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# Ministry of Higher Education and Scientific Research

## University of Mohamed Lamine Debaghine Setif 2
## Faculty of Letters and Languages
## Department of English Language and Literature

### Licence
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### Module: TTU
### Techniques de Travail Universitaire
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# TTU
# Techniques de Travail Universitaire

# Contents

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# Preface

This book entitled University Working Techniques TTU is designed for Second Year level at Mohamed Lamine Debaghine Setif 2 University. This document, specifically, has come into existence in the light of the needs for a complimentary reference that best suits the level and needs of students who are exposed to this module. Of course, this document could potentially be adapted for use in parallel with other documents. In fact, the lectures included have been developed by the author himself over a number of three years of professional experience in teaching this module at Setif 2 University, in conjunction with other references which are all acknowledged and cited. In this respect, this document is primarily intended for pedagogical purposes.

This document puts into discussion the following main topics, introduction into the module, critical thinking process, critical thinking blooms taxonomy, creative thinking, critical thinking in the language classroom, academic writing, ways of knowing, scientific research, the scientific method, the structure of the dissertation, title writing, abstract writing, and introduction writing. Almost after every lecture, a number of study questions and exercises appear. The document has also integrated a number of diagrams, figures, tables and charts to illustrate particular topics. It is worth to mention that description and objectives are included throughout the document for each lecture. Furthermore, it includes a number of techniques that help to make it more practical such as the general outline, table of contents, procedures and activities.

## General Aims of the Document

This document mainly aims to provide English Foreign Language students with a basic knowledge of the University Working Techniques in order to make them able to act successfully in university. Furthermore, the systematic incorporation of the lectures from basic into advanced topics will help students, at the end, to be able to achieve the multiple tasks assigned to them as students. To conclude, the current document will help students to achieve the following general aims:

1. To get a general overview of how to behave, learn in university.
2. To be familiar with the issue of facts versus opinions.
3. To be able to describe the process of human thinking action.
4. To be able to describe the critical thinking process.
5. To gain a thorough understanding of the Blooms taxonomy.
6. To gain a thorough understanding of the creative thinking.
7. To acquire practical knowledge of the use of critical thinking skills.
8. To be able to describe, grade and contrast between the different types of thinking.
9. To be familiar with the rules, conventions and types of writing including academic writing.

10. To know the different ways of knowing and sources of knowledge.

11. To understand the nature of scientific research.

12. To understand the process of the scientific method.

13. To be familiar with the structure of the dissertation.

14. To know the rules and conventions of tittle, abstract and introduction writing.

15. To understand the importance of the critical thinking process and skills in the language classroom.

16. To understand the importance of each lecture, topic and task in the evaluation process as well as in the university at large.

## Procedures and Activities

In order to ensure a better teaching and learning environment of the TTU module for second year English Foreign Language students, the current document set a number of procedures and activities for each lecture. The common procedures are as follows:

➢ The first minutes are usually sufficient" for a brief revision in order to make the relationship between the previous lecture and the subsequent one clearer.

➢ Discuss the general outline of the lecture in relationship with the topic title, the main points of the lecture, procedures, and the terminal and secondary objectives of every section of the lecture.

➢ Interact with the class as a whole about the content through discussion, examples, illustrations, and study questions.

➢ Re-explain briefly the lecture and then explain the instructions of each exercise and do some sample exercises then allow few minutes to students to complete other exercises but not all. Students should talk about their answers to a partner in a small group. It is important to remember that the practical sessions must be pair or group work and students-students as well as teacher-students interaction must be encouraged.

➢ Finally, discuss the keys to the exercises with the class as a whole. Different and similar answers of the students must be highlighted and discussed.

➢ Extra related work must be assigned to the students as homework, field work, role play, projects and workshops. This procedure helps to check whether lectures have been understood and help the students to invest and re-invest what they have learned real-life communications.

➢ These procedures are repeated in each session either exactly or with very little modifications.

➢ Students and teacher are not obliged to discuss all the contents and exercises of each lecture. It is up to them to be selective and keep others to be further discussed.

# Lecture 1

## Introduction to the Module: TTU: University Working Techniques

### Description of the Lecture

This introductory lecture is concerned with keystones concepts and terms of the module of University Working Techniques. It cultivates students with the meaning of university, the role of university, and the triangle of university. The lecture presents a glossary of the tasks and terms for university.

### Learning Objectives of the Lecture

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

❖ Be familiar with the definition of the term University Working Techniques.
❖ Be familiar with the meaning of university.
❖ Understand the university life in general.
❖ Discover the triangle of university.
❖ Be aware of the glossary of university.

### Introduction

This introductory lecture is concerned with the main concepts that constitute the module of university working techniques. It presents the definitions of the terms that form the full name of the module, the university and its contents, and the glossary of the university life as a whole in which university students are expecting to deal with some of them each time, level and stream.

### 1. Issues of Terminologies

### 1. 1. University

"A University is a place … whither students come from every quarter for every kind of knowledge; … a place for the communication and circulation of thought, by means of personal intercourse. … It is the place to which a thousand schools make contributions; in which the intellect may safely range and speculate. It is a place where inquiry is pushed forward, discoveries verified and perfected, and … error exposed, by the collision of mind with mind, and knowledge with knowledge. … Mutual education, in a large sense of the word, is one of the great and incessant occupations of human society. … One generation forms another. … We must consult the living man and listen to his living voice, by familiar intercourse … to adjust together the claims and relations of their respective subjects of

investigation. Thus is created a pure and clear atmosphere of thought, which the student also breathes."
So wrote John Henry Newman in 1852.1

## 1. 2. Work and Working

The act to do something that involves physical or mental efforts, especially as part of a job in order to gain benefit from it. Furthermore, it refers to the function and operation to have the effects or results that you want. Example of student does something as physical or mental to achieve different roles and ends of university.

## 1. 3. Techniques

A technique is a method of doing some tasks or performing something. Your technique for opening drinks might be to twist the top off with your teeth. If so, your dentist has a good tooth-repair technique. The noun technique can also refer to someone skillfulness with the fundamentals of a particular task. A writer could have very individual writing techniques- one might need to write late at night and another early in the morning, some have to write by hand on paper, while others always use the computer.

## 1. 4. University Working Techniques

The multiple terms altogether constitute the name of the module. The name refers to the different tasks, activities, and everything that the variety of university staff such as students, teachers, and researchers perform especially in the fields of education, research, pedagogy and innovation in order to fulfill the short as well as long term objectives and roles that university has been set for.

## 2. The Triangle of University

It is not surprising therefore that university have moved from the periphery to the center of government agendas. Governments around the world have invested heavily in universities and made demands upon them about objectives and even the processes used to attain them. The Algerian university has promoted a "modernization agenda" for university reform as a core condition for the success. The Algerian has defined the role of universities as to exploit the so-called "knowledge triangle of research, education and innovation".

## 2. 1. Education

There is, or should be, in university education, a concern not only with what is learned, but also with how it is learned. Too much pedagogy is concerned solely with the transfer of information. Even an education directed towards immediate vocational ends is less than it could be, and graduates are left with less potential than they might have, if it fails to engage the student in grappling with uncertainty, with deep underlying issues and with context. Generation by generation universities serve to make students

think. They are taught to seek out what is relevant to the resolution of a problem; they learn progressively to identify problems for themselves and to resolve them by rational argument supported by evidence. They learn to seek the true meaning of things: to distinguish between the true and the merely seemingly true, to verify for themselves what is stable in that very unstable compound that often passes for knowledge. These are deeply personal, private goods, but they are also public goods. They are the qualities which every society needs in its citizens. That is even more the case in Algerian society which aims to produce these citizens, or at least enough of them to leaven and lead society generation by generation.

## 2. 2. Research

Successful research, whether in the sciences, humanities or social sciences, depends upon a culture and individual attitudes that value curiosity, skepticism, serendipity, creativity and genius. They are values that are crucial to the university educational process at its most profound, and are most readily acquired in an environment of free-ranging speculation and research that is permeated by them. Their transfer into society by graduates who embody them is an essential contribution to an innovative culture and a spirit of informed civic responsibility.

## 2. 3. Innovation

Universities can and do contribute to the innovation process, but not as its drivers. Innovation is dominantly a process of business engagement with markets, in which universities can only play a minor active role. They do however contribute to the fertility of the environment that innovation needs if it is to flourish. They help to create an environment sympathetic to and supportive of innovation, and particularly where they are associated with internationally competitive research and excellent graduates, they create a hubbub of creativity that attracts research-intensive companies and investment into a region, and help catalyze innovation in indigenous businesses. The bedrock for this potential remains however the university's commitment to education in the deepest sense, and its exploration at and beyond the limits of human understanding.

## 3. The Importance of Humanities and Social Sciences

The arguments presented above are generic arguments, applicable to the whole spectrum of university disciplines. However, we wish to single out and underline the role of the humanities and social sciences, as government policies for universities, particularly in research, too frequently concentrate on science and technology, with a perfunctory nod towards the humanities and social sciences that implicitly undervalues their importance for society.

The humanities are concerned with what it means to be human: the stories, the ideas, the words that help us make sense of our lives and the world we live in; how we have created it, and are created by it. They give voice to feeling and artistic shape to experience, exploring issues of morality and value.

The social sciences attempt to deduce, through scientific observation, the processes that govern the behavior of individuals and groups. They are crucial to the creation of effective social policy.

There is an implicit notion that the understanding they confer is less important than that loosely termed "science", although natural scientists themselves rarely take that view. **Research in the humanities and social sciences is concerned with issues that are essential to stability, good order, and creativity, inspiration in society, constructing the man and building the nation.**

## 4. Glossary for the related University Tasks

Understanding the meaning of words, especially task words, helps students to know exactly what is being asked. It takes them halfway towards narrowing down their material and selecting their answer. Task words and terms direct them and tell them how to go through tasks and about answering a question. Here is a list of such words and others that they are most likely to come across frequently in their courses and overall interactions in university.

- **Task:** it is an activity that needs to be accomplished within a defined period of time or by a deadline. In the sense of unit of work, in a job meaning one-off piece of work. A task can correspond to a single step. **The related terms are exercise, activity, etc.**

- **Team work**: is a group of individuals or students working together to achieve their common goal. They are a group of students who are interdependent with respect to information, resources, knowledge and skills and who seek to combine their efforts to achieve a common goal. A group does not necessarily constitute a team. Teams normally have members with complementary skills and generate synergy through coordinated efforts which allows each member to minimize their weaknesses. Team work is usually located in the same setting as it is connected to a kind of organization, company, and institution. **The related terms are group work; crew, partnership, etc. see also pair work, individual work, etc.**

- **Education:** it is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits. Educational methods include teaching, training, and storytelling. Discussion and directed research. Education frequently takes place under the guidance of educators; however learners can also educate themselves. Education can take place in formal or informal settings and any experience that can has a formative effect on the way one thinks, feels, or act may be considered educational. The methodology of teaching is called pedagogy. In most countries, education is compulsory up to a certain age. There is a movement for education reform, and in particular for evidence-based education.

- **Pedagogy**: it is the art or science of being a teacher and of learning. Pedagogy, most commonly understood as the approach to teaching, refers to the theory and practice of learning, and how this process influences, and is influenced by the social, political, and psychological developments of

learners. The word pedagogy comes from the Greek word which means to lead the child. In ancient Greece, rich man had a slave to instruct their son as a tutor, or to take them to academy. Pedagogy, taken as an academic discipline, is the study of how knowledge and skills are imparted in the educational context, and it considers the interactions that take place during learning. Both the theory and practice of pedagogy vary greatly, as they reflect different social, political and cultural contexts. The pedagogy adopted by teachers' shapes their actions, judgments, and other teaching strategies by taking into consideration theories of learning, understandings of students and their needs, and the backgrounds and interests of individual students. Its aims may range from furthering liberal education (the general development of human potential) to the narrower specifics of vocational education (the imparting and acquisition of specific skills). **The related terms are teaching, etc.**

- **Research:** it is that creative and systematic work undertaken to increase the stock of knowledge, including the knowledge of humans, culture and society, and the use of this stock of knowledge to devise new applications. It involves the collection, organization, and analysis of information to increase our understanding of a topic or issue. At a general level, research has three steps, pose a question, collect data to answer the question, and present an answer to the question. These steps should take place in the form of familiar process.

- **Student:** A **student** is primarily a person enrolled in a school or other educational institution who attends classes in a course to attain the appropriate level of mastery of a subject under the guidance of an instructor and who devotes time outside class to do whatever activities the instructor assigns that are necessary either for class preparation or to submit evidence of progress towards that mastery. In the broader sense, a student is anyone who applies themselves to the intensive intellectual engagement with some matter necessary to master it as part of some practical affair in which such mastery is basic or decisive. In the United Kingdom and most commonwealth countries, the term "student" denotes those enrolled in secondary schools and higher (e.g., college or university); those enrolled in primary/elementary schools are called "pupils". **The related terms are learner, pupils, trainee, etc.**

- **Higher Education:** is tertiary education leading to award of an academic degree. Higher education, also called **post-secondary education**, third-level or tertiary education, is an optional final stage of formal learning that occurs after completion of secondary education. Tertiary education at a non-degree level is sometimes referred to as further education or continuing education as distinct from higher education. This third-level e of formal learning that occurs after completion of secondary education. It is delivered at universities, academies, colleges, seminaries, conservatories, and institutes of technology, and through certain college-level institutions, including vocational schools, trade schools, and other career colleges that award degrees. Tertiary

education at non-degree level is sometimes referred to as further education or continuing education as distinct from higher education.

- **Lecture:** a lecture is from French lecture, meaning reading. So the term lecture is an oral presentation intended to present information or teaches about a particular subject, for example by a university or college teacher. Lectures are sued to convey critical information, history, background theories, and equations. Usually the lecturer will stand at the front of the room and recite information relevant to the lecture content. Lectures have a significant role outside the classroom, as well. Academic and scientific awards routinely include a lecture as parts of the honor, and academic conferences often center on keynote addresses. Lectures represent a continuation of oral tradition in contrast to textual communication in books and other media. **The related terms are conference, lesson, presentation, etc.**

- **Practice**: it is the act of rehearsing a behavior over and over, engaging in an activity again and again, for the purpose of improving or mastering it, as in the phase of practice makes perfect. Related examples such as practice of English language grammar, phonetics, etc.

- **Exam**: it is an assessment intended to measure a test-takers knowledge, skill, aptitude etc. An exam may be administered verbally, on paper, on a computer, or in a predetermined area that requires a test taker to demonstrate or perform a set of skills. A test may be informal or formal. A formal test might be a final examination administered by a teacher of institution in a classroom. **The related terms are examination, test, quiz, evaluation, assessment, distant exam; make up exam, selection techniques, etc.**

- **Issue:** An important topic for discussion; something worth thinking and raising questions about.

- **Methodology:** A system of methods and principles for doing something. Often used to explain methods for carrying out research.

- **Objective:** It is the point, or the thing aimed at. It is what you want to achieve by a particular activity.

- **Specialty:** in academia, specialization is a course of study or major at an academic institution or may refer to the field in which a specialist practices. In the case of an educator, academic specialization pertains to the subject that he specializes in and teaches. It is considered a precondition of objective truth and works by restricting the minds propensity for eclecticism through methodological rigor and studious effort. It is also employed as an information management strategy, which operates by fragmenting an issue into different aspective fields' areas of expertise to obtain truth.

- **Filed:** an academic discipline or field of study is a branch of knowledge, taught and researched as part of higher education. A scholars discipline is commonly defined by the university faculties and learned societies to which they belong and the academic journals in which they publish research.

Fields of study vary between universities and even programs. Most disciplines are broken down into potentially overlapping branches called sub-disciplines. There is no consensus on how some academic disciplines should be classified such as whether anthropology and linguistics are disciplines of social science or fields within the humanities. More generally, the proper criteria for organizing knowledge into disciplines are also open to debate. **The related terms are domain, discipline, etc.**

- **Module:** it is part or parts into which learning can be divided. At school, each lesson usually covers one subject only. Some of the most common subjects at school are English, French, history, mathematics, physical education and science. In higher education it refers to set courses as a unit of teaching and learning that typically last one term, which is led by one or more instructors, and has a fixed roster of students. This set of courses is among the entire program of studies required to complete a university degree and the term module or unit would be used to refer to a n academic course. In other words, it is a collection of courses over a year or semester. Modules are time-limited in most universities worldwide, lasting anywhere between several weeks to several semesters; they can either be compulsory material or elective. **The related terms are unit, courses, subject matter, etc**.

- **Topic:** it is a discrete piece of content that is about a specific subject, has an identifiable purpose, and can stand alone.

- **Learning:** it is the process of acquiring new understanding, knowledge, behaviors, skills, values, and preferences. The ability to learn is possessed by humans, animals, and some machines, there is also evidence for some kind of learning in certain plants. Learning may occur consciously or without conscious awareness.

- **LMD System:** it is that system followed as a model of study in many universities and countries. It is made up of License, Master, and Doctorate degrees. It is a European educational system designed by the Bologna Process.

- **Training**: it is about teaching or developing in oneself or others. Any skills and knowledge or fitness that relate to specific competencies. Training has specific goals of improving ones capability, capacity, productivity and performance. If forms the core of apprenticeships and provides the backbone of contents at institutes of technology and other schools. In addition to the basic training required for a trade, occupation or profession, training may continue beyond initial competence to maintain, upgrade and updates skills throughout working like. People with some professions and occupations may refer to this sort of training as professional developments. Training also refers to the developments of physical fitness related to a specific competence such as sport, martial arts, military applications and some other occupations.

- **Training:** it means changing behaviors through learning new requirements and methods. Its effect is measured by testing to see if the behavior has been successfully changed. Follow-up sessions may be repeated until the de sired behavior has been achieved. **The related terms are professional training, post-doc training, etc.**

- **Academic Diploma:** an academic degree is a qualification awarded to students upon successful completion of a course of study in higher education, usually at a college or university. These institutions usually offer degrees of various levels, usually including bachelors, master's, and doctorate, often alongside other academic certificate and professional degrees. The most common undergraduate degree is the bachelor's degree, although in some countries there are lower level higher education qualifications that are also titled degrees such as associate degrees and foundation degrees. **The related terms are degree diploma, non-degree diploma, etc.**

- **Administration:** it refers to the group of individuals who are in charge of creating and enforcing rules and regulations, or those in leadership positions who complete important tasks. An example of administration is the president of the United States of America and the individuals he appointed to support him. The term may refer also to the act of managing duties, responsibilities, or rules. A second example of the term is the act of the principal in the school managing the faculty and staff and employing the rules of the school system.

- **Teacher**: also called a school teacher or, in some contexts, an educator is a person who helps students to acquire knowledge, competence, or virtue. Informally the role of teacher may be taken on by anyone in the sense when showing a colleague how to perform a specific task. In some countries, teaching young people of school age may be carried out in an informal setting, such as within a family rather than in a formal setting such as school, or college. Some other professions may involve a significant amount of teaching. In most countries, formal teaching of students is usually carried out by paid professional teachers. **The related terms are lecturer, professor, pedagogue, instructor, tutor, supervisor, etc.**

- **University**: it is an institution where teaching, learning, and research are done. **The related terms are school, college, institution, etc.**

- **Faculty**: it is a division within a university or college comprising one subject or a group of related subject's areas, possibly also delimited by level such as undergraduate. In American usage of the term such divisions are generally referred to as colleges such as college of arts and sciences or schools such as school of business, but may also mix terminology such as Harvard university has a faculty of arts and sciences but a law school. In Algeria usually refers to a sub-division of a university usually a group of departments.

- **Department:** an academic department is a division of a university or school faculty devoted to a particular discipline. Departments in professional graduate schools will be specialized like the

school itself. So arts faculty or school will probably have departments of letters, languages and ….so on.

- **Institution:** an institute is an organizational body created for a certain purpose. Often they are research organizations –research institutions- created to do research on specific topics. An institute can also be a professional body, or an educational unit imparting vocational training in some countries institutes can be parts of a university or other institutions of higher education, either as a group of departments or an autonomous educational institutions without a traditional university status such as a university institute. In some other countries, such as South Korea and India, private schools are sometimes referred to as institutes, rather than schools. In Spain secondary schools are referred to as institutes.

- **Academic and Scholar:** academia is a general term for the whole of higher education and academic research. The word comes from the Greek referring to the larger body of knowledge, its development and transmission across generations. An academic is a person who works as a teacher or researcher at a university or other higher education institution. An academic usually hold an advanced degree. The term scholar is sometimes used with equivalent meaning to that of academic and describes those who attain mastery in a research discipline.

- **Vocational Schools:** Higher vocational education and training takes place at the non-university tertiary level. Such education combines teaching of both practical skills and theoretical expertise. Higher education differs from other forms of post-secondary education such as that offered by institutions of vocational education, which are more colloquially known as trade schools. Higher vocational education might be contrasted with education in a usually broader scientific field, which might concentrate on theory and abstract conceptual knowledge.

- **Professional Higher Education:** This describes a distinct form of higher education that offers a particularly intense integration with the world of work in all its aspects (including teaching, learning, research and governance) and at all levels of the overarching Qualifications Framework of the Higher Education Area. Its function is to diversify learning opportunities, enhance employability, offer qualifications and stimulate innovation, for the benefit of learners and society.

- **Graduation**: it is the award of a diploma or academic degree, or the ceremony that is sometimes associated with it, in which students become graduates. The date of graduation of often called graduation day. The graduation ceremony itself is also sometimes called commencement, convocation or invocation. So it's that confirmation of the finishing of an academy. The name of the ceremony is usually the degree day. In addition, it means the moving of a student from one grade to another higher grade. **The related terms are post-graduation, post-secondary education, etc.**

- **Dissertation**: it is a document written in support of an academic degree or professional qualification. It presents the author research and findings. It means the same as thesis. This term can be used to describe an argument without relation to academic degrees. The term thesis may also be used for the central claim of an essay or similar work. See the subsequent lecture for more details. **The related terms are theirs, research project, etc.**

- **Viva voce:** is a Latin phrase meaning with the living voice but most often translated as by word of mouth. It may refer to the oral exam which is described as a defense. It is used as part of the doctoral examination although it is sometimes also used for Masters' and bachelors' degrees. **The related terms are oral presentation, the word of mouth, etc.**

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## Summary

The current lecture is an introductory session to the issues, concerns and tasks that students might need and perform at university. So it summarizes what is possible and what should be done and performed. Through this lecture students will understand the university environment as well as duties and rights that make them successful students and researchers.

## References

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- Humboldt, W. von. *Über die innere und aeussere Organisation der hoeheren wissenschaftlichen Anstalten in Berlin.* (1810). In Leitzmann et al., eds., *Wilhelm von Humboldts Gesammelte Schriften*. Band X. Berlin 1903–35.
- The American Philosophical Society was set up in 1743 as the "American Philosophical Society held at Philadelphia for the promotion of useful knowledge".

## Practice

### Focus Questions

1. What is the definition of the terms "University Working Techniques"?
2. What is the meaning of the term "University"?
3. What is the role of University?
4. What are the main angles of the triangle of university?
5. Define and explain the nature of human and social sciences.
6. What are the main tasks of students in university?

# Exercise 1

**Analyze and discuss the following statements as far as the Algerian university is concerned.**

1. The "western" university has provided an almost universal model for higher education.

2. In research, universities create new possibilities; in teaching, they shape new people.

3. There is a growing tendency to see universities as sources of highly specific, marketable commodities.

4. It is crucial that the true role of universities is understood before mechanisms to promote change are put in place.

5. Universities must articulate more clearly what they stand for, and what their true role in society is.

6. The most useful knowledge is that grounded in deep understanding. It is often relinquished for shallower perceptions of utility.

7. A university that molds itself only to present demands is not listening to its historians.

8. Universities serve to make students think: to resolve problems by argument supported by evidence; not to be dismayed by complexity, but bold in unraveling it.

9. Statements about the deeper values of education can be traduced as sentimental. We regard them as deeply utilitarian.

10. Innovation is dominantly a process of business engagement with markets. Universities can only play a minor active role.

11. Universities are unique amongst human institutions in the range of knowledge they encompass.

12. Autonomous academics have the freedom, and the duty, liberally to contribute their understanding to the benefit of society.

13. A shared ethos enables universities to collaborate across cultural divides and deepen their students' understanding of a complex world.

14. Universities must not be seduced by the fallacy of managerial primacy.

15. The challenge is to exploit the potential of autonomy and freedom without oppressive accountability.

16. It is the totality of the university enterprise that is important, as the only place where that totality of us and our world is brought together, and which makes it the strongest provider of the rational explanation and meaning that societies need. It is the complex, interacting whole that is the source of the separate benefits valued by society. It needs to be understood, valued and managed as a whole.

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**Lecture Two**

**Facts versus Opinions**

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## Description of the Lecture

The lecture is about the issue of facts and opinions statements. Through this lecture students will become familiar with the principles of facts and opinions, the different meanings of facts and opinions, the distinctions between facts and opinions. The emphasis is put on the right decision concerning the distinction between facts and opinions. Key content of the lecture includes lecture and exercises.

## 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 term facts versus opinion statement.
- ❖ Discover the types of opinion.
- ❖ Be familiar with the qualities of facts and opinions.
- ❖ Be familiar with the relationship between facts and opinions.
- ❖ Teach students to start to think critically.

## Introduction

When forming personal convictions, we often interpret factual evidence through the filter of our values, feelings, tastes, and past experiences. Hence, most statements we make in speaking and writing are assertions of fact, opinion, belief, or prejudice. The usefulness and acceptability of an assertion can be improved or diminished by the nature of the assertion, depending on which of the following categories it falls into either into factual statements or opinion statement.

## 1. Definition of Fact

A fact is a statement that can be tested by experimentation, observation or research and shown to be true or untrue. Factual statements can be verified and proven true or false. It is worth to mention that a false fact is still a fact. So they are objective and contain information but do not tell what the speaker thinks about the topic. Generally the following questions are used to identify facts;

- ❖ Can the statement be proved or demonstrated to be true?
- ❖ Can the statement be observed in practice or operation?
- ❖ Can you see it happen?
- ❖ Can the statement be verified by witnesses, manuscripts, or documents?

Examples of some facts statements are as follows;

- My car payment is 250 dollars per month.
- The majority of experts agree that smoking daily can improve your health.
- The world football cup tool place in South Africa.

## 2. Definition of Opinion

Statements opinions express the speaker feelings, attitudes, value judgment, or beliefs. They are neither true nor false. Or it may feel true for some, but false for others. They are one person view about a topic or issue, but can be verified. A speaker may use factual statement to support his opinions. Opinion statement may occur even in what seems to be strictly factual material. Generally the following words are used to identify opinions;

- ✓ **Biased words** like bad, worse, worst, good, better, best, worthwhile, worthless,…….
- ✓ **Qualifiers** like all, always, likely, never, might, seem, possibly, probably, should …
- ✓ **Verbs** like I feel, I think, I believe…….
- ✓ **Words** like perhaps, sometimes, probably, often, should …….

It is worth to mention that they are three types of opinions;

- ❖ Positions and controversial issues. Opinions may sometimes look like facts because of professional or technical-sounding words.
- ❖ Evaluations of people, places and things. Value words often represent opinions.

Examples of some opinions statements are as follows;

- My car payment is too expensive.
- I believe that rock music is awful.
- London is the best city 9in the world.
- By the year 2025, all Americans will have socialized medicine.
- Government regulation of our private lives should be halted immediately.

## 3. Types of Opinions

## 3. 1. Verified Opinions

These are conclusions which can be verified (shown to be true) or shown to be false. People who predict the results of horse races draw conclusions from what they know about horses and racing. They may say that Golden Arrow will win the coming race. It is their opinion. Once the race is over, that

opinion is proved to be either correct or incorrect, depending on whether Golden Arrow wins or loses. Although people usually base their opinions on facts, there is always a danger that they can reach the wrong conclusion. They might have based their opinion on facts which are themselves untrue (such as Golden Arrow's fitness); they might have failed to consider a relevant fact (the ground was muddy and Golden Arrow runs best on firm ground) or they might have reached the wrong conclusion because of a gap in the logic they used to think it through (Golden Arrow had a strong name, so was bound to win). You must always treat verifiable opinions as if they could be wrong. You must always attribute them to the person who gave them.

## 3. 2. Informed or Expert Opinions

This type of opinion statement refers to the experts. As experts in their field, they may make observation sand offer comments that are not strictly factual. Instead, they are based on their on year of study, research and experience. So they are treated differently from the other people statement of opinions and are highly appreciated and accepted. The best kind of expert opinion is one in which the expert keeps their own personal feelings out of their conclusions. They look at the facts as they see them, and draw a conclusion based only on those facts. However, even opinion from an impartial expert must be attributed, so that your readers or listeners can judge the likely truth or otherwise of what they say. Generally the following questions are used to identify the informed opinions;

❖ Does the speaker have a current and relevant background to the topic under discussion?
❖ Is the speaker generally respected in his field?
❖ Does the speaker carefully signal, via judgment words, to identify when they are presenting opinions versus facts?

Examples of some opinions statements are as follows;

• Chimps are in massive danger of extinction from dwindling habitats. Jane Goodball, primate expert of ethology

## 3. 3. Personal Opinions

Personal opinions are the conclusions someone reaches based partly on facts and partly on what they already believe. Personal opinions can be given by people just because they are asked. If you conduct a *vox pop* with people on the street, asking what they think about capital punishment, they will give you their personal opinion.

## 3. 4. Value Judgment

These are opinions of what is good or bad and advice on what other people should do about something. For example, a socialist might give the opinion that a new tax on the rich is a good thing; a rich person might give the opinion that it is a bad thing. To understand value judgments, your readers or listeners need to know who is making them and why. Such opinions must be attributed.

As a journalist, you are likely to encounter a lot of people who want to express their personal opinion in order to impress people and to affect other people's attitudes. They will see your newspaper, radio or television station as a useful way of getting their personal opinions across to people. The most obvious examples of this are people such as politicians, who believe they know what is right or wrong for others. They need to get their opinions to the people, to gain their support. The prime minister who says that his government is good for the people is expressing a value judgment. If he says it often enough, people will believe that it is true whether or not it is based on fact. Even experts can make value judgments, although this is quite distinct from an impartial opinion based only on known facts. An expert who gives a personal opinion may be better informed than many other people on that topic, but their opinion is still just a value judgment, based on their own beliefs.

## 4. Distinguishing between Facts and Opinions

Good readers always distinguish between facts and opinions in order to become critical readers. They engage and interact with texts and statements with a questioning approach. This micro skill enables readers and writers to become critical thinkers. So distinguishing between facts and opinions is a vital critical thinking and reasoning skill. The table below presents the main differences that come into play between facts and opinions.

| Statement of Facts | Statement of Opinions |
|---|---|
| • Facts can be verified or checked for accuracy through objective evidence. | • Opinions cannot be checked or verified for accuracy. |
| • Facts refer to tangible objects and compared to other objects to determine the relation between the two. | • Opinions cannot be compared to physical objects or to accepted criteria to determine truth or falsity. |
| • They rely on denotative language. | • They rely on connotative language. |
| • Facts frequently use measurable or verifiable, numbers, statistics, dates and measurements. | • Opinions use value judgment words and comparisons such as best, most, least, good, better … |
| • They must strictly mean only one thing according to one or different people whatever time and circumstances are. | • They can mean different things to different people according to different places and circumstances. |
| • We associate the following concepts with *fact*: <br> ➢ Truth <br> ➢ Reality <br> ➢ eternal and permanent <br> ➢ knowledge <br> ➢ Science <br> ➢ Objectivity <br> ➢ Impartiality <br> ➢ Neutrality <br> ➢ the scientific method <br> ➢ provability <br> ➢ evidence <br> ➢ data | • We associate these concepts and terms with *opinion*: <br> ➢ Interpretation <br> ➢ Narrative <br> ➢ Temporal <br> ➢ Belief <br> ➢ Feeling <br> ➢ Preference <br> ➢ Subjectivity <br> ➢ Bias <br> ➢ Guesswork <br> ➢ Assumption <br> ➢ point of view <br> ➢ speculation |

In addition, the following figure symbolizes more the nature of relationship that does exists between facts and opinions. A deep analysis to the relationship between facts and opinions gave birth to this triangle or pyramid figure in which facts occupy only the tiny top of the pyramid while opinions occupy all the space of the pyramid starting from the background up to the summit. In short, the pyramid indicates that opinion statements are widely spread and used rather than factual statements. Furthermore, the more we move upward the more we catch up facts and the opposite is true. It is worth to mention,

according to the pyramid figure, that the background which corresponds to the opinions is the space of all the statements produced by humans in general whatever their status, knowledge, experience, and rank is while the space of facts is very limited to the top of the pyramid for only mechanical, natural and automatic phenomenon. Through the presentation of facts and opinions in the pyramid below, it can be concluded that the opinions of the bottom and the middle and upward do not have the same value because the more opinions are upward the more that they are based on more knowledge and experience.
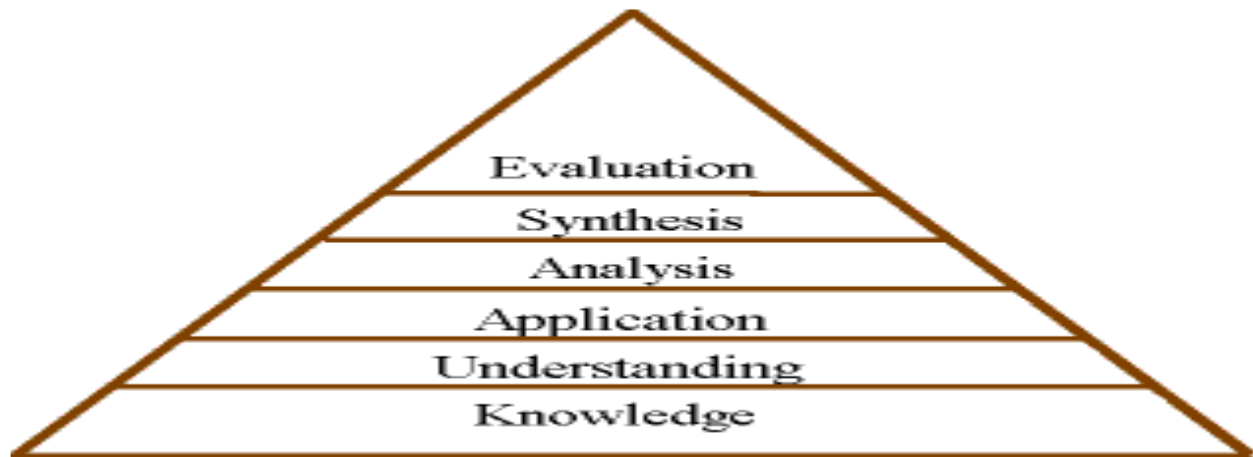


## Summary

The distinction between facts and opinion statements is the prior quality that university students must learn, master and grasp for critical thinking skills. This ability could help students to produce clear and powerful statements as well as help them to present convincing analysis and evaluation. Furthermore, facts and opinion distinction foster students' ability to conduct research tasks successfully.

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## Practice

## Focus Questions

1. What is a "fact"? Give examples.
2. What is an "opinion"? Give examples.
3. What is the difference between them?
4. Can a fact turn into an opinion? Justify you answer.
5. Can an "opinion" turn into a "fact"? Justify you answer.

6. What are the characteristics of a "fact" and "opinion"?
7. How do we decide about the factual statement?
8. What are the characteristics of an "opinion"?

## Exercise 1

**Decide if the following statements are facts, opinion or both and then justify you choice. Write F, O, or the word both in the wright column.**

| Statement | Facts | Opinion | Both | Justification |
|---|---|---|---|---|
| • Smoking is addictive to extent that smokers do not have freedom to break stop taking it. | | | | |
| • Smoking is dangerous so it must be banned by government, companies and individuals at large. | | | | |
| • Smoking should be banned in the world otherwise governments should set up huge budgets for health care. | | | | |
| • Statistics show that criminality is very high in Great Britain and most citizens think that it must be fought by both government and individuals. | | | | |
| • People who live in the warm climate like rice because it is grown in such climates area. | | | | |
| • Thanksgiving celebration is celebrated in autumn in the new world as well as in the old world. | | | | |
| • There are too many science books in the elementary media center if you are interested in them. | | | | |
| • Everyone should make Valentine's Day cards to manifest it in the celebration moment. | | | | |
| • George Washington was the first president of the United States | | | | |
| • Pandas are kind of animals which are mixture of black and white colors. | | | | |
| • In 1924, the Model T Ford could be purchased for $290. | | | | |
| • Couples should be acquainted for at least a year before getting married. | | | | |

## Exercise 2

**Write *F* on the line in front of each factual statement. Justify your choice.**

1. Harry S. Truman was a president of the United States.
2. Truman was one of the best presidents the United States has had.
3. Movies are generally more interesting than books.
4. The unemployment rate in the U.S. today is higher than it was in1935.
5. Non-poisonous snakes make delightful pets.
6. Business sets outrageously high prices on its products.
7. *Time* is a better magazine than *Newsweek*.
8. The junior college is a better place to attend school for the first two years than is a university or a 4-year college.
9. In Arizona, smoking in public places is against the law.
10. Nicotine in cigarette smoke makes the heart beat faster.
11. Gold was discovered in California in 1848.
12. Charles Dickens' fascinating novel *A Tale of Two Cities* was published in 1840.
13. Israel and Egypt will never have a permanent peace settlement.
14. In 1970, over 30,000 children were enrolled in day-care programs in Miami-Dade County.

## Exercise 3

**Write *F* in front of each factual statement; write *O* for each statement of opinion. Justify your choice.**

1. Hawaii is in the Pacific Ocean.
2. The Krakatoa volcanic eruption was heard 1900 miles away.
3. Only law enforcement officers should carry guns.
4. Many private schools today provide a superior education to boys and girls.
5. A family physician can provide most of the medical services which a family requires.
6. Medsker discovered that 4-year colleges draw about ¾ of their freshmen from the upper 40% of the high school graduating classes.
7. On the average, U.S. males can expect to live 7 years less than U.S. females.
8. *Reader's Digest* is America's most popular magazine.
9. Yosemite National Park is the oldest national park in the nation.
10. Most TV commercials today are misleading and silly.
11. The mayor was elected by an overwhelming majority.
12. A majority of all restaurants employ male chefs.
13. The earthquake was the largest ever recorded on the Richter Scale.

## Critical Thinking Process

## Description of the Lecture

This lecture is about the critical thinking process. It provides the conceptual frameworks to identify the nature of the critical thinking process. It cultivates students with the steps of their critical thinking. The current lecture is made up of lecture and exercise.

## Learning Objectives of the Lecture

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

- ❖ Be familiar with the critical thinking process.
- ❖ Understand the importance of the critical thinking process.
- ❖ Be aware of the different types of thinking including critical thinking and how they can be applied to everyday situations.
- ❖ Apply the techniques for the critical thinking process.

## Introduction

Often, a good way to begin the process of thinking critically about a subject or case is to do some conscious thinking about it before you do any reading or hear any presentation in the subject. Thus, if you are going to study biology, psychology, linguistics or writing, a good way to begin is by writing down some of the main ideas you already have about the subject of interest itself before you do any reading or listen to the lectures. This allows you to be an active listener rather than a passive recipient of information. It helps you to become aware of your assumptions about the subject so that you can assess them more accurately in light of what you will later read and hear. So the primary key to success when dealing with any subject is through the use of the mind.

## 1. Definition

For through understanding of the concept as a whole, the present lecture considers the meanings of the terms in which the target concept is made up. So the terminological issues of the term are presented as follows;

## 1. 1. Criteria versus Criticism

The close relationship between the term "critical" thinking and "criteria" is instructive. Scholars suggest that the word 'critical' should be seen as a synonym for 'criteria'—to think critically is to think

in light of or using criteria. To put it another way, grounding in criteria gives our judgments rigor. A useful definition of critical thinking is as follows: *To think critically is essentially to engage in deliberations with the intention of making a judgment based on appropriate criteria*. Our job in helping students think critically involves inviting them to consider a reasonably complete and appropriate set of criteria. Left on their own students may judge what should be done in a particular situation on very narrow and dubious criteria, such as whether it is easy to do and in their immediate self-interest. Other criteria might include long-term benefit, fairness to others, consistency with life goals, and safety.

## 1. 2. Critical Thinking

Critical thinking is the use of those cognitive skills or strategies that increase the probability of a desirable outcome. It is used to describe thinking that is purposeful reasoned, and goal directed-the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions, when the thinker is using skills that are thoughtful and effective for the particular context and type of thinking task. So it seems that critical thinking is more than merely thinking about your own thinking or making judgments- it is effortful and consciously controlled. Critical thinking uses evidence and reasons and strives to overcome individual biases. By contrast, passive, non-critical thinkers take a simplistic view of the world.

➢ They see things in black and white, as either-or, rather than recognizing a variety of possible understandings.
➢ They see questions as yes-or-no with no subtleties.
➢ They fail to see linkages and complexities.
➢ They fail to recognize related elements.

## 2. Feature of Critical Thinking

## 2. 1. Critical Thinking is Reflective

Critical thinking is different form just thinking. It is metacognitive- it involves thinking about your thinking. If I enter a social studies course where one of the topics to be raised is about conformity, it is likely that I already have views about conformity: what it is, how prevalent it is, and what influences people to conform or not to conform.  I have these views even I have not formulated them explicitly for myself. Each view is an example of thinking, but not necessarily an example of critical thinking. Critical thinking starts once I reflect on my thinking: why do I have these views about conformity? Since my views are really conclusions I have drawn, what evidence are they based on? How do other people look at conformity differently? What are their views based on? How can I tell which are more accurate, their

views or mine? So critical thinking is a conscious process of viewing and questioning the topic form many different angles.

## 2. 2. Critical Thinking is standardized

Critical thinking involves my thinking measure up to criteria. I can think about something accurately or inaccurately. I can use evidence that is relevant to an issue of interest or irrelevant, or somewhere in between. When I reason out and try to understand the main ideas in a course I am taking, I can do so a superficial level or I can try to understand them deeply, trying to get at the heart of the matter.

Accuracy, relevance and depth are the examples of standards or criteria. As it was raised before, the word critical and criteria come from the same root, meaning "judgment". For my thinking to be critical thinking, I have to make judgment that meet criteria of reasonableness.

## 2. 3. Critical Thinking is Authentic

Critical thinking, at its heart, is thinking about real problems. Although you can reason out puzzles and brain-teasers, the essence of critical thinking comes into play only when you address real problems and questions rather than artificial ones. Critical thinking is far more about you actually believe or do. It is about good judgment. Puzzles and narrow problems may help occasionally when you want to hone or practice special skills, but even those skills help only if you consciously transfer them to real-life settings. Honing your skills at guessing the endings of murder mysteries is not likely to be good preparation for becoming a criminal investigator. In murder mysteries, all the clues are provided, the murderer is one of the characters, and someone "the author" already knows the murderer identity. None of that is so in a criminal investigation.

Real problems are often messy. They have loose ends. They are usually unclear; clarifying and refining them are part of thinking through them. They often have no single right answer. But they are wrong answers, even disasters answers; there may not be any unique right person to take as your partner in life, but there are certainly people it would be disastrous to choose.

## 2. 4. Critical Thinking Involves Being Reasonable

There are no surefire rules of reasoning. That is, no rules are so fool-proof that they guarantee you are reasoning will be successful. They are guidelines, even "rules" sometimes, but theses always need to be followed thoughtfully, not by rote. You need to apply them with sensitivity to context, goal, and practical limitations-a whole host of realities. For thinking to be critical thinking, it must be reasonable thinking.

Compare critical thinking to driving a car. There are rules for good driving, for example, merge when entering an interstate. But merely following the rules will not make you a good driver.to be a good driver you have to follow the rules *mindfully*. What does that mean? It means, for example, following the rules while being aware that the purpose of merging is to allow traffic to flow more smoothly and reduce collisions between fast and slow moving cars that weather and traffic conditions affect how you should merge, and so on. There are no rules to tell us if our reasoning is correct, precisely because we must use our reasoning to evaluate  rules, rather than vice versa. The only way we can decide whether to follow certain rules is if we use our best reasoning to determine that those rules are reasonable, that they lead to reasonable results when followed. Critical thinking is "***self-correcting***" at least partly because it is the court of last resort.



**Figure 1: Critical Thinking John Hughes 2014**

## 2. 5. Open Mindedness

- ❖ Evaluate all reasonable inferences,
- ❖ Consider a variety of possible viewpoints or perspectives,
- ❖ Remain open to alternative interpretations,
- ❖ Accept a new explanation, model, or paradigm because it explains the evidence better, is Simpler, or has fewer inconsistencies or covers more data,
- ❖ Accept new priorities in response to a reevaluation of the evidence or reassessment of our real interests, and
- ❖ Do not reject unpopular views out of hand.

## 3. Three Parts of the Critical Thinking Process

Full- fledged critical thinking involves three main parts in which each one of them is very imperative to achieve the conditions of being a critical thinker. They are as follows;

## 3. 1. Asking Questions

Critical thinking begins with asking questions that need to be asked, asking good questions, questions that go to the heart of the matter. Critical thinking involves noticing that there are some questions that need to be addressed. If a teacher assigns a homework problem to solve, a good question to ask is "how can I best solve this problem?" often, though, students do not ask this question at all. Instead, they just jump in and try to solve the problem by any method that springs to the mind. Thinking critically about solving a problem, in contrast, begins with asking questions about the problem and about ways to address it;

- ❖ What are some alternative ways of solving the problem assigned?
- ❖ What is a good way to begin?
- ❖ Do I have all the information I need to start solving the problem?
- ❖ What is the purpose behind the problem?
- ❖ Can the problem be solved does it even make sense?

All these questions are relevant when the problem is assigned. This is, in fact, is true not just in school but in daily life as well people often do not ask themselves, "how can I best get along with my parent, my partner, my co-workers, my friend in this situation? Instead, they continue relating them in habitual and unexamined ways. If your goal is to improve some aspects of your daily life, begin by asking yourself some questions. To be effective, you have to ask these questions. These questions must be genuine questions and not empty ones that are based on emotions. So learners and people in general have to ask good questions.

## 3. 2. Reasoning the Questions Out

Although asking questions is necessary to begin critical thinking, merely asking the questions are not enough; the questions need to be answered or at least addressed. Often we raise questions only to worry about them, or to torment ourselves, or even to put off actions, instead of trying to answer them by thinking through. Reasoning out the questions, however, requires approaching the question in a different way and with a different spirit. It is the spirit of genuinely wanting to figure out a clear, accurate answer to a question that is important to you. The reasoning it out procedure might begin with rethinking the questions and then reformulating it in a more neutral and productive way. Some sample questions that reason out problems related to math are as follows;

- ❖ What are the main causes of my problems with math?
- ❖ What are some good ways to begin dealing with them?
- ❖ How I can read about these causes?
- ❖ Are there counselors and experts I can ask?

Reasoning the questions out may not solve the problem, but it does provide a significantly better way of addressing the problem than not reasoning it out at all. In contrast, there are many uncritical ways to try to answer questions, ones that do not involve much reasoning such as;

- ❖ Ask someone
- ❖ Answer according to the way you are raised without any examination whether you were raised in healthy or unhealthy way.
- ❖ Answer without looking for information, even if it is readily available.
- ❖ Answer in accordance with your personality
- ❖ Answer with what first comes into your head.

A reasoned discussion, however, listening is as important as speaking. Participant try to understand the reasons behind other people beliefs, and try to identify both the strong and weak points of views expressed in which the whole spirit id different. Reasoning things out really means reasoning them out well and drawing conclusions on the basis of the reasons.

## 3. 3. Believing the Results

Critical thinking, in its fullest sense, results in belief. It even results in actions. Critical thinking is different from just engaging in a mental exercise. When we think through an issue critically, we internalize. We do not give merely verbal agreement, we actually believe the results because we have done our best to reason the issue out and we know out that reasoning things out is the best way to get reliable answers. Furthermore, when we think critically through a decision about what to do in a situation, then what follows the reasoning is not just belief, but action. However, taking this last step is not always easy. Even after reasoning it out, it may still have some feelings of being unfairly treated, and it may still some suspicion that the issue was treated unfairly.

Believing the results is a rough test or measure of the completeness of your critical thinking. If you have reasoned something out and come to a conclusion but find you still do not really believe it, that indicates the reasoning is probable not complete. Important factors probably are missing. Factors that lead you to resist internalizing the results can be summarized in the following indicators. There are four indicators of when we do not believe the results of our reasoning.

- ❖ I reason something out, but strong emotions arise within me against the results.
- ❖ I find myself believing contradictory things.

- ❖ I believe something very strongly, but I find I am unable to come up with any good reasons for the belief. In fact, I do not think even I need reasons. Thinking the opposite seems ridiculous.
- ❖ I reason something out, but my actions do not follow my reasons.

In conclusion, when you have thought through something critically and come to the conclusions that seems most reasonable to you, it should follow that you believe it and that you start acting in accordance with that belief in the sense that nothing is left out. Furthermore, applying critical thinking procedures will make ideas and information verified and checked in the mind so their passage is not free as the picture below highlights.



**FIGURE 1.3** *The process of critical thinking in a discipline.*
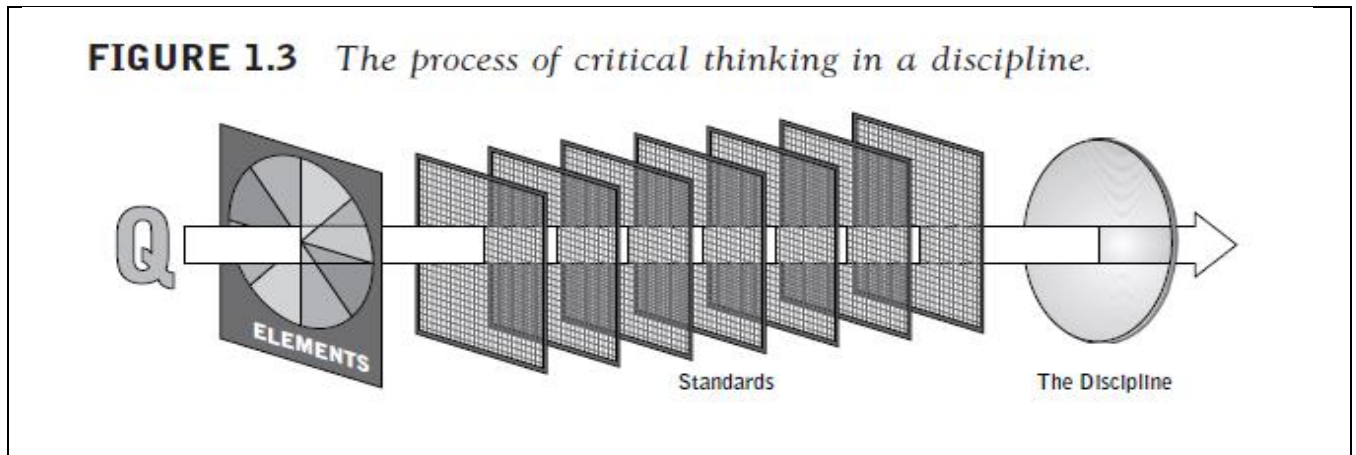
**Figure 3: the Process of Critical Thinking**

## Summary

Critical thinking is an imperative thinking for students. Students are not required just to think but they must step beyond the ability to think to think critically. Students must rely on critical thinking process to analyze and evaluate every statement and situation they encounter. So the critical thinking process is a crucial quality for student to be described as successful students.

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# Practice

## Focus Questions

1. What is "critical thinking process"?
2. What are the characteristics of critical thinking?
3. How is critical thinking different from non-critical thinking?
4. How is critical thinking different from non-thinking"?
5. What are the main parts of critical thinking?
6. Who is a good critical thinker?
7. Are critical thinkers problem producers or solutions makers?

## Exercise 1

**Do the following statements correspond with the main characteristics of critical thinking or not? Analyze and justify your answer.**

1. One kilometer contains either more or less than 1000 meter.
2. When the temperature is below 0 degree, the water may freeze.
3. My own opinion is the best one in the world.
4. Cash payment in Europe is particularly useful for small purchases such as a cup of coffee, a newspaper or a new expensive car. The odd expression is …… because ………………..………….
5. Communication between people through the medium of mobile phones helps them to be able to hide their emotions and feelings at the receiving end of the line. The reason because they can nod and shake their heads to indicate agreement or disagreement. The irrelevant expression is ……………Because …………………………………………………………………………...
6. Economics is one of a number of social sciences-e.g., politics, physics, sociology, education, and light which are concerned with human related activities and decision making. The irrelevant expression is ……………….because it…………………………………………………………………...
7. The message is conveyed through a channel, which could be a note, a memo, a computer, a report, a telephone call, or a face to face meeting. The odd expression …………….. Because it………..……..
8. When you send an e-mail message –e.g., to your correspondent, key-pal, interlocutor, and pen-friend he will communicate you by another e-mail message**.**……………………………………..
9. Paralinguistic gestures are the best way of communicating with people who are too distant from us…
10. With the new inventions of new technologies like mobiles, the world of today is no longer distant and it is described by all as small that small village. …………………………………………..

**Exercise 2: Vague or accurate**

- **Critical thinking aim:** To identify vague or accurate language.
- **Language aim:** Using vague and accurate language.
- **Rationale:** This exercise has some similarities to the previous activity looking at fact and the writer's opinion. It asks the student to assess sentences in terms of whether a statement is too vague or imprecise and to raise awareness that language, especially in academic writing, should be accurate and detailed.
- **Procedure**
1. Write these pairs of sentences from different kinds of text on the board or give students a copy. Ask them to identify which sentence is vague and which sentence presents more accurate information.

| Statement | Vague | Accurate | Justification |
|---|---|---|---|
| • This film is extraordinarily long.<br>• This film is 210 minutes long. | | | |
| • Two out of every three people in the survey said they can't speak a second language.<br>• The vast majority of people in the survey said they can't speak a second language. | | | |
| • All our customers love our latest model.<br>• Customers that we have spoken to say that they love our latest model. | | | |
| • It's well-known that elephants communicate with each other through infrasound which is inaudible to humans.<br>• Scientists have measured elephants' infrasound (under 16 Hz and inaudible to humans) which can signal to other elephants up to 20 km away. | | | |
| • The Harry Potter books by JK Rowling are loved by millions of readers all over the world.<br>• The Harry Potter books by JK Rowling have been translated into over 70 different languages. | | | |
| • The United States of America of the powerful nation in the world forever.<br>• During the cold war era, the United States of America was the dominant omnipresent force everywhere. | | | |

## Exercise Three

**Say whether the following statements are true or false then explain more your choice.**

1. Whether or not students are thinking critically depends more on the qualities that characterize their thinking as they carry out the task, than on the specific nature or type of mental operation…..

2. Thinking critically is a way of engaging in virtually any task that students undertake in school, provided the thinker attempts to judge what would be reasonable or sensible to believe or do……..

## Exercise Four: Fact or Opinion

- **Critical thinking aim:** To contrast fact with the writer's opinion.
- **Language aim:** Expressing opinion with reasons.
- **Rationale:** Sometimes we read texts or listen to people claiming to present some kind of factually true content. However, when this is the case, it's important to approach the text critically for information that pretends to be factual when it is in fact the author or speaker's opinion. By analyzing texts in this way, students can learn to identify opinion through the language used and in turn they will learn the language they need to express opinion in their own writing.
- **Procedure**

1. Take between six and eight sentences from a text which contains fact and author's opinion. Ideally, they will be from a text you have already been reading in class and so the activity can form part of a longer reading lesson. So, for example, the following six sentences come from a longer listening text in which an expert in a radio program is talking about language extinction.

2. About eighty percent of the world's population speaks one percent of its languages.

3. Every two weeks another language disappears from the planet because the last remaining speaker dies.

4. The good news is that some minority communities are trying to save their language by setting up special schools to teach their children.

5. The official language in India is Hindi but speakers of a minority language called Aka are going to preserve the language through the public performance of wonderful songs and storytelling, hopefully.

6. With an estimated 830 different languages, the islands of Papua New Guinea have the largest concentration of linguistic diversity in the world.

7. Local indigenous languages often have words for local plants with medicinal qualities which don't exist in other languages so I don't think we can afford to let them die out.

- Students read the sentences and decide which sentences are factual (F) and which contain elements of the speaker's opinion (O). Ask them to underline the key words which indicate an opinion. These will be useful for students to learn and use in their own writing.

## Exercise 5: Identifying main arguments and supporting evidence

- **Critical thinking aim:** To develop the skill of identifying the main argument in a paragraph and the supporting evidence.
- **Language aim:** To identify discourse markers used to structure a paragraph.
- **Rationale:** When students read a text with an opinion or viewpoint, they need to be able to read for the main argument in the text and decide if the writer has provided supporting evidence. This activity introduces this in the context of a single paragraph before asking students to approach much longer texts containing more than one argument.
- **Procedure**
1. Take a paragraph from a text with a clear main argument and sentences with supporting evidence. Cut up the different parts or rewrite the sentences so they are jumbled. For example, here are sentences taken from a paragraph in a text about immigration in the United Kingdom. However, they are in the wrong order and students need to reorder them:
   - Latest figures for the last twelve months show that 153,000 people migrated to the UK.
   - In fact the reverse is true according to figures from the Office of National Statistics.
   - The commonly-held belief that immigration into the United Kingdom is on the increase is not supported by the facts.
   - The current government aims to continue this downward trend and reduce the number to 100,000 in the next two years.
   - That figure is down by one third compared to this time last year when net migration stood at 242,000 people.
2. Students reorder the sentences and underline any words or phrases which helped them to decide what the main argument was and what was the correct order for the supporting sentences.
3. Give students a longer text and ask them to study the paragraphs. They should underline the main arguments in the text and circle any sentences with supporting evidence.

## Exercise 6: Identifying Fact and Opinion

Having the ability to differentiate between facts and opinions is important for developing critical thinking skills. An opinion is what someone thinks is right and two people may have completely different opinions. Opinions are subjective. Facts are truths that can be proven. Facts don't change from person to person. An example of a fact is: fall begins on September 21. An opinion: fall is the most beautiful season of the year. To demonstrate this skill, remind students that: **a fact is something that**

**can be proven true with some form of evidence.** An **opinion** is not backed by facts. Opinions are often feelings or emotions.

To practice this skill, ask students to write one fact and one opinion about **voting**.

- Write one fact and one opinion about **education**.
-  Write one fact and one opinion about **taxes**.
- Write one fact and one opinion about **themselves**.

# Exercise 7: Compare and Contrast

Comparative analysis is a good exercise for developing critical thinking skills. When we compare something, we note what the same between things is. When we contrast something, we describe what is different. To demonstrate, ask students to compare and contrast spring and fall. Consider writing about or discussing how the following are alike and different.

- watermelon and steak
- country music and rap
- rain and snow
- The United States of America and Mexico
- Democrats and republicans
-  New Hampshire and New York

These types of topics make for great group brainstorming and writing as well as critical thinking development.

# Exercise 9: Making Predictions

Have students pause and make predictions while reading when appropriate. This thinking skill can also be practiced by providing a few sentences and asking students to predict what will happen or write the ending. For example: Sean woke up exhausted this morning after working late. He looked out the window at the rain and thought about how hungry he was. It was time to get ready for school and Sean………. Have students share their predictions and discuss the different opinions and the logic behind them.

# Exercise 10: Inferring & Drawing Conclusions

To infer means to draw a conclusion based on evidence. An example of inference exercise: There's a plate of cookies in the kitchen. The only one to enter the kitchen was your dog. The cookies went missing. What do you think happened and why do you think that. Practicing these skills will help students develop their ability to analyze information.

## Exercise 11: Using Inference

Sometimes someone will try to tell you something without coming right out and saying it. He will imply it. When you understand what is implied, you infer. Sometimes you can infer the truth even when the speaker or writer isn't trying to be helpful. That's called "reading between the lines." See if you can infer an implied or hidden message in each of the following selections.

Turner almost wished that he hadn't listened to the radio. He went to the closet and grabbed his umbrella. He would feel silly carrying it to the bus stop on such a sunny morning. **What probably happened?**

    **a.** Turner realized that he had an unnatural fear of falling radio parts.

    **b.** Turner had promised himself to do something silly that morning.

    **c.** Turner had heard a weather forecast that predicted rain.

    **d.** Turner planned to trade his umbrella for a bus ride.

"Larry, as your boss, I must say it's been very interesting working with you," Miss Valdez said. "However, it seems that our company's needs and your performance style are not well matched. Therefore, it makes me very sad to have to ask you to resign your position effective today." **What was Miss Valdez telling Larry?**

    **a.** She would feel really bad if he decided to quit.

    **b.** He was being fired.

    **c.** He was getting a raise in pay.

    **d.** d. She really enjoyed having him in the office.

No, Honey, I don't want you to spend a lot of money on my birthday present. Just having you for a husband is the only gift I need. In fact, I'll just drive my old rusty bucket of bolts down to the mall and buy myself a little present. And if the poor old car doesn't break down, I'll be back soon. **What is the message?**

    **a.** I don't want a gift.

    **b.** Buy me a new car.

    **c.** The mall is fun.

    **d.** I'll carry a bucket for you.

## Critical Thinking Skills: Bloom's Taxonomy

## Description of the Lecture

This lecture is concerned with the critical thinking skills. It provides the conceptual as well as technical frameworks of Bloom's taxonomy to identify the classification of the different learning objectives assigned to education at large and to foreign language classroom context in particular. Throughout the lecture students will get familiar with the critical thinking skills from very basic skills to the most advanced ones as very essential for their life -long learning process. The lecture counts on pedagogical procedures and exercises.

## 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 term critical thinking skills.
- ❖ Learn about the realm of taxonomies in the field of critical thinking skills.
- ❖ Become more attuned to the two broad paradigms of the critical thinking skills into lower order versus higher order thinking skills.
- ❖ Discover the sub-skills of lower versus higher skills.

## Introduction

Human is not born with thinking skills. Skill is an ability attained as a result of practicing knowledge learned regularly until a skillful person would be able to do certain task effortlessly. Therefore, thinking skill is an acquired mental ability through the process of learning; and can be improved through practice. Critical thinking skill used to process information in the mind in order to understand and make conclusion on truth and falsehood. Throughout the long history of the field of education, one of the main basic questions facing educators has always been where do we begin in seeking to improve human thinking? Fortunately, as humans, we do not have to begin from scratch in searching for answers to this complicated question. Consequently, one place to begin is in defining and measuring the nature of human thinking. So before we make it better, we need to know more of what it is.

## 1. Bloom's Taxonomy of Critical Thinking Skills

Discussions during the 1948 Conventions of the American Psychological Associations led Bloom to spearhead a group of educators who eventually undertook the ambitious task of classifying educational goals and objectives. Their intent was to develop a method of classification for thinking

behaviors that were believed to be important in the processes of learning. Eventually, this framework became a taxonomy or classification of three domains.

- The **Cognitive** domain – knowledge based domain, consisting of six levels
- The **Affective** domain, attitudinal based domain, consisting of five levels, and
- The **Psychomotor** domain – physical skills based domain, consisting of six levels.

The table below outlines the three domains of Bloom's original taxonomy and gives a brief overview of each domain with the abilities associated with each domain.

| Domain | Overview | Abilities |
|---|---|---|
| **Cognitive** | Content and intellectual knowledge: What do I want learners to know? | <ul><li>Conceptualization</li><li>Comprehension</li><li>Application</li><li>Evaluation</li><li>synthesis</li></ul> |
| **Affective** | Emotional knowledge: What do I want learners to think or care about? | <ul><li>Receiving</li><li>Responding</li><li>Valuing</li><li>Organizing</li><li>characterizing</li></ul> |
| **Psychomotor** | Physical/mechanical knowledge: What action(s) do I want learners to be able to perform? | <ul><li>Perception</li><li>Simulation</li><li>Conformation</li><li>Production</li><li>mastery</li></ul> |

## 2. The Cognitive Domain

In 1956, eight year after the group first began, work on the cognitive domain was completed and a handbook commonly referred to as Bloom's Taxonomy was published. In this respect, Benjamin Bloom headed a group of educational psychologists who developed a classification of levels of intellectual behavior important in learning. Bloom found that over 95 % of the test questions students encounter require them to think only at the lowest possible level...the recall of information. On this basis, Bloom identified six levels within the cognitive domain, from the simple recall or recognition of facts, as the lowest level, through increasingly more complex and abstract mental levels, to the highest order which is classified as evaluation. Bloom identified **four principles** that guided the development of the taxonomy. Categories should:

1. Be based on student behaviors,

2. Show logical relationships among the categories,

3. Reflect the best current understanding of psychological processes, and

4. Describe rather than impose value judgments**.**

**Furthermore,** the cognitive domain of Bloom's original taxonomy has six levels organized in a hierarchy (see Figure 1). The base of the pyramid is the foundation of all cognition, knowledge. Each ascending level of the pyramid depends on the one below it: For example, learners must comprehend what a homesteader's exemption is before they can apply the definition to determine whether someone qualifies for a tax break. Knowledge and comprehension are often referred to as lower-order thinking skills. The skills above them are termed higher-order or critical thinking skills. He emphasized the importance of understanding that each cognitive skill builds on previous skills. Following is a short descriptor of each of the six cognitive skills identified by Bloom.

1. **Knowledge:** the recall of information.

2. **Comprehension:** the translation or interpretation of knowledge.

3. **Application:** the application of knowledge to a new situation.

4. **Analysis:** the ability to break down information into parts and show relationships among the parts.

5. **Synthesis:** the ability to bring together elements of knowledge to form a new whole and build relationships for new situations.

6. **Evaluation:** the ability to make judgments about the value and sufficiency of information and methods for a specific purpose.
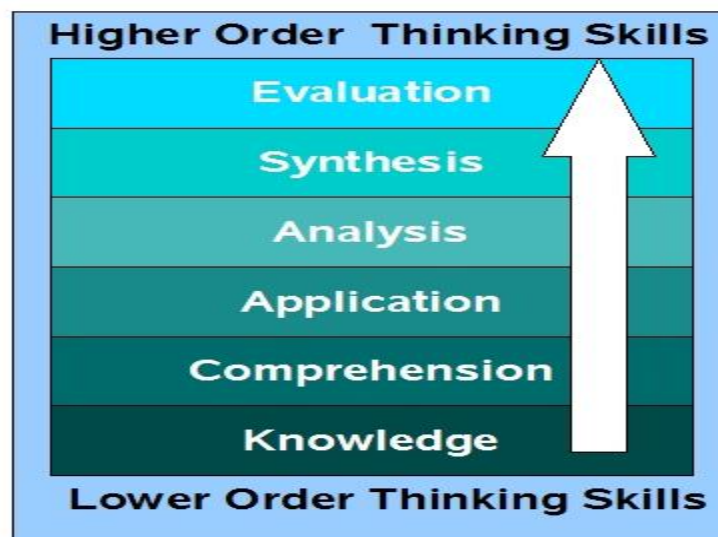


**Figure 2: Bloom's Original Taxonomy**
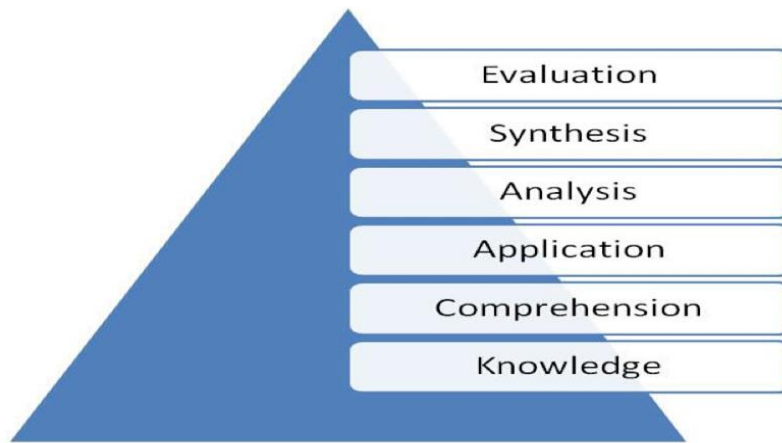
**Figure 3: Bloom's Original Taxonomy as a Triangle**

## 2. 1. Revised Bloom's Taxonomy

Understanding that "taxonomy" and "classification" are synonymous helps dispel uneasiness with the term. Bloom's taxonomy is a multi-tiered model of classifying thinking according to six cognitive levels of complexity. Throughout the years, the levels have often been depicted as a stairway, leading many teachers and educators to encourage their students to climb to a higher level of thought. The taxonomy can be described as follows;

- ➢ The taxonomy is made up of three lower order thinking skills which are knowledge, comprehension and application.
- ➢ The taxonomy is made up of three lower order thinking skills which are analysis, synthesis, and evaluation.
- ➢ The taxonomy is hierarchal in the sense that each level is subsumed by the higher and lower levels.

Clearly, Bloom's Taxonomy has stood the test of time. Due to its long history and popularity, it has been condensed, expanded, and reinterpreted in a variety of ways. During the 1990's, a former student of Bloom's, Loris Anderson, led a new assembly which met for the purpose of updating the taxonomy. The revision includes several seemingly minor yet actually quite significant changes. The changes occur in three broad categories which are **terminology**, **structure** and **emphasis**.

## 2. 1. 1. Changes in Terminology or Categories

Between the two versions changes in terminology are perhaps the most obvious differences and can also cause the most confusion. Basically, Bloom's six major categories were changed from noun to verbs taking the "ing" form. Additionally, the lowest level of the original, knowledge was renamed and becoming remembering. Finally, comprehension and synthesis were retitled to understanding and

creating. In addition, in the revised taxonomy, evaluation is no longer the highest level of the pyramid. A new category, creating, claims the peak. This category was originally known as synthesis. In an effort to minimize the confusion, comparison images appear below "see the figure below". The new terms are defined as:

1. **Remembering**: Retrieving, recognizing, and recalling relevant knowledge from long-term memory.
2. **Understanding**: Constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.
3. **Applying**: Carrying out or using a procedure through executing, or implementing.
4. **Analyzing**: Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organizing, and attributing.
5. **Evaluating**: Making judgments based on criteria and standards through checking and critiquing.
6. **Creating**: Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. (Anderson & Krathwohl, 2001, pp. 67-68)
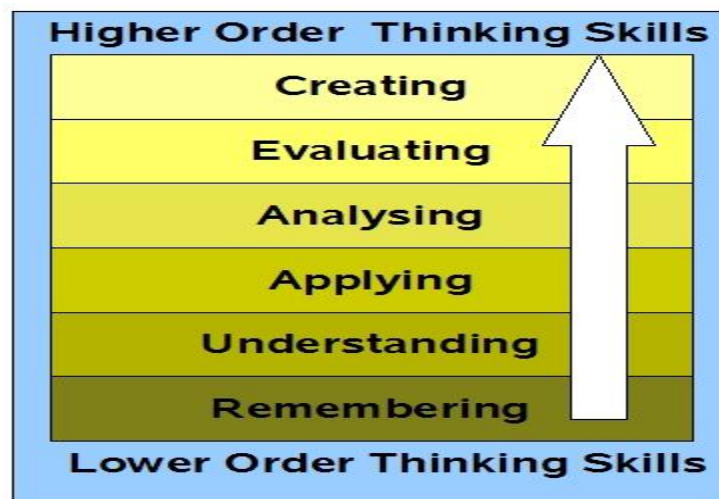


**Figure 4: Bloom's Revised Taxonomy**
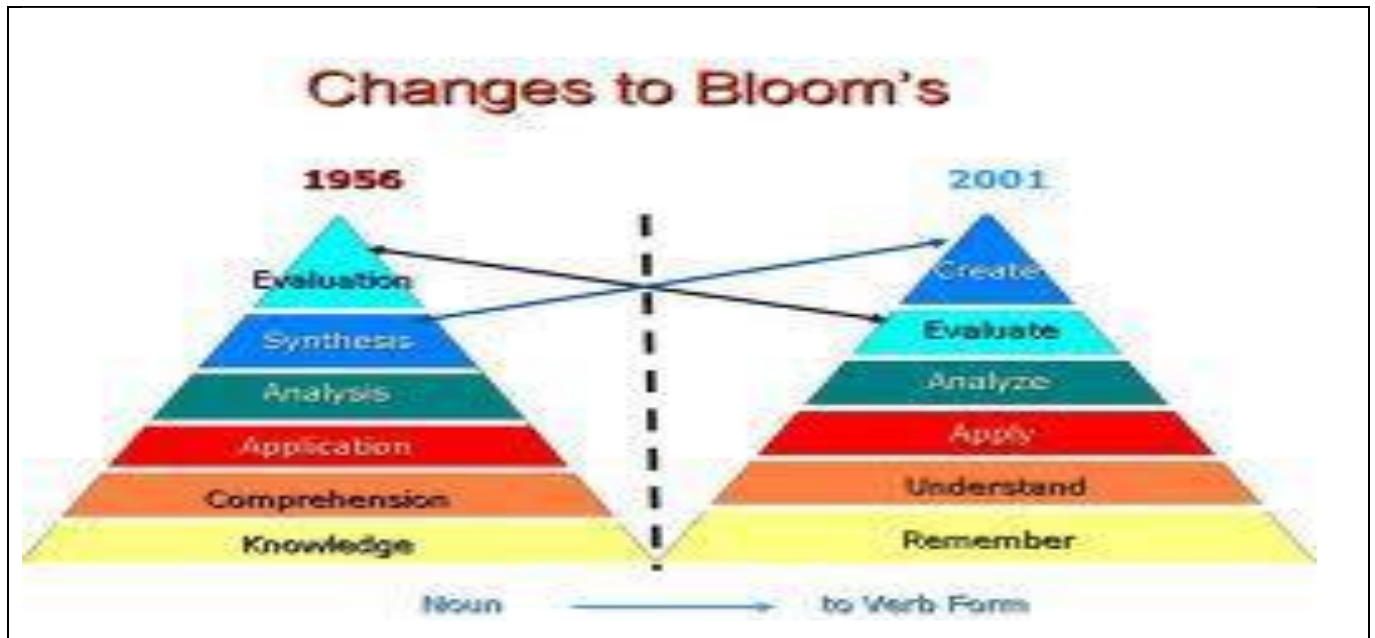
**Figure 5: changes in Bloom's Original and Revised Cognitive Taxonomies**

## 3. Critical Thinking Skills

In 1956, a committee of educators chaired by the educational psychologist Benjamin Bloom worked towards developing a system of thinking that would go beyond traditional rote learning in education and encourage 'higher-order' thinking. Although the taxonomy they devised is named after Bloom, it is a concept that has been refined and adapted over the years. However, at the core of Bloom's Taxonomy (4) is a series of skills that teachers should develop in their learners in order to make their students learn more effectively. Over the years, many other educators have built on Bloom's taxonomy, notably Anderson and Krathwohl (5). The following is a summary of these more recent attempts to provide a set of sub-skills which take the learner from lower level thinking to a higher level thinking.

### 3. 1. Lower Order Thinking Skills

### 3. 1. 1. Knowledge

The knowledge level is operationally defined as information retrieval. Knowledge as defriend here includes those behaviors and test situations which emphasize the **remembering**, either by recognition, or recall of ideas, materials or phenomena. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain. A close examination of this first category shows that Bloom articulates specific types of knowledge which mixes the cognitive process of retrieval with the various types of knowledge that are retrieved (Bloom et al., 1956, p. 62). To conclude, the table below summarizes three main axes of the knowledge level in relationship to the useful and pertinent verbs, sample questions items, and the potentials activities and products that can be applied and achieved to a variety of learning situations.

### 3. 1. 2. Comprehension

Comprehension represents the largest class of intellectual skills and abilities. The central feature of the act of comprehension is taking in new information via some form of communication. For example, when students are confronted with a communication, they are expected to know what is being communicated and to be able to make some use of the materials or ideas contained in it. The taxonomy does not limit communication to the presentation of communication in linguistic (verbal or written) form. Rather, information can be presented symbolically or experientially. Thus a student attempting to understand the ideas underlying a demonstration would be involved in the act of comprehension. So comprehension is the ability to grasp the meaning of the target material. Three forms of comprehension are described in the taxonomy: translation, interpretation, and extrapolation.

➢ Translation involves encoding incoming information into some form other than that in which it was received. For example, students would be engaged in translation if they summarized in their own words in the information contained in a film on the formation of a tornado. Whereas translation involves the identification of the literal structure underlying the incoming information.

➢ Interpretation may require reordering of ideas into a new configuration in the mind.

➢ Extrapolation goes beyond the literal level of comprehension. It involves inferences and predictions based on literal information in the communication and principles and generalizations already possessed by the learner.

### 3. 1. 3. Application

Application refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.

This third category of cognitive skills, application, is probably the least well defined in Blooms taxonomy. It is described in relationship to a specific type of knowledge –abstractions- and is defined primary in terms of how it compares with other levels of taxonomy. To illustrate, Bloom notes that the comprehension of an abstraction requires students to know how the abstraction well enough that they can correctly demonstrate its use when specifically asked to do so. Application skill, however, requires a step beyond this. Given a problem new to the student, he will apply the appropriate abstraction without having to be prompted as to which abstraction is correct or without having to be shown how to use it in that situation. Bloom further explains that an abstraction understood at the level of comprehension can be used only when the conditions for its use are specified. However, the application of an abstraction is demonstrated when one correctly uses the abstraction in a situation in which no mode of solution is specified.

## 3. 2. Higher Order Thinking Skills

### 3. 2. 1. Analysis

Just as application is defined in terms of a subordinate category of Blooms taxonomy, analysis is defined in terms of application and comprehension. Bloom notes that, in comprehension the emphasis is on the grasp of the meaning and intent of the material. In application, it is on remembering and bringing to bear upon given material the appropriate generalizations or principles. Analysis emphasizes the detection of relationships of the parts and of the way they are organized. Analysis is divided into three sub-categories;

- ➤ The identification or classification of elements
- ➤ Relationship among elements
- ➤ And organizational principles that govern elements.

Admittedly, Learning outcomes here represent a higher level than comprehension and application because they require an understanding of both the content and the structural form of the material. This category overlaps with the categories of comprehension and evaluation. No entirely clear lines can be drawn between analysis and comprehension at one end or between analysis and evaluation at the other.

### 3. 2. 2. Synthesis

Synthesis is primary involves the generation of new knowledge structures. Synthesis is defined here as the ability of putting together elements and parts as to form a whole. This is a process of working with elements, parts, etc. and combining them in such a way as to constitute a pattern or structure not clearly there before. Generally, this would involve a recombination of parts of previous experiences with new material, reconstructed into a new and more or less well-integrated whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns or structure.

Bloom explains that this category of cognition most clearly calls for creative behavior on the parts of the students because it involves newly constructed and oftentimes unique products. Three specific categories of products are defriend which are;

- ➤ Unique communications
- ➤ A plan or set of operations,
- ➤ And a set of abstract relationships.

Again, Bloom acknowledges many similarities between this category and the previous categories in the sense that comprehension, application and analysis also involve the putting together of elements and the

construction of meanings, but these tend to be more partial and less compatible than synthesis in the magnitude of the task.

## 3. 2. 3. Evaluation

Evaluation involves making judgment about the value of knowledge. So it is concerned with the ability to judge the value of the material. According to Bloom, it involves the use of criteria as well standards for appraising the extent to which particulars are accurate, effective, economical, or satisfying. The judgment may be either those determined by the student or those which are given to him.

There are two forms of criteria or evidence which are noted within this category which are internal criteria and external criteria. By definition, evaluation is a form of decision making, done at a very conscious and thoughtful level, as opposed to decisions that re made quickly without much conscious thought. Bloom refers to the latter as opinions, as opposed to judgments, which by definition involve evaluation. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all the other categories, plus conscious value judgments based on clearly defined criteria.

## Summary

This lecture began with a brief discussion of the nature and impact of Bloom's Taxonomy. It highlighted the problems inherent in its structure (and other adaptations and revisions) while recognizing the strength and breadth of its contribution to educational practice. A model was presented that forms the basis of the New Taxonomy. That model posits three systems of thought that have a hierarchical relationship in terms of flow of processing: the self-system, the metacognitive system, and the cognitive system.

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# Practice

## Focus Questions

1. What is meant by the term critical thinking skills?
2. How is critical thinking process different from critical thinking skills?
3. What re the origins of the thinking levels classifications?
4. List briefly the chronological developments of the Bloom's original taxonomy.
5. List briefly the chronological developments of the Bloom 'revised taxonomy.
6. Define precisely, concisely and succinctly the six thinking cognitive levels.
7. What is the difference between lower order thinking skills versus higher order thinking skills?

## Exercise One

**Match in the table below terms in the column A with their corresponding statements in column B.**

| Bloom's Taxonomy | |
|---|---|
| **Level** | **Statement** |
| • Comprehension | Ability to put together the separate ideas to form new whole, establish new relationships. |
| • Analysis | Ability to judge the worth of material against stated criteria. |
| • Knowledge | Ability to recall previously learned material. |
| • Synthesis | Ability to use learned material in new situations. |
| • Application | Ability to separate material into component parts and show relationships between parts. |
| • Evaluation | Ability to translate the materials and present it in your own language. |

## Exercise Two

**Say whether the following statements are true or false then explain more your choice.**

1. Critical thinking skills are intrinsic in human beings………..……..……………………………..
2. The highest level of human thought according to Bloom's Taxonomy is creativity. Rather than being a skill that is exclusive to a rare gifted few, it is a way of thinking and behaving that can be achieved by all……………………………………………………………………………………………………...
3. Bloom distinguished between lower- and higher-order thinking. Target lower-order cognitive skills to help learners to apply knowledge to new situations. Target higher-order skills to encourage learners to key facts and skills. …………………………………………..…………………………………….

4. Higher order thinking process begins when the mind recalls the data and information stored in memory to be processed in order to understand……..………....………………………………………….

5. Bloom designed his taxonomy as a heuristic for practitioners, not an all-encompassing educational theory or dogma. …………………………………………………………………………………

6. Critical thinking skills use deductive reasoning and is considered is the quantity of thinking ……..…

7. Lower order thinking skills are about that mental process of combining and arranging data and information in the mind in a correct and meaningful sequence in order to understand or to solve problems such as it understanding new concepts and knowledge, to make decision in believing and acting or to come up with effective, ethical and sustainable solutions for real-world problems…...…..

8. The lower order thinking skills belong more to the problem solving skills …………..………….……

9. Memorizing information is a needed component in critical thinking skills, however, it is considered the quality of thinking ……………………………………………………….………………………

10. The Bloom's original taxonomy which is elaborated in the 1950's counts for verbs more than nouns to highlight the quality of dynamite in the process of thinking skills………..……………………….……

11. The revised Bloom's taxonomy changes the category names from nouns to verbs, and to switch the evaluation and synthesis levels in the hierarchy. ………………..………..………………………………….

12. Critical thinking is designated as 'higher order thinking,' which means that it is further up the chain in complexity, and presumably require mastery of 'lower order thinking' skills. ….…………...….......

13. The lack of critical thinking skills utilized within the classroom may greatly diminish the students' chance for success ……………………………..…………..………………………………………………

14. Bloom envisioned a taxonomy that would organize educational goals into a hierarchy, much as biologists classify living creatures into categories that ascend from species to kingdom. ……..………

15. When writing objectives, use the names of either the thinking skills or the categories in the revised taxonomy as adjectives. …………………………………………………………………………………

16. Educators, instructional designers, researchers, and test developers continue to find new applications for both the original and revised taxonomies. Even those who question the validity of Bloom's Taxonomy recognize his widespread and continuing influence. . ……………..………...…….…………

17. Critical thinking skills should be tied to any particular category of mental operation but be seen to refer to a quality of thinking (more accurately, to a set of qualities). ……..…….………………...

18. Critical thinking process should be tied to any particular category of mental operation but be seen to refer to a quality of thinking (more accurately, to a set of qualities). ……..…….………………...

19. The comprehension thinking level which is concerned with the rote memory and recall of specifics relies on rehearsal strategies through highlighting key vocabulary from text or lecture notes, generate flash cards, and devise mnemonic devices…………………………..……………………………………….

20. The application thinking level which is concerned with the basic understanding and putting ideas in your own words through explaining a concept to classmates, associate materials with prior knowledge, summarize key concepts from lecture notes and compare to a model……..……….…….

21. The analysis thinking level is concerned with the applying of a general principle to a new and concert situation through generate general examples, design    and complete classification system, solve and analyze new problems and predict test questions………….….……………………………..

22. The synthesis thinking level is concerned with creatively or divergently applying prior knowledge and skills to produce a new or original whole through generate comparison and contrast lists and use them to predict test questions, identify themes or trends from text or case studies and organize materials in a more than one way…………………………………..…………..……………………

23. The evaluation thinking is concerned with judging the value of material based on informed personal values and opinions result in an end product without a distinct right or wrong answer through predict test questions and outline the answers, locate evidence to support a thesis, and generate a thesis to support certain evidence……………………………..…………………………..……………………….

24. The knowledge thinking level which is concerned with breaking information  into component parts in order to examine  it and develop divergent  conclusions through list support evidence, listing refuting evidence, generate concept maps, debate, and find weaknesses in other argument…...………

25. Many people refer to the analysis, synthesis/create and evaluation thinking levels as problem solving skills………………………………………………………………………………………………

26. The knowledge, comprehension and application thinking skills altogether belong to what is termed as higher order thinking skills……………………………….….………………………………...

27. The analysis, synthesis/creation, and evaluation levels altogether belong to what is termed as lower order thinking skills…………………….…………...…………………………………………

28. Students at higher educational stages are required to deal successfully with the higher order thinking skills and implement simultaneously lower order thinking skills……..……………...………………...

29. Synthesis and creation thinking levels are the main classification and ranking changes in the Bloom's original and revised taxonomies…………………………...………………………………….

30.  Synthesis, creation and evaluation are the main terminological changes in the Bloom's original and revised taxonomies………………………………..……………………………………………….…

31. The description of the receiving level of the affective domain is about to demonstrate a willingness to participate in the activity……………………………………………….…………………...

32. The description of the responding level of the affective domain is about to show interest in the subject, phenomena, or activity by seeking it out or pursuing it for pleasure……..………………...

33. The description of the valuing level of the affective domain is about to internalize an appreciation for values, the objectives, phenomena, or activity…………………….…………………………………

34. The description of the organization level of the affective domain is about to begin to compare different values and resolve conflicts between them to form an internally consistent system of values.

35. The description of the characterization by value level of the affective domain is about to adopt a long term system that is pervasive, consistent, and predictable…………………………...…………………

36. Bloom designed his taxonomy as a heuristic for practitioners, not an all-encompassing educational theory or dogma………………………….…………………………………………………………

37. When writing objectives, use the names of either the thinking skills or the categories in the revised taxonomy as verbs…………………………….……………………………………………………………..

38. Educators, instructional designers, researchers, and test developers continue to find new applications for both the original and revised taxonomies……..………………………….……………………………

39. Even those who question the validity of Bloom's Taxonomy recognize his widespread and continuing influence………………………………………………………………………………………..

## Exercise Three

**Classify the following list of verbs with heir corresponding critical thinking level. Use the table below to report your answers.**

"Define, choose, apply, analyze, appraise, arrange, identify, describe, employ, calculate, assess, assemble, list, explain, generalize, categorize, estimate, compose, name. express, practice, contrast, measure, design, recall, review, operate, deduce, rate, formulate, relate, deduce, validate, develop, express, illustrate, compare, construct, repeat, determine, use, contrast, validate, reconstruct, undermine, cite examples of, operationalize, debate, value, produce, remember, understand,  analyze, and create"

| Level | Verbs |
|---|---|
| ● Knowledge | ………………………………………………………………………........ |
| ● Comprehension | ………………………………………………………………….………........ |
| ● Application | ………………………………………………………………………........ |
| ● Analysis | ………………………………………………………………………........ |
| ● Synthesis | …………………………………………………………………….….........|
| ● Evaluation | ………………………………………………………………………........ |

## Exercise Four

**Classify the following list of tasks with heir corresponding critical thinking level. Use the table below to report your answers.**

"Analogies, writing, role play, test, simulations, appraisals, illustration, presentations, discussions, constructs, projects, examples, reports, demonstration,, case studies, creative exercises, critiques, audio, review, practice, problems, projects, videos, sketches, critical incidents, visuals, lectures, ……………..."

| Level | Verbs |
|---|---|
| • Knowledge | ………………………………………………………………………………........ |
| • Comprehension | ………………………………………………………………………………........ |
| • Application | ………………………………………………………………………………........ |
| • Analysis | ………………………………………………………………………………........ |
| • Synthesis | ………………………………………………………………………………........ |
| • Evaluation | ………………………………………………………………………………........ |

## Exercise Five

**Write one of the following words "knowledge, comprehension, application, analysis, synthesis, and evaluation" in front of the right statement. Justify your choice.**

1. Translate, interpret, extrapolate, but not see full implications or transfer to other situations, closer to literal translation. …………………………
2. Creative mental construction of ideas and concepts from multiple sources to form complex ideas into new, integrated, and meaningful pattern subjects to given constraints. ………………………..
3. Apply abstractions, general principles, or methods to specific concrete situations………………….
4. The mental process that involve the action of recalling, or recognition of terms, ideas, procedure, theories, etc…………………………………….
5. Separation of a complex idea into its constituent parts and an understanding of organization and relationship between the parts. This includes realizing the distinction between hypothesis and fact as well as between relevant and extraneous variables……………………….
6. To extrapolate, but not see full implications or transfer to other situations, closer to literal translation……………………………….
7. The intellectual actions which involve a recombination of parts of previous experiences with new material, reconstructed into a new and more or less well-integrated whole…………………………

8. To make a judgment of ideas or methods using external evidence or self-selected criteria substantiated by observations or informed rationalizations……………………………………………….

9. Put into practice concepts / principles to new situations, apply laws and theories to practical situations, solve mathematical problems, construct graphs and charts, and demonstrate a method or procedure……………………………

10. Carrying out or using a procedure through executing or implementing. Applying related and refers to situations where learned material is used through products like models, presentations, interviews, and simulations. ………………………………..

11. The actions of understanding facts and principles, interpreting verbal material, interpreting charts and graphs; translating verbal material to mathematical, estimating the future consequences implied in the data, justify methods and procedures……………………………….

12. The actions as to know common terms, know specific facts, know methods and procedures, know basic concepts, know principles………………………………..

13. Making judgments based on criteria and standards through checking and critiquing……………….

14. Constructing meanings from different types of functions as they are written or graphic……………

15. Breaking material or concepts into parts, determining how the parts relate or interrelate to one another or to an overall structure or purpose. Mental actions include differentiating, organizing and attributing as well as being able to distinguish between components…………………………...

16. Justifying a decision, solution, answer or course of action (Judge/evaluate/analyze the value of ideas, concepts, materials and methods by developing/constructing and applying standards and criteria)………………..

17. Putting the elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning or producing…………………………………...

18. Generating new ideas, products, or ways of viewing things (Putting together/combining ideas, concepts or elements to develop/construct/build an original idea or engage/stimulate in creative thinking)………………………….

19. Using information, concepts and ideas in another familiar situation (Using strategies, concepts, principles and theories in new situations)………………………

20. When language users are expected to know what is being communicated and to be able to make some use of the materials or ideas contained in it in the sense to understand to be able to be understood…………………………..

21. The lower order intellectual skills require less effort form students when they integrate them within their classroom practices. ……………………………

22. The higher order thinking skills altogether are the real intellectual levels which demonstrate the extent to which students grasp the subject matter presented. ……………………………………….

# Lecture Five

# Creative Thinking and Creativity

## Description of the Lecture

This lecture is about the creative thinking skills. It provides the conceptual frameworks to identify the general and specific domains for creative thinking in language classroom context. The lecture cultivates proper attitudes for enhancing students' both critical and creative skills and powers. The lecture is made up of lecture and exercises.

## Learning Objectives of the Lecture

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

- ❖ Be familiar with the working definition of the term creative thinking.
- ❖ Understand the importance of creative thinking skills in their everyday life.
- ❖ Apply the techniques of creative thinking for the critical thinking.
- ❖ Develop the students' attitudes towards and techniques for creative problem solving.
- ❖ Apply the basic skills for working in innovative problem solving teams.

## Introduction

Many great breakthroughs and discoveries in art, science and innovation have resulted from combining creative and critical thinking skills. Approaches differ considerably between the skills used in creative thinking and those used in critical thinking. However, it is because of the synergy created by the combination of both sets of skills that they are being discussed in conjunction with one another in this unit. By applying creative and critical thinking approaches to your subject area you will enrich and deepen your learning experiences. Furthermore, creative and critical thinking skills can benefit many other areas of your life from problem solution to decision making.

## 1. Definition

Creative thinking skill is the ability to generate and innovate novel ideas to solve old, recurring or new problems effectively. Torrence (1979) develops a framework of creative thinking which consists of four elements which are fluency, flexibility, elaboration, and originality. Fluency is being prolific in producing ideas or alternative solutions to a problem. Fluency presupposes comprehensive understanding of subjects studied. In order to achieve fluency, one has to be able to compare, convert, define, describe, explain, paraphrase, predict and summarize ideas and subject studied. Flexibility means being able to produce ideas that demonstrate multiplicity of thoughts which can generate a diversity of

possibilities. It involves seeing things from multiple perspectives and using different approaches and strategies. Being flexible is being able to change, adapt, demonstrate, distinguish, apply, extrapolate, interpolate, interpret, and predict. Elaboration is a process of improving ideas by supplying more details. Adding more details and clarity to ideas will enhance the conceivability and understanding of the topics. In the elaboration process, one should be able to appraise critique, determine, evaluate, grade, judge, measure, select, and test. Originality means being able to produce new and novelty ideas. It involves synthesis of ideas by combining them together in a different way. Being original is being able to compose, create, design, generate, modify, rearrange, reconstruct, and revise ideas.

According to Kampylis and Berki (2014, p. 6): 'Creative thinking is defined as the thinking that enables students to apply their imagination to generating ideas, questions and hypotheses, experimenting with alternatives and to evaluating their own and their peers' ideas, final products and processes.' The figure below presents the place of creative thinking with the whole thinking process.
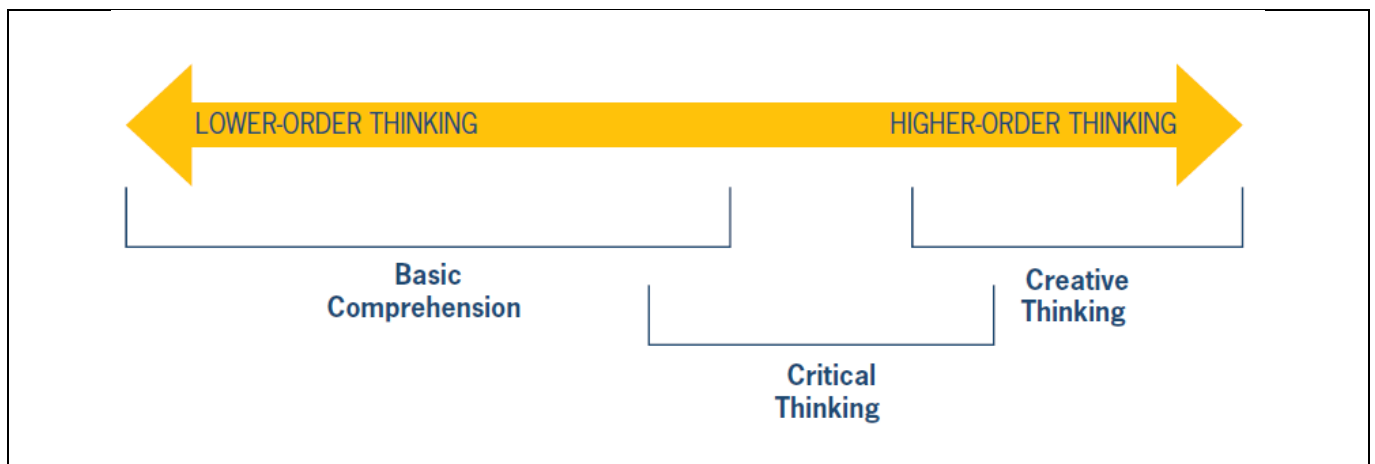


**Figure 1: The Place of Creative Thinking within Thinking Process**

## 2. The Nature of Creative Thinking and Creativity

As skills for life, learning and work, and a higher order thinking skill, creativity skills are a responsibility of all. However without a clear understanding of what creativity skills are it can be difficult to recognize them and develop them.

Sometimes people assume creativity is only about the expressive arts and whilst the permission to be creative has always sat well within these subjects, creativity skills can be developed across all subjects and sectors and at any stage, and all educators are responsible for developing these skills in their learners, whether it be in the sciences or mathematics, outdoor learning or in the classroom.

Research also tells us that different subjects define creativity very differently, and that men and women typically hold different definitions to each other. Here in Scotland we have a working definition of creativity skills that allows us to identify and apply creativity skills within almost any context. This shared language allows all practitioners to identify where they are already developing creativity skills

and where opportunities might exist. Scotland's national *Creative Learning Plan* 2 defines creativity across all learning as: ***"The capacity to generate ideas; things that have value to the individual. Looking at things with a fresh eye: examining problems with an open mind: making connections: learning from mistakes and using the imagination to explore new possibilities."*** The Creativity across Learning: Curriculum Impact Report identified four core creativity skills, which taken together can define the creative process:

- Curiosity
- Open-Mindedness
- Imagination
-  Problem Solving

Educators working in any subject and sector can easily relate the development of creativity skills to their work using this shared language. It also allows you to explore the strengths and weaknesses in a learner's creativity skills, and how your work might engage and develop each skill.



**Figure 2: The Nature of Creative Thinking**

## 3. Categories of Creative Thinking

Kaufman and Beghetto (2009, p. 6) developed four categories of creativity which help to reveal the nuances between different levels and types of creativity.

### 3. 1. Big- C Creative Thinking or Creativity

Big-C creativity is reserved to describe the work of an elite few who have transformed their discipline with their inventions. Their work has been generally accepted as being innovative and ground-breaking, even if it was considered controversial when it was first created. Some examples are scientific works such as Einstein's theory of relativity and Darwin's theory of evolution, and works of art such as

Picasso's Guernica, Jane Austen's novel Emma or Ludwig van Beethoven's Symphony No. 9 in D Minor. Big-C creativity is out of reach of most of us, and big-C creators themselves are often as extraordinary as their creations.

## 3. 2. Pro-c- Creative Thinking or Creativity

This type of creativity has involved time (usually at least 10 years) and effort to develop. A musician, who showed promise as a child, has trained to degree level and now makes a living teaching and playing classical music could be classified as pro-c. A physicist working at a university who teaches and undertakes academic research could also be classified as pro-c.

Little-c creativity or skill is about 'acting with flexibility, intelligence and novelty in the everyday' (Craft, 2005, p. 43). This results in creating something new that has 'originality and meaningfulness' (Richards, 2007, p. 5). This everyday kind of creativity can be found in the kind of person who can resolve a complex problem at work, is a keen gardener with an eye for design, or takes creative photographs and exhibits them on a photo-sharing website. School-age learners may work at little-c level if they engage in purposeful practice in their discipline. Little-c creativity involves practice and may be developed over a long period of time. The internet has provided the infrastructure for little-c creativity to thrive. Websites such as YouTube, Instagram and Etsy enable creative people to share their expertise and work.

## 3. 3. Mini-c creative Thinking or Creativity

Mini-c is defined as the 'novel and personally meaningful interpretation of experiences, actions, and events' (Beghetto & Kaufman, 2007, p. 73). This is the kind of creativity that can be nurtured by teachers and parents. 'Mini-c happens when a person demonstrates "flexibility, intelligence and novelty" in their thinking' (Craft, 2005, p. 19). It is usually applied, but not necessarily limited, to children's creativity.

Mini-c creativity or skill may not be visible to outsiders and may consist purely of ideas and connections that the learner creates. As Vygotsky (1967, p. 7) explains: 'Any human act that gives rise to something new is referred to as a creative act, regardless of whether what is constructed is a physical object or some mental or emotional construct that lives within the person who created it and is known only to him.' Piaget suggested that 'to understand is to invent' (1976) meaning that a learner 'invents' an understanding of new material for themselves. Mini-c creativity could describe a learner's achievement in finding several different ways of approaching a maths problem. It could also involve making a new connection between their existing knowledge and a new piece of information which helps them to understand the subject more fully.

## 4. Critical Thinking versus Creative Thinking

All in all, the table below presents the divergent poles between critical thinking and creative thinking.

| Critical Thinking | Creative Thinking |
|---|---|
| • Analytic | • Generative |
| • Convergent | • Divergent |
| • Vertical | • Lateral |
| • Probability | • Possibility |
| • Judgment | • Suspended Judgment |
| • Hypothesis Testing | • Hypothesis Forming |
| • Objective | • Subjective |
| • Closed | • Open-ended |
| • Linear | • Associative |
| • Reasoning | • Speculative |
| • Logic | • Intuitive |
| • Yes but | • Yes and |
| • Assess worth or validity in something | • Create something new |
| • It pursues applying accepted principles | • It violate accepted principles |

**Table 6: Critical Thinking versus Creative Thinking**

## 5. The Relationship between Creative Thinking and Critical Thinking

**Creative** thinking is the process or practice of generating new ideas or discovering alternative possibilities. It may overlap with critical thinking or be complemented by it in cases where persons or learners have already synthesized different ideas and then are asked to come up with something new. In short, creative thinking is that process or practice of generating new or original ideas or discovering alternative possibly.

There are many good reasons for using creative thinking process in classroom setting and real life situations at large. They aid fluency and the production of the authentic language relevant to the subject or context, they do not restrict earners to what is called right or wrong answers, and they are motivated and fun at the same time. Sometimes, they come at the beginning of the lesson when a teacher wants to get learners to think about a new topic. For example, in a lesson where students are going to read about a child who encounters with a well-known person, the teacher, as a procedure, can ask first this question; imagine you see the president of your country in the public street and want to speak to him. What would you say to get his attention? This would be an example of learners coming with up

with ideas more spontaneously, as there is no preceding critical thinking activity or analysis of language. Alternately, the creative thinking activity might come after a critical thinking activity; a sequence that some people or learners' argue produces better ideas. For example, if learners have to give a short talk about their interest, they might look at someone else presentation first, they could evaluate this presentation in terms of its structure, clarity, use of examples, good and bad points and then use the information to decide how they would like to structure and present their own ideas. In this way they would be combining both critical thinking with creative thinking to produce more thoughtful outputs.

**Both** creative thinking and critical thinking skills are valuable and neither is superior. In fact, it has been shown that when either is omitted during the problem solving process, effectiveness declines. For example you could focus on a subject in a logical, analytical way for some time, sorting out conflicting claims, weighing evidence, thinking through possible solutions. Then, while daydreaming, or distracting the mind, but still holding the same problem lightly 'at the back of the mind', you may have a burst of creative energy and arrive at an 'Aha' moment – even though you were not trying so hard to find the answer. However, the daydream on its own did not achieve anything.

## Summary

In addition to the ability to think critically, students are required to step beyond critical thinking process to think creatively. Even it is hard for every student to think creatively, it is still a quality of thinking that students must look for. Creative thinking is among the highest levels of critical thinking that help students to solve problems and make progress. The latter concepts are the paramount outcomes of the process of teaching and learning English language.

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## Practice

<table>
<tr><td colspan="1"><strong>Creative Thinking Challenges</strong></td></tr>
<tr><td>There are many ways of 'practicing' creative thinking skills through a variety of exercises and activities. These are designed to enable you to think laterally and inventively and ultimately to develop original approaches in defining and solving problems. Try a few of the activities outlined in the boxes below and reflect on how they encourage different ways of thinking and seeing.</td></tr>
</table>

## Focus Questions

1. What is creativity?
2. What is "creative thinking"?
3. What are the characteristics of creative thinking skills?
4. What are the common approaches to creative thinking skills?
5. How is creative thinking different from critical thinking?
6. Who is a creative thinker?
7. Are critical thinking and creative thinking related, complemented to each other or not?
8. Are creative thinking skills learned qualities or inherited ones?

## Exercise One Categories of Creative Thinking

**Match in the table below terms in the column A with their corresponding statements in column B.**

| Category | Statement |
|---|---|
| • Pro –C- Creativity | It is a skill that may not be visible to outsiders and may consist purely of ideas and connections that the learner creates. |
| • Big –C- Creativity | It is an everyday kind of creativity that can be found in the kind of person who can resolve a complex problem at work |
| • Mini –c- Creativity | The work of an elite few who have transformed their discipline with their inventions. |

## Exercise Three: Creative Thinking Toolkit

**Match in the table below terms in the column A with their corresponding statements in column B.**

| Creative Thinking Toolkit | |
|---|---|
| **Term** | **Statement** |
| Creative skills are practical and passionate | We have the surrounding environment— the conditions for creativity. |
| Creative thinkers are adaptors | Creative thinking skills can help anyone, whether making contributions to a larger field or overcoming daily challenges and living in a more creative way |
| From diverge to converge thinking | Creativity is a teachable and learnable skill that can be enhanced through practice and hard work. |
| Creative thinking as a process | Creators minimize egos and to create a solution-oriented discussion among differing perspectives. |
| Creative thinking corresponds to generation of ideas | It's an organization of thinking along a hierarchy from the least complex forms of thinking to more complex forms of thinking |
| Lifting the emotions lid | Creative problem solving requires the use of different mental operations |
| Physical and psychological conditions | appeal to different people, and they generate different kinds of ideas through an organized way |
| Creative thinking for creative life | Looking at the evolution of the brain gives us hints to our emotional intelligence and how it works. |

## Exercise Five

**Directions:** the 36 statements on the following pages describe various activities associated with solving problems or dealing with challenging situations.

- **For each statement indicate the extent to which you feel the statement describes you.**
- Does not worry about how effective you are in regard to that activity; instead, simply consider the extent to which it sounds like you.
- Respond to each statement by indicating how descriptive that statement is of you.
- **Indicate your response by placing an "X" through one of the dots that follow each statement.**
- The response scale ranges from "Not like me at all" to "Very much like me."
- Remember, there are no rights or wrong answers, just opinions about yourself—not the way you wish you were, but the way you honestly are.

| Statement | Not like me at all | Like me | Very much like me |
|---|---|---|---|
| I like testing and revising my ideas before coming up with the final solution or product. | | | |
| I like taking the time to clarify the exact nature of the problem. | | | |
| I enjoy taking the necessary steps to put my ideas into action. | | | |
| I like to break a broad problem apart and examine it from all angles. | | | |
| I find it difficult to come up with unusual ideas for solving a problem. | | | |
| I like identifying the most relevant facts pertaining to a problem. | | | |
| I don't have the temperament to sit back and isolate the specific causes of a problem. | | | |
| I enjoy coming up with unique ways of looking at a problem. | | | |
| I like to generate all the pluses and minuses of a potential solution. | | | |
| Before implementing a solution I like to break it down into steps. | | | |
| Transforming ideas into action is not what I enjoy most. | | | |
| I like to generate criteria that can be used to identify the best option(s). | | | |
| I enjoy spending time looking beyond the initial view of the problem. | | | |
| I don't naturally spend much time focusing on defining the exact problem to be solved. | | | |
| I like to take in a situation by looking at the big picture. | | | |
| I enjoy working on ill-defined, novel problems. | | | |
| When working on a problem I like to come up with the best way of stating it. | | | |
| I enjoy making things happen. | | | |
| I like to focus on creating a precisely stated problem. | | | |
| I enjoy stretching my imagination to produce many ideas. | | | |
| I like to focus on the key information within a challenging situation. | | | |
| I enjoy taking the time to perfect an idea. | | | |

| | | | |
|---|---|---|---|
| I find it difficult to bring my ideas to fruition. | | | |
| I enjoy turning rough ideas into concrete solutions. | | | |
| I like to think about all the things I need to do to implement an idea. | | | |
| I really enjoy implementing an idea. | | | |
| Before moving forward I like to have a clear understanding of the problem. | | | |
| I like to work with unique ideas. | | | |
| I enjoy putting my ideas into action. | | | |
| I like to explore the strengths and weaknesses of a potential solution. | | | |
| I enjoy gathering information to identify the root causes of a particular problem. | | | |
| I enjoy the analysis and effort it takes to transform a rough concept into a workable idea. | | | |
| My natural tendency is not to generate lots and lots of ideas for problems. | | | |
| I enjoy using metaphors and analogies to come up with new ideas for problems. | | | |
| I have little patience for the effort it takes to refine or polish an idea. | | | |
| I tend to look for a quick solution and then fly with it. | | | |

# Lecture Six

## Critical Thinking in the Language Classroom

### Description of the Lecture

This lecture is about the critical thinking skills in the language classroom. It provides the conceptual frameworks to identify the ways of how to integrate critical thinking skills in both language classroom context and beyond classroom setting. The subjects also helps develop creative thinking as an essential for their life -long learning and future work developments and prospects. The lecture is made up of both lecture and exercises.

### Learning Objectives of the Lecture

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

❖ Be familiar with the critical thinking skills in the language classroom.
❖ Understand the importance of critical thinking in the communicative language tasks.
❖ Understand the importance of critical thinking in relationship with the use of authentic texts.
❖ Understand the importance of critical thinking in the critical literacy communicative.
❖ Understand the importance of critical thinking in the whole brain learning.
❖ Understand the importance of critical thinking in the exam preparation.
❖ Understand the importance of critical thinking in the future occupation prospects.

### Introduction

Critical thinking in the classroom makes students reflect better as a well-educated person but requires going through the rigorous process of education. Education improves the lives of students. Synonymous to education is disciplined based teaching and conceptualization of ideas that helps the students to acquire abilities to think into the contents or logic of each subject using analytical reasoning skills. Asking students good questions, deep and analytical thinking question, enables them to implicate good thoughts not only in university classrooms but also at work and life. However, how far the university students make use of these deep, analytical reasoning abilities to acquire a culture of purposive and reflective thinking remains unnoticed by many academicians. Some employ lecture in the entire two hour class session where the students will attentively pay attention and comprehend in the first half of an hour. Along the class sessions, do we train the students to be critically minded? Lecturers are the moderators in cultivating intellectual traits among students in classrooms through teaching approaches; identify students thinking' flaws and make them realize these defects. This lecture aims to

inculcate, investigate the acceptance and performance outcomes of a group of bachelor students over a disciplined-based critical thinking approach in a classroom setting.

## 1. Teaching Critical Thinking in the Language Classroom

Having established the related background to the process of thinking and critical thinking in terms of a working definition of Critical Thinking and outlined its main sub-skills, it's time to address this question: 'What has critical thinking got to do with language learning? Why should I include it in my classroom teaching?' Here are some reasons.

## 1. 1. Communicative Language Tasks Require Critical Thinking

You can teach languages without giving any thought to including elements of critical thinking. For example, rote learning with its 'listen-and-repeat' patterns requires no critical thinking and at beginner levels the focus can only be on acquiring a basic vocabulary on which to build. However, as soon as students enter in any task using the target language which contains elements such as personalization, investigation and problem solving then they must think critically. In modern language methodology these kinds of communicative task are commonplace because they engage the student in authentic communication. Success in such tasks – as in life - requires effective use of language along with some measure of critical thinking.

## 1. 2. Using authentic meaningful texts

The modern language classroom also makes use of either authentic texts or real texts which have been adapted for the language level but which still contain the writer's or speaker's original meaning. As soon as you present students with a text (spoken or written) in which the speaker or writer expresses facts and opinion (such as a news text or a blog post), students need to comprehend the meaning, analyze the fact from the opinion, match the argument to the supporting evidence, and then express their own view in response to the text. In other words, very soon into learning a language, students are also confronted by the need to approach texts critically.

## 1. 3.  Critical literacy

Following the previous point about how we approach a text, we must also consider the source of the texts that students will deal with. In this digital age we are surrounded by texts full of so-called facts but which do not necessarily come from guaranteed sources. Take this conversation I recently had with my son:

- Son: Dad, did you hear about the man who was on his way to an airport in Australia and stopped off at the zoo. Later when he arrived back in England, he opened his bag and found a penguin inside! Me: [laughs] really? I'm not sure that can be true.
- Son: It is! I found it on Google.

Such conversations are widespread. Younger minds happily soak up the waves of information that is making its way through search engines to our screen without any question that it might be – even in part – untrue. The students we teach will need 'the ability to evaluate documents…by asking critical questions, assessing credibility, comparing sources, and tracking the origins of information' (6). A great deal of this critical literacy will be undertaken in English or other languages so the language teacher is therefore in a unique position to develop the skills needed in younger minds alongside their language skills.

## 1. 4. Whole-Brain Learning

The neuroscientist and educationalist James E. Zull describes how the brain learns a new activity by using all four parts of the brain. He then relates this to Kolb's four-stage Learning Cycle. So, for example, when we read a text containing facts, the information arrives in the back of our brain (sensory and post sensory). If we start to reflect on what we have read, the lower part of our brain is used. Based on our observations and perhaps based also on reading other texts, we start to develop our own view or new hypotheses in the frontal cortex until, having come up with a new view, we test it – perhaps by presenting to and testing our view on others – in the premotor and motor cortex. If Zull is correct that the movement of external information into ideas around the brain runs parallel to the four stages of the learning cycle, then the role of Critical Thinking in that learning process is crucial.

Let us consider for a moment how it might work in a language classroom. A student reads a text in English and the information is gathered at the back of the brain. It's likely that the student will memorize some of this new language but for whole-brain learning, we need the student to take that newly gathered language and reflect upon it, be creative with it, and finally to test or try it out; in other words, to make use of all parts of the brain in the language classroom. Activities that promote Critical Thinking will encourage this kind of whole-brain language learning.

## 1. 5. Critical Thinking in Exam Preparation

In the real world of education where students must pass language exams, many teachers will feel that they do not have any time left over to go beyond the basic demands of the syllabus and examination requirements. However, many students with a good language level might perform better in some exams if they have developed their critical thinking. Let us consider the Cambridge English: First examination for example. It's a widely-taken exam that includes a speaking and writing paper. In both papers, students are expected to respond to prompts with opinions and supporting reasons. In the writing paper they are expected to write an essay in which they express their views on a title such as this:

*'Life was easier for our grandparents than it is for us. Do you agree?'*

In other words, students must demonstrate a level of English that receives marks for presenting an opinion based on three reasoned arguments in a clear and coherent structure; all skills that they will develop by learning critical thinking skills.

Similarly in the FCE speaking paper part 3, candidates discuss a problem in pairs and make a joint decision. Then in part 4, the examiner asks candidates questions where 'the focus is on expressing and justifying opinions'. (8) This is an exam then, like others, which will give marks for good English but also rewards students with ideas and reasoned opinions – the kind that come from a critical thinker.

## 1. 6. Critical Thinking for Future Occupations

Many language-learning students will probably aim to continue their studies at university and this could include learning in the English language. Critical Thinking is a key study skill at university level. In a study skills guide called 'Thinking Critically' published by the Open University (2008) for its students, it stresses the need for undergraduates to be able 'to defend an argument against charges such as bias, lack of supporting evidence or incompleteness….Thinking critically will also help you to create strong arguments of you own.' The guide goes on to point out that: 'All universities encourage their students to be 'independent learners' and critical thinking is central to this.' (9). so developing Critical thinking skills early on will give students a head-start at university. In addition to university success, students who enter a profession such as management will probably be using their foreign language skills and their critical thinking skills when it comes to, for example, assessing the ideas in a report or presenting an argument in order to convince an audience. Increasingly, the skills associated with critical thinking can be linked to business and career success.

## Summary

Fostering disciplined-based critical thinking culture in university classroom brings about rewarding academic excellence among students that would be mutually beneficial in the real world perspectives. However, this culture can bring sounder fundamentals when adopted in the early stage of education i.e. elementary and secondary levels.

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# Practice

## Focus Questions

1. Why do we teach critical thinking in the language classroom?
2. What are the contributions of the critical thinking in the communicative language tasks?
3. What is the role of the critical thinking in the authentic text use?
4. What is the relationship between the critical thinking skills and critical literacy?
5. What is the relationship between the critical thinking skills and whole brain learning?
6. What are the contributions of the critical thinking in the exam preparation?
7. What are the contributions of the critical thinking in the future occupation prospects?
8. How does critical thinking skills help students to be successful problem solving?

## Exercise 1: Developing a Critical Mindset

- **Critical thinking aim:** To introduce basic awareness of critical thinking.
- **Language aim:** To introduce the language for expressing opinion, agreeing and disagreeing.
- **Rationale:** This activity is a useful way to introduce students to the idea of becoming critical thinkers. It also introduces some of the language they might use to express their opinions in class discussions later in the course.
- **Procedure**

1. Write a statement on the board which is likely to provoke a reaction and an opinion either for or against the statement. For example, you could use this statement: 'The internet is reducing young people's attention span and making them less intelligent.'
2. Ask students to work on their own and consider their own personal response to this statement. Do they agree or disagree with it? What's their opinion?
3. Now show them this list of possible responses to the statement. They must choose the response in the list which most matches their own:
   a. I'm not interested in this topic.
   b. I agree. It's true.
   c. I disagree. It's false.
   d. I'm not sure.
   e. I agree up to a point but I also disagree.
   f. I agree / disagree because…
   g. I agree / disagree for a number of reasons but I'd also like more evidence.
4. After they have chosen their corresponding response, show them this key to the meaning of their response in terms of their own critical thinking. For example, if their response corresponded to 3 in

this list, then they have a strong opinion but need to support it with reasons and evidence in order to think critically:

a. You don't need to be interested but have an opinion.

b. And 3 you have a strong opinion but can you give reasons for your opinion?

c. And 5 this is a safe response but critical thinkers need to be active in the discussion.

d. Good. You have a reason for your opinion.

e. Great! You have reasons for your opinion and you want more information.

## Exercise 2: Opinion and Reason Generator

- **Language aim:** To practice expressing opinion with opinion expressions and giving reasons with the conjunction 'because'.

- **Rationale:** Activity 1 introduced students to the importance of supporting an opinion with evidence or reasons. This simple activity continues this idea by introducing students to the need for supporting an opinion with reasons and providing the language they need to achieve this.

- **Procedure**

1. Write this table on the board.

| | exercise is good for you | |
|---|---|---|
| I think that | social media sites waste our time | |
| I agree that | politicians are under-paid | Because… |
| I don't agree that | travel broadens the mind | |
| I'm not sure that | our grandparents' lives were easier | |
| | living in the country is better than the city | |
| | the internet has improved communication | |

2. Students work in pairs and have to generate opinions followed by a reason. They can create their sentences by combining any of the opinion expressions in column 1 with the topic in column 2 and then, using 'because', they have to provide a supporting reason. For example:

- I think that politicians are under-paid because people like bankers and rock stars earn more money but they have less responsibility.

- I'm not sure that travel broadens the mind because I've met some people who come back from other countries and they criticize everything about it.

## Exercise 3: Critical Questioning

- **Critical thinking aim:** To develop students' critical questioning skills.

- **Language aim:** To practice the language of asking closed and open questions.

- **Rationale:** Students need to develop the skill of asking searching questions if they are to become effective critical thinkers. This activity shows them how closed questions which only require yes/no answers do not help us to question critically and that open questions are much more effective. At the same time, students review the structures they need to ask questions.

- **Procedure**

1. Write the following question words on the board: What…? Why…? Who…? How…? When….? Where….?

2. Put students in pairs. Give Student A copy of these eight closed questions:

   a. Do you think meat is bad for you?

   b. Do you believe that exercise is good for you?

   c. Would you say that young children watch too much TV?

   d. Are celebrities important in our lives?

   e. Is the world a more dangerous place than fifty years ago?

   f. Should most people recycle more than they do?

   g. Can politicians make a difference to the world?

   h. Is traditional family life disappearing?

3. Explain that Student A asks the first question and Student A answers Yes or No. Then Student A changes the closed question into an open question using a question word on the board. Student B answers with a much longer and more reasoned answer. So their conversation might start like this:

- A Do you think meat is bad for you?

  ➢ B Yes, I do.

- A Why do you think meat is bad for you?

  ➢ B Because I've read about the way meat is produced nowadays and I'm not happy about…

4. The students work through all the questions in the same way until they reach the end. So that everyone has an equal opportunity to ask and answer the questions, Student B can also ask all eight questions in the same way. Or, if time is short, Student A can ask questions 1, 3, 5 and 7 and Student B asks questions 2, 4, 6 and 8.

- **Variation**

For higher level learners you can make the open questions on the board more focused to the types of question that might be asked when thinking critically. These are:

   1. What evidence is there that…?

   2.  Why do you think that…?

   3. Who says that…?

   4. How do you know that…?

   5. When did people start believing that…?

**6.** Where did you read that…?

So a dialogue using these types of question phrases might sound like this:

- **A** Do you think meat is bad for you?
    - ✓ **B** Yes, I do.

- **A** evidence is there that meat is bad for you?
    - ✓ **B** Well, there are lots of cases in the newspapers these days about eating processed meat. There was even the case of horse meat in hamburgers…

## Exercise 4: Recognizing Context

- **Critical thinking aim:** To develop the skill of seeing things from another point of view.
- **Language aim:** To speculate about a photograph in different contexts.
- **Rationale:** As part of developing a critical mindset, students need to develop the skill of seeing an argument from all sides. This simple activity will raise students' awareness of how the setting of an image or text can alter our perception or interpretation of something.
- **Procedure**
1. Choose an interesting image. It can be a photograph, cartoon or any kind of graphic. Show it to the students and ask them:
    a. What does it show?
    b. Where do you think you might see it? For example, in a magazine write with a text about something.
    c. Did the person who made or took the image have a particular message?
2. Students work in group. Ask them to discuss using the image in these different ways:
    a. If it was an image on a film poster, what is the name of the film and what is it about?
    b. If it was the front cover of a book, what is the name of the book and what is it about?
    c. If it was an advertisement for a product or service, what would it be and what advertising slogan would be on the advert? Afterwards, as an extra option, ask each group to think of one more new way to use the image. Where would we see it? How would it be used?
3. At the end, each group presents their ideas for the ways in which the image can be used. End the task by explaining that this exercise shows us how the meaning of an image or text can change according to the context. So when we read or hear an argument or opinion, it's important to understand its context.

## Exercise 5: Making Connections between Topics

- **Critical thinking aim:** To make connections between the topic of a new subject and your prior knowledge.
- **Language aim:** To talk about a topic and use topic vocabulary.

- **Rationale:** Sometimes students are required to talk about a topic with which they feel unfamiliar. For example, in an exam situation they may have to talk about a topic and express an opinion about it. For some students, especially younger teens, this is difficult because the topic they are discussing may seem distant from their own (sometimes limited) life experience. Use this activity to demonstrate how to relate a new topic to their life experience and as a mental warmer for students who may have to take a speaking or writing exam which requires them to comment on a topic.

- **Procedure**

1. Before the lesson, think of a topic which you think students will be unfamiliar with or feel that they have little to say about. You can also use this activity as a lead-in to a reading or listening activity, in which case, use the topic in the text.

2. At the beginning of the lesson, ask students to list five or six topics from your course that they are familiar with and feel they could talk or write about in, for example, an exam. As they make suggestions, write the topic words on the board in a circle. Then write the topic you chose in 1 in the middle, like this:
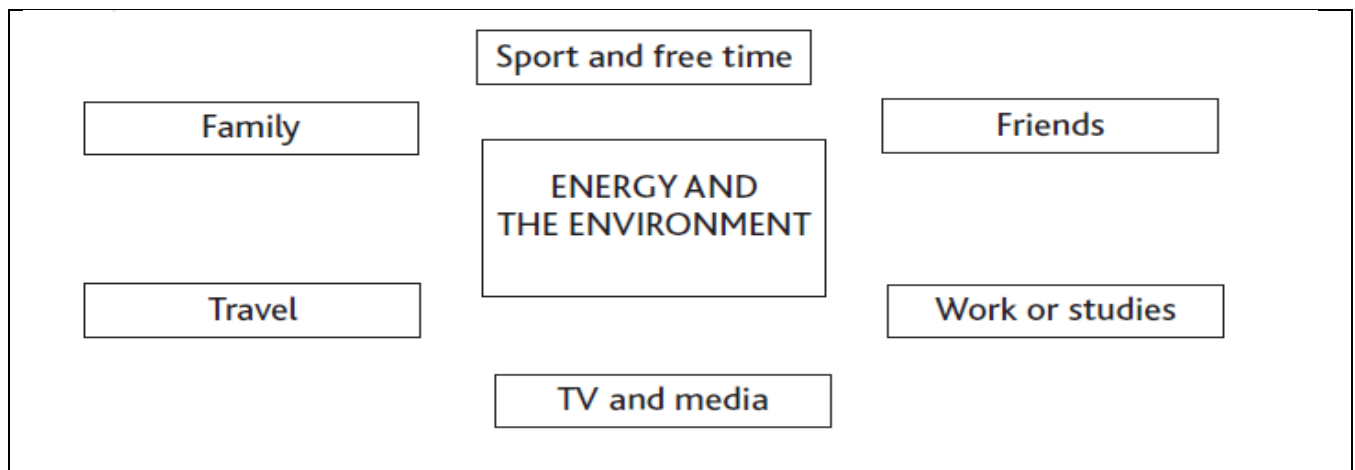


3. Explain to students that you want them to think of one connection between the middle topic and the topics on the outside. They work in pairs or groups and can either say or write down a sentence about the connection. Explain that the sentence can be simple or imaginative. (There should be no limits to their ideas in this exercise.) Do an example as a class to get them started. For example: Sports like tennis and football are ok for the environment but motor sports use lots of fuel and so they are not so good for the environment.

4. Afterwards, ask students to read out or say their ideas for connections between the topics. If you have students who are going to take speaking or writing exams which require their opinions on topics, explain that the approach of making connections is very useful if they need ideas. Similarly, it's a useful way into reading or listening to a text where you want students to make connections between different ideas. (See the next activity.)

**Exercise 6: Evaluating the Reliability of Sources**

- **Critical thinking aim:** To evaluate the reliability of sources of information.

- **Language aim:** To discuss the topic of news and media.

- **Rationale:** Before we accept information that is presented as fact in a reading or listening text, it's important to consider whether we trust the source of the information. The following activity is a short warmer into the topic of how much we can trust certain sources.

- **Procedure**

1. Ask the class to imagine they are gathering information for an essay they want to write. The topic of the essay is about whether families spend more or less time together than they did in the past. In order to research and write the essay, they will need to use and refer to different sources of information.

2. Write the following sources of information on the board or give them a copy of the list. You can also elicit more suggestions from the class of sources which might be useful:

   a. A journalist writing an article in a newspaper

   b. An info graphic on Facebook

   c. A video by someone about the topic on YouTube

   d. A published book by a qualified specialist on the subject

   e. An entry on Wikipedia

   f. A survey about family life in a weekly magazine

   g. A documentary about family life on TV with interviews with real families

3. Put students in pairs and ask them to evaluate each source using the scores between 1 and 3.

   a. Not a reliable source

   b. It might be credible but I'd have to check the information in another source as well

   c. A very credible source of information

4. At the end, the pairs report back their views on the different sources. Opinions may vary and there is not always a right/wrong answer. However, the task draws attention to the fact that students need to check sources and think about where they take information from.

**Follow on**

When you use a reading or listening text that contains information quoting different sources, ask students to list the sources and use the 1-3 scoring system. You could also use a 0 score when facts and figures are given but with no apparent source.

**Exercise 7: Stance**

- **Critical thinking aim:** To raise awareness of the importance of stance.

- **Language aim:** Expressing opinion with reasons.

- **Rationale:** In critical thinking, students need to be aware that a person's stance or position on a topic can greatly change the way they write or speak about it. For example, the way a person from a very hot climate close to the equator talks about the topic of weather will vary greatly from someone in a Scandinavian country. So this activity provides a simple role-play activity to introduce the idea of stance before students are then asked to read or listen to a text on a topic and identify the writer or speaker's stance.

- **Procedure**

1. Show students a photograph of Venice, such as this one: Ask students what they already know about Venice and if they know about the city's problems. Make sure that all students are aware that Venice has problems of over tourism, costs in maintaining all its ancient buildings and because it is slowly sinking.

2. Put students into groups of four and give them each one of these roles. Students should not let each other know their roles. (If you have a group of three, do not use Student D.)

> **Student A:** You work on the Venice council which relies on local taxes and then gives money to projects to save Venice.

> **Student B:** You are a local hotel owner with a five-star hotel in the city Centre. Your family has owned it for three generations. You cannot imagine Venice without tourism!

> **Student C:** You are a local historian who wants to preserve the ancient buildings. You think the city needs to limit the number of tourists entering the city.

> **Student D:** You are a local tour guide who organizes tours to the city. You run tours for over 100 customers every day.

3. Explain to the students that Student A has organized the meeting or local people from Venice to discuss the problems of Venice and how to solve them. Allow five minutes for the role-play discussion.

4. At the end of the meeting, ask the students to guess what was written on each other's role card and summarize each other's stance. How was it is different from their own?

- **Variation**

Instead of Venice as a context for the discussion, you could choose other locations around the world with problems related to over-crowding and tourism, such as Machu Picchu or Mount Everest. Follow up this activity by giving students different texts and asking them to identify the author's stance. (See the next activity.)

**Exercise 8: Where's it from?**

- **Critical thinking aim:** Identifying features of different text types on the same topic, selecting relevant information and synthesizing it.

- **Language aim:** To recognize features of written discourse.

- **Rationale:** Students need to develop the skill of researching a topic. They will draw their information from different sources and have to decide whether certain text types are credible sources. In order to do this, they need to be able to recognize the text type from the writing style.

- **Procedure**

1. Give students three texts on the same subject but written in entirely different ways. Ask them to identify what kind of text each one is. Here are three example texts which you could use for this activity. They are all on the same subject of online shopping. Ask students to identify the text type and say what it was about the language in the text that told them this. For example: Was it formal or informal? Who was it written to (one person or many)?

| **Text A** |
| --- |
| Online shopping is a form of electronic commerce which allows consumers to directly buy goods or services using a web browser. An online shop creates the same experience of buying products or services from a shopping Centre or retailer in the high street but the buyer doesn't have to leave his or her house. The two largest online retailing companies in the world are eBay and Amazon. |
| **Text B** |
| Dear Susie |
| I'm writing to thank you for my birthday present. I have to admit that I was worried about buying things on the internet but after only two days I have already downloaded three books! |
| Buying them online like this is so much easier than having to leave the house! It's so convenient. |
| All my love |
| Grandmother |
| **Text C** |
| Tips for safe shopping online |
| - Make sure you computer's security software is up-to-date. |
| - Reputable websites include information on how your personal information will be used. |
| - Find out what other shoppers say about a company. |
| - When paying by credit card, look for the letter s after http on the web address. |

Answers for Text A-C: Text A comes from Wikipedia so the language is purely informational. Text B is a short correspondence between two people so it's informal and chatty. Text C is from a text giving advice and warnings about shopping online.

**2.** Ask students to imagine they are going to write the following for and against essay: Some people prefer online shopping to face-to-face shopping. Give reasons for and against this view.

❖ Which of the texts do they think provides them with useful information and ideas for their essay?

Possible answer: In fact all three texts provide ideas to help students with their writing. Text A might help them with a basic introduction to the topic. Text B suggests possible advantages of online shopping, especially for older people. Text C draws attention to some of disadvantages of online shopping.

- **Variation**

Students could go in search of other texts and sources on this topic and select relevant information and ideas before they finally write the essay in 2 above.

# Exercise 9: Reading between the Lines

- **Critical thinking aim:** To develop the skill of identifying hidden assumptions or implicit meaning.
- **Language aim:** To identify connotation and denotation.
- **Rationale:** When students start to read higher level or more authentic texts they will need to develop the ability to read between the lines. In other words, to understand the implicit meaning of the writer's words as well as the explicit meaning. In some cases, a writer will choose a word with connotations or certain associations. So instead of choosing the word for its denotation, or literal meaning, the writer uses it to evoke a different kind of meaning. Students need to develop the skill of identifying this language use in order to understand the writer's position or stance. Language with connotation can also be more persuasive to the reader because it appeals to our emotions. This exercise introduces students to the idea of connotation and denotation in texts.

- **Procedure**

These eight sentences all have a negative meaning because the word in bold has negative connotations. Make the sentences positive by replacing the word in bold with a word in the box which has a similar denotation but a positive connotation.

| Thrifty | passion | challenging | slim | classic | confident | unique | responsible |
|---------|---------|-------------|------|---------|-----------|--------|-------------|

**1.** 'My brother's so **cheap** with his money!'

**2.** 'The climb up the mountain is **difficult.**'

**3.** 'My older sister is very **bossy**!'

**4.** 'This type of design is **ancient**.'

**5.** 'His sense of style is **unfashionable**.'

**6.** 'Fashion models in magazines always look so **thin**.'

**7.** Stamp collecting is his **obsession**.'

**8.** 'There's a student in my class who's so **big-headed**.'

# Exercise 10: False Conclusions

- **Critical thinking aim:** To evaluate the supporting evidence for a conclusion.
- **Language aim:** To practice the language of concluding and summarizing.
- **Rationale:** When a text ends with the writer's conclusion or final opinion, it should be as a result of a considered assessment of all the arguments and evidence in the rest of the article. Students will also need to arrive at conclusions in a similar way. The following activity draws attention to conclusions which are not based on correct reasoning and acts as a useful lead-in to looking at conclusions in longer texts.
- **Procedure**

1. Write one or all of the following sets of three sentences on the board. Ask students what is wrong with the conclusion in each case. What mistake is the speaker making?
   a. Dogs have four legs. Cats have four legs. All cats are dogs.
   b. Oranges are the color orange. Your shirt is orange. Your shirt is an orange.
   c. Cars have an engine. Motorbikes have an engine. Motorbikes are cars.
2. Put students in pairs or groups and ask them to write a similar set of three sentences with an incorrect conclusion. This should be a fun activity which allows students to use their imagination. Afterwards, they read out their false conclusions.

**Follow on**

Give students a longer text with a conclusion at the end. Ask students to read the conclusion and say what it is. Then ask students to study the text and underline supporting reasons or evidence for the conclusion. As a class, discuss if the conclusion is logical, based on the arguments given.

# Exercise 11: Writing Headlines

- **Critical thinking aim:** To analyze a text for its essential meaning.
- **Language aim:** To practice summary writing.
- **Rationale:** After students have read or listened to a text, they need to analyze it for its main meaning. One way to do this is to encourage them to summarize the text in a few words. It's also a useful way to develop their note-taking skills. A fun way to do this is to have students read or listen to short texts from a newspaper or radio or TV news and write a headline.
- **Procedure**

1. Show students some headlines from different newspapers or news websites. For each one, ask them to say what they think the news story was about. Afterwards ask them to say what the purpose of a headline is. (Possible answer: To summarize the story and attract the reader's interest)
2. Give out some short news stories or play three or four short recordings of different news items on the radio. For each one, students try to write a news headline which summaries the main meaning of the text. If you are playing recordings, then play them at least twice.

3. Put students in groups and let them compare their headlines to see if they summarized similar information or used similar words from the text.

## Exercise 12: Find the Expression

- **Critical thinking aim:** To analyze the structure of a text.
- **Language aim:** To introduce useful expressions for structuring a text.
- **Rationale:** Understanding how a written text is structured will help students to understand and evaluate a writer's argument and will also help them to write their own essays.
- **Procedure**
  1. Give students copies of the following and ask them to match the functional heading (1-8) to the expression (a-h) in the table below.

| A | B |
|---|---|
| **1** Introducing an argument | **a)** As a result of this… |
| **2** Sequencing information | **b)** Firstly…, Secondly… |
| **3** Giving supporting evidence | **c)** Taking everything in consideration, I think …. |
| **4** Adding information or evidence | **d)** To sum up… |
| **5** Comparing information or evidence | **e)** This is proved by the fact that… |
| 6 Showing cause and effect | **f)** In addition to this… |
| **7** Summing up | **g)** One the one hand…on the other… |
| **8** Concluding | **h)** One argument for this is… |

  2. Now give students a text with arguments and supporting evidence in it. Ask them to find more examples of words and expressions for each of the functional headings in 1-8. They should make a note of any new ones and try to use them in their own writing.

## Exercise 13: Predicting the Content of the Text

- **Critical thinking aim:** To compare your prior knowledge and expectations of the content of a text and to evaluate the relevance of arguments.
- **Language aim:** To prepare students' schema before listening or reading.
- **Rationale:** In order to help understand a reading or listening text, we often ask students to predict what information or arguments the text might include. This is also a useful exercise to help students who are researching ideas for a presentation or essay. They can predict the content and then consider why some information was not included in the text.
- **Procedure**
  1. With a reading text you can show students the title of the text, or ask them to look at a photograph or image that accompanies it. If you are going to play a recording, then write a title for it on the board. Ask students to work in groups and list six or seven items of information they

expect to read or hear. For example, if the text is an opinion piece then they can predict the kinds of argument they expect to read or hear.

2. Students read or listen to the text and tick the items they predicted correctly and put a cross next to those that were not in the text.

3. In their groups, students discuss the ideas which were not included. Was it because they weren't relevant or didn't support the main argument? Or are they still relevant and could be used in another text on this topic? For example, if students are going to give a presentation on the topic they should discuss if they can still include these other ideas.

**Exercise 14: Practicing the Language for Expressing Critical Thinking**

- **Critical thinking aim:** To express your view of a topic based on your reading.
- **Language aim:** To practice functional language for discussions.
- **Rationale:** Sometimes teachers think their students have no opinions because they are unable to express their opinions. In fact, students often do have strong and thoughtful opinions but they are not confident with the language they need to express themselves. This activity provides input and practice with the language they will need.
- **Procedure**

1. Before the lesson, you need to make copies of expressions below and cut them into slips of paper.

| | |
|---|---|
| The main point is…. | On the one hand… |
| One argument for it is that… | I agree because… |
| One argument against it is that… | I disagree because… |
| It's because… | In my opinion… |
| As a result of this… | Evidence shows that… |
| …is similar because… | What do you mean by that? |
| …is different because… | Why do you think that? |
| There are a number of reasons. Firstly… | How did you come to that conclusion? |
| Another reason is… | In conclusion… |
| Also… | What evidence do you have for that? |
| Because… | I know because… |

2. Make groups of three or four students and sit them in a circle around a table. Give each group one set of the cut-up expressions. They deal out the slips of paper so each player has the same amount. Put any extra slips to one side.

3. Write a topic for debate on the board. It could be something you have been discussing recently or a topic which doesn't need too much specialized knowledge. For example: 'It's important to spend 30 minutes a day doing physical exercise'.

4. Explain that the groups must discuss the topic but that they can only speak by using the words on one of their slips of paper and placing it in the middle of the table. One player begins and then the player on the left must continue with a logical comment. Then the next player on the left speaks so that the discussion moves anti-clockwise around the circle. The aim is for a player to use all his/her expressions and to get rid of all the slips of paper. If the group thinks that a player uses an expression incorrectly, they can challenge the player and make him/her miss a turn.

5. When the groups finish, repeat the activity by writing a new discussion topic on the board and dealing the slips of paper again.

**Follow up**

Once the students become more confident with the game, you can change the rules so that any player can speak in order to use up the expressions first. This version is more chaotic but it's a lot of fun.

**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.) | - assistance |
| - Buy | - purchase |
| - Need | - require |
| - Get | - obtain |

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| 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]

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## 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:** *International Journal of Information Management*
- **The First Letter (only) of Book Titles:** *Navigating 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 | • Brief |
| • Sufficient in number | • Sufficient |
| • The wound was of a serious nature. | • The wound was serious. |
| • The solution was red in color. | • The solution was red. |
| • It was precooled before used. | • It was precooled. |
| • We repeated the experiment again | • 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 as much as possible.** | |

## 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).<br>- **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, <br> • official reports, <br> • academic articles, <br> • essays, <br> • business letters, <br> • contracts, <br> • official speeches | • Day-to-day interaction with colleagues and teachers, <br> • popular magazines/books, <br> • interviews, <br> • when talking with someone in authority or who you respect | • Interacting with friends, <br> • 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. | ▪ The shipment **has not** arrived. |
| ▪ **They're** manufactured in China. | ▪ **They are** manufactured in China. |
| ▪ **He's** the director of marketing. | ▪ **He is** the director of marketing. |
| ▪ **We'd** like to inform you... | ▪ **We would** like to inform you... |

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

| Idioms |
|---|
| <ul><li>The software is **a piece of cake.**</li><li>The software is **quite user-friendly.**</li><li>The software is **extremely easy to use.**</li></ul> |

| Slang |
|---|
| <ul><li>A million **bucks** in profit.</li><li>A million **dollars** in profit.</li></ul> |

| Text speak |
|---|
| <ul><li>Tks & we look 4ward 2 meeting u.</li><li>Thanks, and we look forward to meeting you.</li></ul> |

| Shortened Words | |
|---|---|
| <ul><li>The **info** was incomplete.</li><li>The results have arrived from the **lab.**</li><li>fruits and **veggies**</li></ul> | <ul><li>The **information** was incomplete.</li><li>The results have arrived from the **laboratory.**</li><li>fruits and **vegetables**</li></ul> |

| 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 Sources 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. The facts, feeling and experiences known by a person or a group of people,
2. The state of knowing,
3. Awareness, consciousness or familiarity gained by experience or learning,
4. Evaluation or informed learning,
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* | - all phenomena are not easily observable, and some phenomena may not be observable at all |
| - claims of knowledge may be tested and | - our senses have limits (e.g., human hearing differs |

| | |
|---|---|
| criticized by others relatively easily | from that of other animals) and can at times mislead us (e.g., optical illusions) |
| • 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 | • observable data takes on meaning by the way it is organized and interpreted, and such organization and interpretation may introduce bias |
| • it is a way of knowing that often can be tested *repeatedly* | • 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<br>• it is checked by rules of logic and internal consistency<br>• in its least formal practice, this is often a "common sense" way of knowing | • it works with abstractions which may be unrelated to the "real world we live in"<br>• logical arguments may hide logical fallacies and rhetorical conceits<br>• 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 deals with personal and private experience that is relatively inaccessible to others or to outside critical evaluation |
| • it may allow us a direct and unmediated form of knowledge | • it may be quite vulnerable to personal misconceptions/delusions |
| • it seems to produce knowledge that is personally powerful and deeply affecting | • 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 allow us to tap into a certain "emotional wisdom" (as opposed to what is purely intellectual) or a transcendent or divine knowing | • 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 |
|---|---|
| <ul><li>it utilizes the wisdom of "great" people and traditions</li><li>many "authorities" are recognized as such because they have been time-tested through some social process of validation</li><li>utilizing authorities can conserve our own effort</li></ul> | <ul><li>authorities can be wrong</li><li>authority is sometimes largely just a function of the popularity or political power of a person or tradition</li><li>deference to authorities can hinder our own critical judgment or cause us to discount our own wisdom</li></ul> |

**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 | • The sun came up September 1 |
| • Socrates is a man | • The sun came up September 2 |
| • Therefore, Socrates is mortal | • The sun came up September 3 |
| • X ………………………………. | • The sun will come up next September |
| • X ……………………………… | • X ……………………………….. |
| • = True | • = Understood |
| • = Certain | • = Not certain but probable |
| • = Complete 100 % | • = Incomplete beyond 50 % |
| • =  Rational and reason | • = Empirical and experience |
| • = Form general to specific | • = From specific to general |
| • = From known to unknown | • = From known to unknown |
| • = Reasoning and mental | • = Observation and sensory |
| • = It systematize the existing knowledge to generate new knowledge | • = 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. 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.

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**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.

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## 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.

# Introduction into the 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.

# 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.
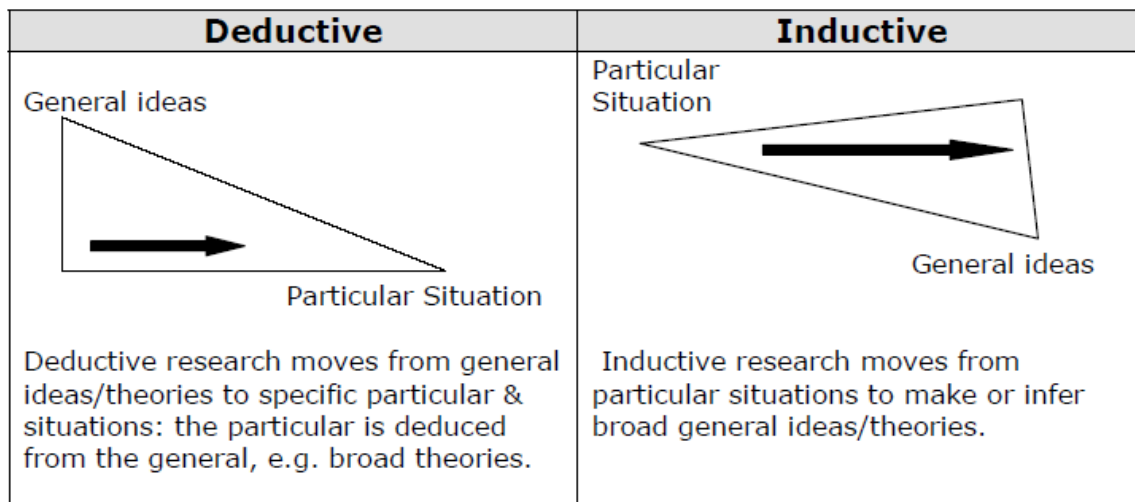
**Figure 2: Deductive and Inductive Research Strategies**

**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.
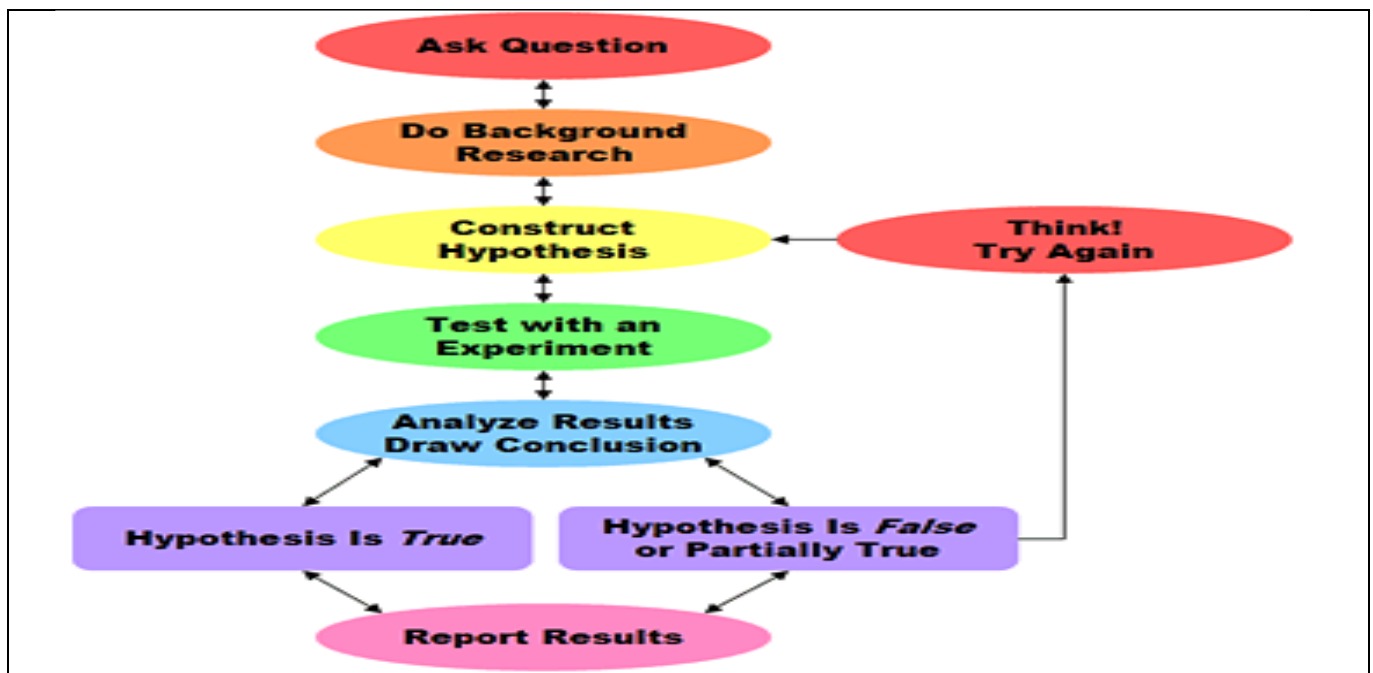


**Figure 5:   The Skeleton of the Scientific Method**

## 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:

- By Observation
- Through personal interview
- Through Telephone Interviews
- By mailing of Questionnaires
- Through Schedules

**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.

## References

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✓ Duhem, P., The Aim and Structure of Physical Theory, Atheneum, 1962 (original French edition, 1914). Here is the classic source for the ideas of the interwoven nature of scientific knowledge, the necessity of auxiliary theories, and the indecisiveness of empirical testing.

✓ Kitcher, P., Science, Truth, and Democracy, Oxford University Press, 2002.

- ✓ Philip Kitcher is a highly respected philosopher of science. His account of science and objectivity, and the role of science in society, is clear and thought provoking.
- ✓ Kuhn, T., The Structure of Scientific Revolutions, third edition, University of Chicago Press, 1996. This is arguably one of the most influential books of our time. It introduces the ideas of a paradigm and paradigm shift, and raises the idea of non-rational influences in science.
- ✓ 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.
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## 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<br>Fact<br>Hypothesis<br>science<br>Scientific method<br>Observation<br>Literature review<br>Experiment<br>Research problem<br>Scientific theory | 1. Familiarizing oneself with the existing theory and research on a topic related to your area of interest<br><br>2. A close agreement by competent observers who make a series of observations of the same phenomenon.<br><br>3. Selecting a topic for research and defining key concepts<br><br>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.<br><br>5. It can be information directly perceived through the senses or information detected with instruments which extends our senses.<br><br>6. It is designed to prove or disprove the hypothesis. If your prediction is correct, you will not be able to reject the hypothesis.<br><br>7. An organized way to answer a question<br><br>8. A hypothesis that has been tested over and over again and not contradicted<br><br>9. A statement that is not fully accepted until demonstrated by experiment<br><br>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 Questions**

**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

**Question 1: 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...
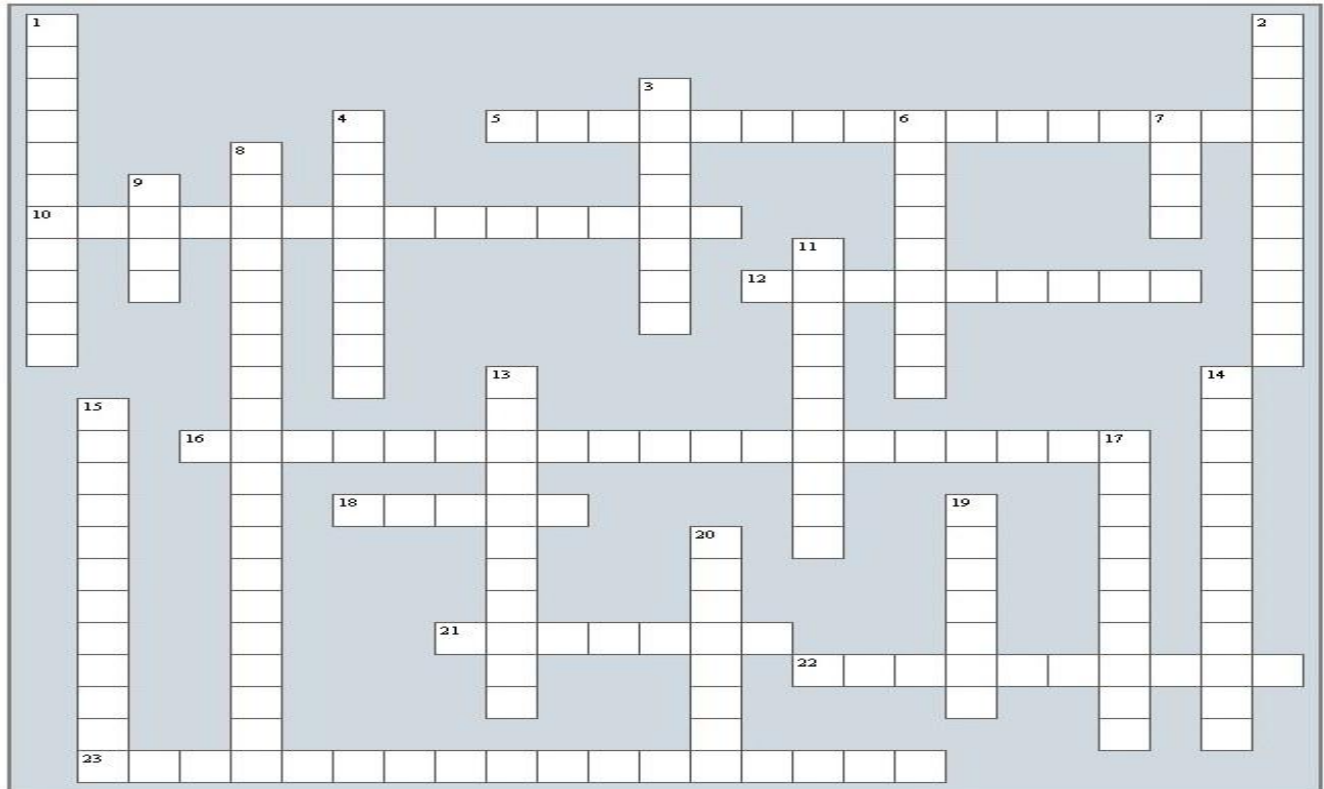
**Exercise 8: Scientific Method Crosszord Puzzle**

**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.
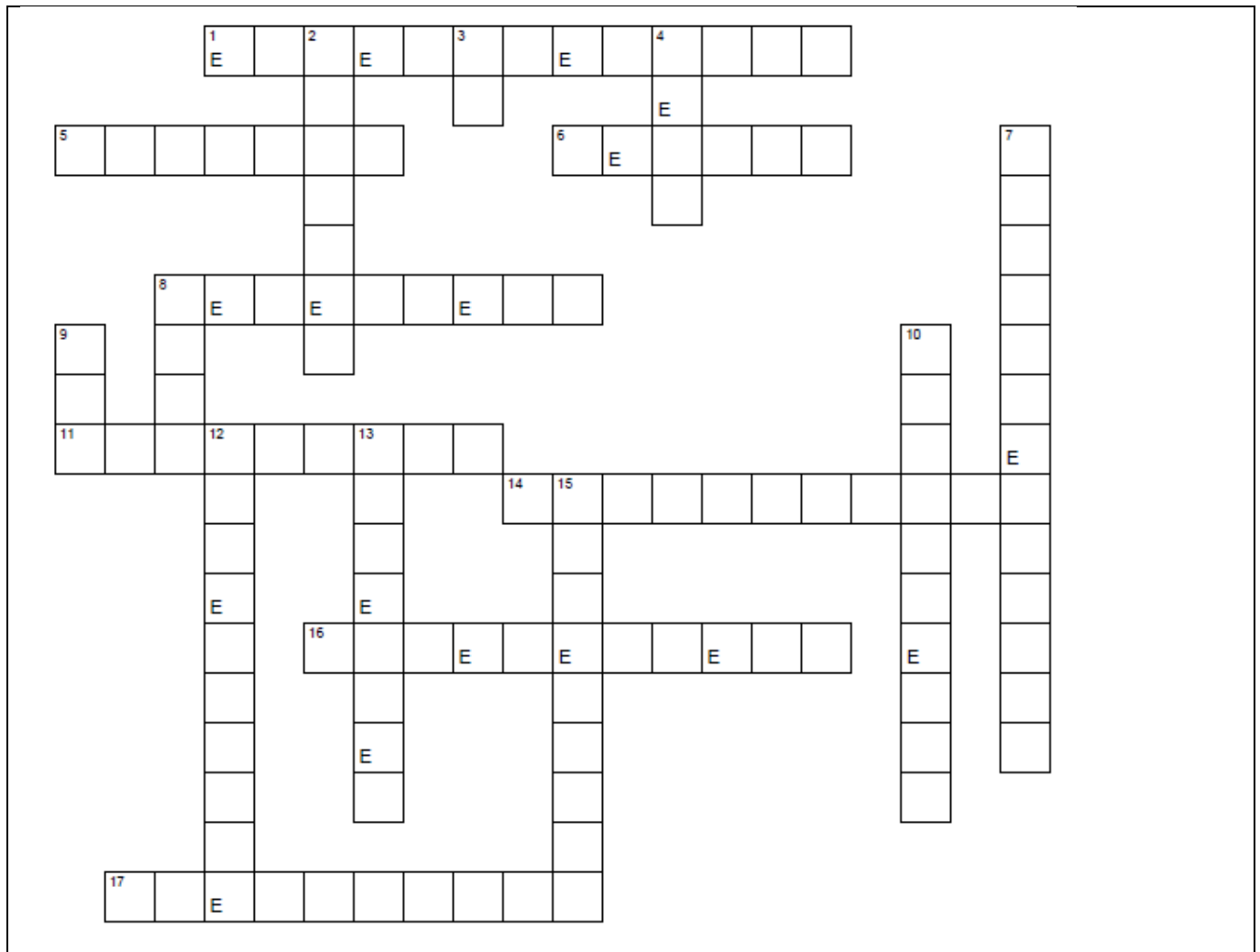


## Keys and Solutions to Some Exercises

| 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 | |

CONTROL
QUESTION
RESEARCH
DATA
EXPERIMENT
INDEPENDENT
QUESTION
DATA
DATA
INDEPENDENT
VARIABLES
DEPENDENT
DEPENDENT
DATA-ANALYSIS
HYPOTHESIS
HYPOTHESIS
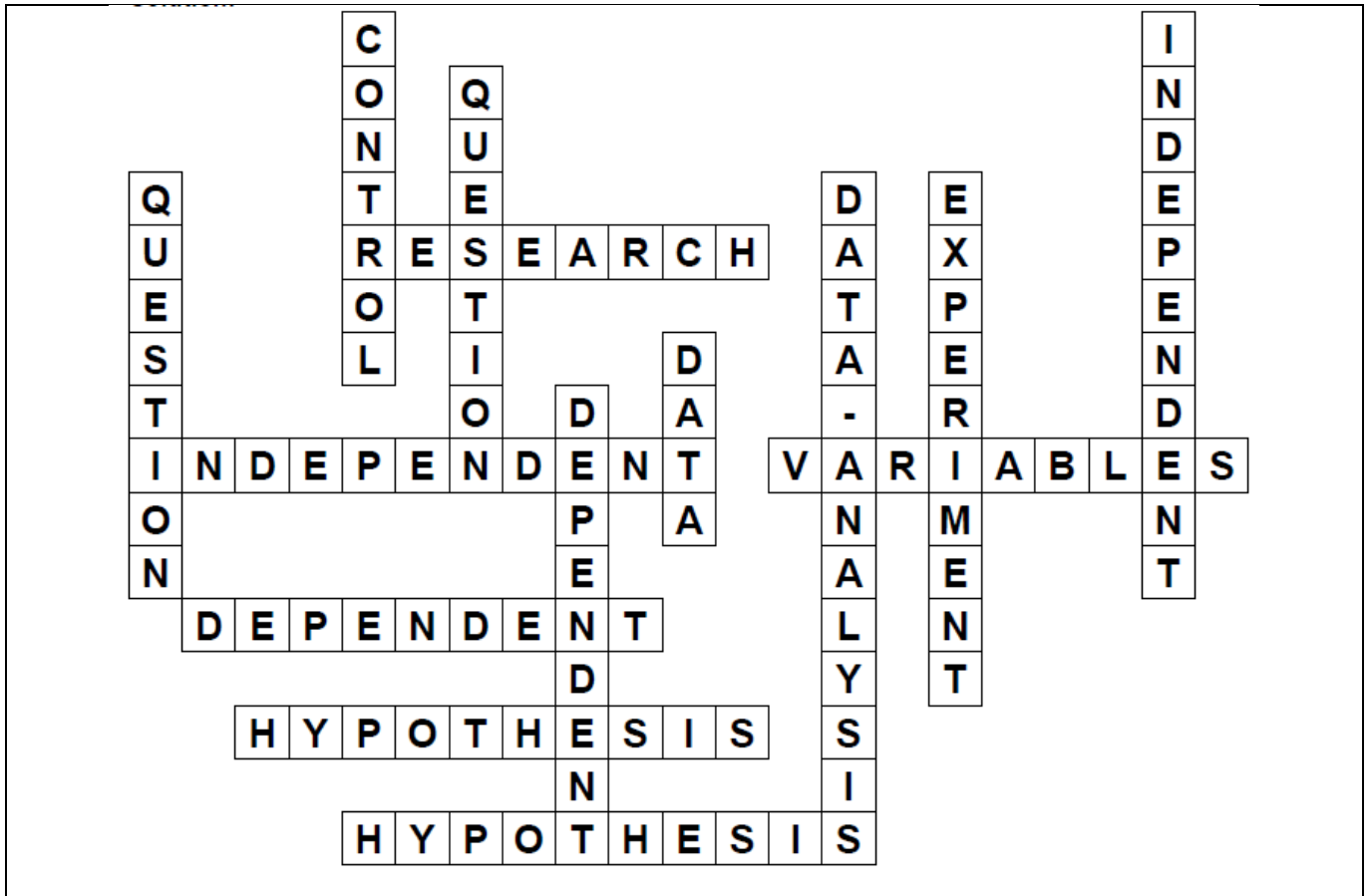
# Lecture Eleven

## 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

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**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

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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 Stud**y**

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

# Dissertation's 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. Definition of the Title

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 | • Towards implementing videos for better |

| the classroom to improve learners' outcomes | 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"*

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### 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?
4. Compare and contrast between the different types of titles?

## 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.**

| What | Why | Where | Who | How |
|------|-----|-------|-----|-----|
|      |     |       |     |     |

# Lecture 13

# Dissertation's Abstract Writing

## 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. Definition of Abstract

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?

## 2.2.   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. | • Informs the audience of all essential points of the paper. |
| • Includes the background, purpose and focus of the paper or article, but never the methods, results and conclusions, if it is a research paper. | • Briefly summarizes the background, purpose, focus, methods, results, findings and conclusions of the full-length paper. |
| • Is most likely used for humanities and social science papers or psychology essays. | • 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:<br>• Background<br>• Purpose and focus<br>• Methods<br>• Results also called findings<br>• Conclusions<br>• Recommendations or implications | It covers the following academic elements:<br>• Background<br>• Purpose<br>• Preposition also called point of view or thesis statement<br>• Outline of key issues<br>• 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.

## 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

# Dissertation's 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. Definition of Introduction

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.

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**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?"

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## 2. Main Sections of an Introduction

The major subsections of dissertation introduction:

### 2. 1. 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.

### 2. 2. Background of the Problem

This section is critically important as it must contain all the subject matter of the Review of the Literature and the methodology. Key words should abound that will subsequently be used again in the Chapter 2 of the literature review. The section is a brief 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.

## 2. 3. Statement of the Problem

Arising from the background statement is this statement of the existing <u>gap in the knowledge</u> 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. It is made up of three main elements: ideal situation, current situation and suggested solutions.

## 2. 4. 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.

## 2. 5. 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.

## 2. 6. 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.

## 2. 7. 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.

## 2. 8. Research Design

It refers to three things: (a) the *participants* in a qualitative study or the subjects of a quantitative study (human participants are referred to 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 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.

## 2. 9. 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.

## 2. 10. 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.

## 2. 11. 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.

## 2. 12. Organization of the research

It summarizes the content of Chapter 1 and preview of content of Chapter 2.

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### 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

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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.

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## 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.