in the areas of revision and feedback. Although research perspectives provide a common purpose, focus, and interest in the study and teaching of writing, methodological diversity do exist (Matsuda & Silva, 2005). Thus, while the general research interest, design, and methods were modeled on previous studies in L2 composition, this study is not dictated by a narrowly defined subject area or by any one particular inquiry method advocated in the composition literature. Mastering the skill of L2 writing is a long and complex process, as it involves such a variety of difficulties and complexities that even experienced writers would find the work laborious (Trimmer, 1995). To help learners improve their writing, instructors and researchers alike have been looking for ways to facilitate this process. Workshop pedagogy is an innovative approach that has been widely used in L1 writing classes, in which peer feedback, revision, editing, discussing and sharing writing in groups are the major activities.

These practices stand in stark contrast to teacher-cent red teaching practices. It is now widely accepted that learners are active constructors rather than passive recipients of knowledge (e.g., Bruffee, 1986). In peer review, talking and questioning to explore ideas as well as writing is emphasized (Liu & Hansen, 2002). As a result, students have a greater voice and play a role in deciding what information is useful and how they can work with it.

However, the success of collaborative learning strategies, such as peer review, is not automatic. Teachers should provide the groups with initial training on cooperative learning procedures as well as group social skills. Berg (1999) confirms that training students to steer away from surface level concerns and instead focus their peer review work on aspects of meaning can have a positive effect on peer review interactions and subsequent revisions.

The idea that successful revision involves changing ideas and clarifying meaning of text, rather than editing, represents generally held beliefs among revision researchers. Fitzgerald (1987) summarizes some of the main findings on revision. She states that research has shown that inexperienced writers do not revise very much, and unless given support and encouragement, neither do more experienced writers. In general, the most common revisions are surface changes, but among experienced

writers, there is a greater tendency to revise more for meaning, which appears to improve the quality of compositions. Thus, based on current knowledge about revision, it seems that a crucial variation in strategies concerns the writer's tendencies to focus revision either on meaning of text or on aspects that do not concern meaning. This division of meaning versus surface revisions is the main criterion in Faigley and Witte's (1981) taxonomy of revision strategies.

Revision has been identified as the most important determinant of the final quality of written work (Sommers, 1980; Zamel, 1983); unfortunately, overall, there is less research in L2 revision process than in L1, not to mention research on revision strategies. Given these findings, the close relations between revision and the quality of written work, and the scarcity of research in the area (i.e., L2 revision strategies), this study seems to be both necessary and important to instruction and research of L2 writing.

Similarly, relatively little research has considered what L2 students think about their instructors' feedback, how well they understand it, and whether or how they might employ it for revision when writing subsequent essays (e.g., Brice, 1995; Ferris, 1995; Hedgcock & Lefkowitz, 1994, 1996; Leki, 1991; Radecki & Swales, 1988; Saito, 1994). In general, this previous research has shown that teachers have different priorities when they respond to students' writing. Some studies indicate that teachers respond primarily to mechanics, Grammar / usage, and vocabulary (Saito, 1994; Zamel, 1985); other studies show that professors pay more attention to content and organisation than to mechanical errors. Teacher correction, error identification, and written commentary appear to be the most widely used techniques when responding to adult L2 students' writing (Saito, 1994).

Research conducted in the L2/foreign language context has also shown that such L2 writers definitely expect feedback on language form, finding it much more important than native speakers do. They also tend to expect teachers to correct all surface language errors in their writing. However, just like L1 students, L2 students seem to prefer dear and detailed feedback. Cohen and Cavalcanti (1990) reported that many L2 students often had problems reading teachers' handwriting; they found some comments confusing and often did not understand various marking symbols employed. All of the participants involved in Brice's (1995) study had difficulty and were frustrated with the symbol system the teacher used to indicate grammar or vocabulary errors, and they expressed a preference for more explicit feedback. This corroborates the findings of Leki's (1991) and Radecki & Swales' (1988) surveys on feedback preferences. Ferris (1995) also reported that students had a variety of
problems in understanding their teacher's comments due to specific grammar terms and symbols used, and vague questions about content, as well as because of the instructor's poor handwriting. Moreover, some of these students complained about the feedback being too negative to be helpful.

In the EFL writing classes, we have observed students whose writing ability ranged from barely capable of self-expression in writing, to others who produced fluid, creative, and powerful writing

in polished pieces that displayed their eloquent thinking and ability to manipulate language. We frequently wondered about what made the difference between the two ends of the spectrum, and whether there is a way to attempt to bring those distant polarities closer together. In addition, these EFL students usually make very few revisions on subsequent drafts of the texts they write, and even when they do re-write, they barely take into consideration the feedback we provide on their early drafts, though they acknowledge its importance. These classroom experiences triggered the interest for the current study.

In relation to the theoretical framework reviewed in this section, and based on classroom observation, specific research questions are formed about the effects of trained peer review on writing quality and revision strategies. To reiterate, one fundamental orientation of the present study is to investigate whether students would act purposefully and actively in peer review activities to successfully achieve intended goals, i.e. improve their writing. The present investigation is carried out to answer the following research questions:

a. Does peer review alter the type and amount of revision that second-year EFL students make in subsequent drafts of the expository texts they produce?

b. Do these revisions positively influence the overall quality of the produced texts?

Accordingly, it is hypothesized that peer review will yield a greater amount of revision and a higher text quality. In other words, it is hypothesized that second year EFL students, who are trained to participate in peer review activities, will exhibit a statistically significant greater amount of revisions, and a statistically significant higher overall text-quality, than second year students who do not participate in peer review.

In order to answer the research questions, an experimental action-type research approach is conducted. The independent variable of this study is peer review, and the dependent variable is improvement in student writing (when measured by text quality and text revision). The control variables of this study are age, previous achievement in English composition, year of study, and prior peer review experience. The setting for this experimental investigation consists of two second-year EFL writing classrooms at ENS, Constantine. The participants are 52 second-year students of 19 years old from a total population of 132 students. The teacher-researcher teaches both groups simultaneously. The research for this study takes place over a period of 10 weeks, and consists of multiple stages: the pilot study, the training phase, and the implementation phase. The pilot study consists mainly of peer review demonstration sessions, a pre-test composition (E1), and quantitative questionnaires used mainly to discover students' attitudes towards collaborative learning and different types of feedback, among which is peer review. In the second stage, the experimental group receives extensive modelling and training on peer review, while the control group does not. Then, students in both groups write three multipledraft expository essays, but only the last one (E4) is to be compared with the pre-test essay (E1) to determine if there is any improvement in student writing due to the treatment. Notes are to be kept during

observations, and reflections are made on both, the teaching and students' interactions, throughout the research.

Two separate analyses of data are conducted: a text revision analysis, and a text quality analysis. Type and amount of text revision are determined through comparison of students' first and subsequent drafts. Text quality is determined through a holistic rating procedure of final drafts. ANOVAs and correlation tests are to be used for the analyses. In sum, through a comparison of findings between the control group and the experimental group, this study attempts to provide insights into the effects of peer review on improving EFL students' expository writing. A more complete description of the research methods and data analyses is presented in chapters 4 and 5, respectively.

To provide the reader with ready and brief access and to avoid ambiguity, key terms, and concepts appearing throughout this study are listed below. The meaning of these terms is more fully explicated in subsequent sections of the dissertation. While there is a considerable debate as to the definition of these terms, it is not the purpose of this study to create their "defining definition". Rather, the definitions provided in this section are meant, more or less, to serve the purposes of this investigation only.

- **Collaborative Learning (CL):** involves small groups in which students have to jointly organize their time and resources to solve a problem, complete a task, or accomplish a specific goal (Topping & Ehly, 1998). Draft: "a version of the text which the writer knows he or she will improve on" (Brooks & Grundy, 1990, p. 22).
- **English as a Foreign Language (EFL):** an instruction designed to assist individuals whose native or dominant language is other than English. Expository Writing: a text that explains or analyzes a topic, based on a generalization, using specific details and examples (Smalle, Ruetten, & Kozyrev, 2000). In this study, this term is used interchangeably with example essay (i.e. an essay consisting of five paragraphs developed using a set of examples).
- **Peer Modeling:** "the provision of a competent exemplar of desirable learning behavior by a member or members of a group with the intention that others in the group will imitate it [through which] the teacher can develop understanding of abstract principles […and] peers […] can show that something is possible, even for peers who had no belief in their capability" (Topping & Ehly, 1998, p.5).
- **Peer Review:** a process whereby the students use each other as sources of feedback, "in such a way that they assume roles and responsibilities normally taken by a formally trained teacher in commenting on and critiquing each other's drafts in both written and oral formats in the process of writing" (Rollinson, 2005, p.23).
- **Process Writing:** an instructional model that focuses on the stages of planning, drafting, and revising, as a part of a recursive, non-linear, sequence, rather than on the final product only. In this

approach, students are expected to write multiple drafts of a paper and make changes in their paper based on the feedback they receive.

The dissertation is organized as follows. Chapter Two provides a brief background in the teaching of writing scholarship, particularly in revision and feedback. Chapter Three reports relevant literature in the area of peer review, with emphasis on ESL/EFL studies. Chapter Four explains the research design and methodology used in investigating the effects of peer review on student writing. In Chapter Five, results of the investigation are presented and discussed. Finally, Chapter Six summarizes the research findings, enumerates limitations of the investigation, and makes suggestions for classroom practice and future research.