**Unit – 2**

**Scientific and Technical writing**

**Research Paper**

A research paper is a piece of academic writing based on its author’s original research on a particular topic and analysis together with interpretation of research findings. A research paper is a common assignment. It comes to a situation when students, scholars, and scientists need to answer specific questions by using sources.

**Format of a Research Paper**

**Introduction**

**Introduction** provides the main information on problem statements, the indication of methodology, important findings, and principal conclusion. Basically, this section of a research paper covers rationales behind the work or background research, explanation of the importance, defending its relevance, a brief description of experimental designs, defined research questions, hypotheses, or key aspects.

The **Introduction** is one of the most important elements of any great research paper, and interestingly enough, often written LAST. This is because the purpose of the introduction is to grab the attention of the reader, this is done by presenting the reader with the topic, and using the thesis statement as an opportunity to ‘hook’ the attention of the reader.

**Abstract**

An abstract, or brief summary of your findings. An abstract does not need to be provided in every paper, but an abstract should be used in papers that include a hypothesis. A good abstract is concise—about one hundred fifty to two hundred fifty words—and is written in an objective, impersonal style. Your writing voice will not be as apparent here as in the body of your paper. When writing the abstract, take a just-the-facts approach, and summarize your research question and your findings in a few sentences. **Abstract** means the first section of a research paper that provides the study’s purpose, research questions or suggestions, main findings with conclusions. Moreover, this paragraph of about 150 words should be written when the whole work is finished already. Hence, abstract sections should describe key aspects of studies, including discussions about the relevance of findings

### Literature Review

**Literature Review** is needed for the analysis of past studies or scholarly articles to be familiar with research questions or topics. Hence, this section summarizes and synthesizes arguments and ideas from scholarly sources without adding new contributions. In turn, this part is organized around arguments or ideas, not sources.

**Methodology** or **Materials and Methods**

**Methodology** or **Materials and Methods** covers explanations of research designs. Basically, techniques for gathering information and other aspects related to experiments must be described in a research paper. For instance, students and scholars document all specialized materials and general procedures. In this case, individuals may use some or all of the methods in further studies or judge the scientific merit of the work. Moreover, scientists should explain how they are going to conduct their experiments.

**Results**

**Results** mean the gained information or data after the research or experiment. Basically, scholars should present and illustrate their findings. Moreover, this section may include tables or figures.

**Discussion**

**Discussion** is a section of a research paper where scientists review the information in the introduction part, evaluate gained results, or compare it with past studies. In particular, students and scholars interpret gained data or findings in appropriate depth. For example, if results differ from expectations at the beginning, scientists should explain why that may have happened. However, if results agree with rationales, scientists should describe theories that the evidence is supported.

**Recommendations**

**Recommendations** take its roots from a discussion section where scholars propose potential solutions or new ideas based on obtained results in a research paper. In this case, if scientists have any recommendations on how to improve this research so that other scholars can use evidence in further studies, they must write what they think in this section.

**Limitations**

**Limitations** mean a consideration of research weaknesses and results to get new directions. For instance, if researchers found any limitations of studies that could affect experiments, scholars must not use such knowledge because of the same mistakes. Moreover, scientists should avoid contradicting results, and, even more, they must write it in this section.

**Conclusion**

**Conclusion** includes final claims of a research paper based on findings. Basically, this section covers final thoughts and the summary of the whole work. Moreover, this section may be used instead of limitations and recommendations that would be too small by themselves. In this case, scientists do not need to use headings for recommendations and limitations.

**Acknowledgments** or **Appendix**

**Acknowledgments** or **Appendix** may take different forms from paragraphs to charts. In this section, scholars include additional information on a research paper.

**References**

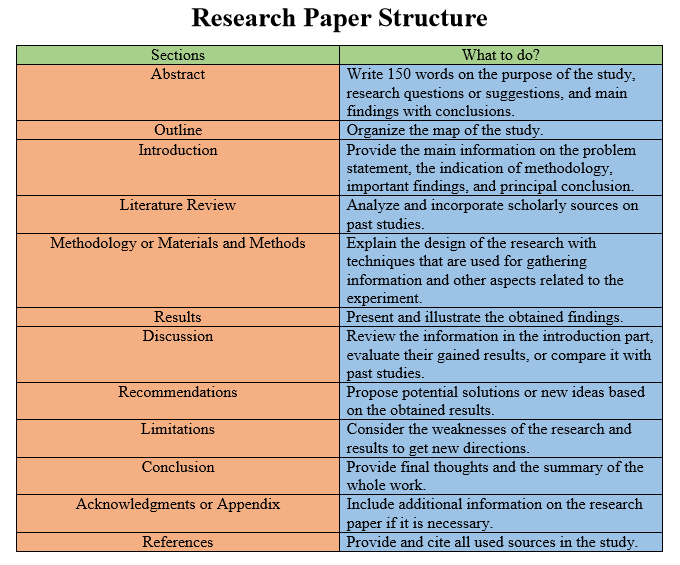
**References** mean a section where students, scholars, or scientists provide all used sources by following the format and academic rules.

The brief citations included in the body of your paper correspond to the more detailed citations provided at the end of the paper in the references section. In-text citations provide basic information—the author’s name, the publication date, and the page number if necessary—while the references section provides more extensive bibliographical information. Again, this information allows your reader to follow up on the sources you cited and do additional reading about the topic if desired.

The specific format of entries in the list of references varies slightly for different source types, but the entries generally include the following information:

* The name(s) of the author(s) or institution that wrote the source
* The year of publication and, where applicable, the exact date of publication
* The full title of the source
* For books, the city of publication
* For articles or essays, the name of the periodical or book in which the article or essay appears
* For magazine and journal articles, the volume number, issue number, and pages where the article appears
* For sources on the web, the URL where the source is located

The references page is double spaced and lists entries in alphabetical order by the author’s last name. If an entry continues for more than one line, the second line and each subsequent line are indented five spaces.



**How to Conduct an Effective Literature Review**

The process of conducting a literature review can be overwhelming. However, if you start with a clear research question, you can stay focused.

1. **Literature search:** Search for articles related to your research question. Keep notes of the search terms and keywords you use. A list of databases to search and notes of the ones you have searched will prevent duplicate searches.
2. **Critically analyze the literature:** Check each piece of literature for the following to help you decide whether it is relevant to your research:

- What is their research question?

- Are there potential conflicts of interest such as funders who may want a particular result?

- Are their methods sufficient to test the objectives?

- Can you identify any flaws in the research?

- Do their results make sense, or could there be other reasons for their conclusion?

- Are the authors respected in the field?

- Has the research been cited?

## How to Write a Good Research Paper Abstract

The importance of research paper abstracts cannot be emphasized enough.

* They are used by online databases to index large research works. Therefore, critical keywords must be used.
* Editors and reviewers read an abstract to decide whether an article is worth considering for publication.
* Readers use an abstract to decide whether the research is relevant to them.

A good research paper abstract is a concise and appealing synopsis of your research. There are two ways to write an abstract:  structured and unstructured research abstracts. The author guidelines of the journal you are submitting your research to will tell you the format they require.

* The **structured abstract**has distinct sections with headings. This style enables a reader to easily find the relevant information under clear headings (objective, methods, results, and conclusion). Think of each section as a question and provide a concise but detailed answer under each heading.
* The **unstructured abstract** is a narrative paragraph of your research.

## Effectively Citing and Referencing Your Sources

You need to acknowledge the original work that you talk about in your write-up. There are two reasons for this. First, cite someone’s idea to avoid plagiarism. Plagiarism is when you use words or ideas of others without acknowledging them and this is a serious offence. Second, readers will be able to source the literature you cited easily.

This is done by citing works in your text and providing the full reference for this citation in a reference list at the end of your document.

**Tips for effective refencing/citations:**

1. Keep a detailed list of your references including author(s), publication, year of publication, title, and page numbers.
2. Insert a citation (either a number or author name) in-text as you write.
3. List the full reference in a reference list according to the style required by the publication.
4. Pay attention to details as mistakes will misdirect readers.

**Synopsis**

A synopsis is a brief summary which gives readers an overview of the main points. In an academic context, this is usually a summary of a text (a journal article, book, report etc).

A synopsis aims to give the reader a full, if brief, account of the whole text so that they can follow its main points without having to read it themselves.

A research synopsis is a short outline of what your research thesis is and all the steps you propose to follow in order to achieve them. It gives you and your supervisor a clear view of what the research aims at achieving and within what time frame. It also helps you stay focused and makes the research work generally less tedious. This explains why your synopsis should be approached with clarity, systematically with unambiguous sentences.

The format for writing a synopsis varies from institution to institution and among disciplines. But even within a discipline, the format can always be tailored to best suit your specific research work. However, this article will focus on the major items that should be found in your synopsis in their most popular order. Below is the outline of how your research synopsis should look like. Note that the following items should only appear after you've written your research topic and the abstract to your research.

* **Background:**here you are meant to lead down from the research in your area of study generally down to your specific research topic. Discuss the importance of your proposed research work to research as a whole. Discuss also the academic gap which your research would fill which will lead to your research problem.
* **Theoretical Framework/Methodology/Conceptual Framework:**the above captions for this section aren't meant to be used interchangeably. It often depends on the discipline and the particular topic to determine which to use. The theoretical framework discusses the theory to employ in researching the object. Methodology indicates the methods of data gathering and analysis which can be quantitative and qualitative while the conceptual framework explains the major concepts that the research revolves round on.
* **Research Questions:**These are the questions that will propel the research work and give it more focus along the line.
* **Hypothesis:**here you mention the assumption on which the research work is built. Note that this assumption might turn out to be false at the end of the research.
* **Objectives of the study:** this highlights the objectives of your study; what your research aims at achieving. Here, like other items in your synopsis required a great deal of clarity.

* **Literature Review:**this contains a reading of other research works done on the area your work is centered. The idea is to show that your research topic hasn't been done before hence, it is researchable.
* **Limitations:**here you are to discuss the challenging factors that the research have or is likely to face. You and your supervisor would most likely make research choices based on this and determine whether to move ahead with the research.
* **References:**since the research work hasn't been carried out already, this section should indicate the major texts that will inform the knowledge upon which the research is built or whose findings your research work is propoing to refute. In the arts these texts are referred to "secondary texts".

The formats of the writing of the synopsis itself should follow the requirements of research writing in your discipline particularly. For instance, MLA requires 12 font size, double line spacing with Times New Roman font type.

II

## Thesis Writing Format

The format of a Thesis is one of the key similarities that a thesis and a dissertation have. Mentioned below are the structures:

### Front Matter

* **Title** – The candidate’s department usually gives a standard title page form which everyone is requied to follow. Usually, the title should be informative, consists important keywords, and adequately exhibit the topic of the thesis.
* **Abstract** – The adequate section briefly describes the research problem, alongwith the right methodology that will be used, and what are the key results at the end of the project.
* **Tabel of Contents –**Here the stduent is required to list all the key subject headings and subheadings that are being use din the thesis along witht he accurate page numbers.
* **List of Figures –**This is a list of all the figure numbers, figure titles, and page numbers mentioned in the thesis.
* **List of Tables –**The table list contains all the mentioned table numbers, table titles, and page numbers that is included in the thesis.
* **Nomenclature –**Usually we end of using a lot of unfamiliar symbols and numbers that may not be understandable to everyone, hence, a nomenclature is included where we list all the unfamiliar terms, symbols, acronyms, and their meanings.

### Body

* **Introduction –**Usually the introduction part of the thesis is divided into the following sub categories:
  1. Background
  2. Problem
  3. Statement of Purpose/Aim/Research Questions
* **Theory –**Usually the student is required to add a theory section if they have developed a theoretical basis for the research topic that includes any governing equations.
* **Methodology –**In this section of the thesis the writer list and describes the key materials and apparatus that were used in the thesis. After mentioning them, the procedure is described briefly with enough details so that it can be utilized by other readers for future research projects.
* **Results –**The results are presented after the above topics with the accurate information accompanied by the tables and graphs for further understanding.
* **Significance/Implications (Results of the Discussion) –**After presenting the results, the significance of it is emphasized for further discussions and what are the topics that has emerged from the following research for further exploration.
* **Overview of Chapter (Conclusion) –**This section reviews the results and states clearly what their significance is in the field of the particular subject. The writer also utilizes this section to comparatively analyse the result in the theoretical expectation what are their opinions after the end of the research.

### End Matter

* **Acknowledgements –**This section mentions all the advisors, sponsors, funding agencies, colleagues, technicians who assisted the researchers to carry out the entire project.
* **Appendixes –**Appendixes are list of information that provides detailed calculations, procedures, data for the entire project.
* **Bibliography –**This section consists of all the referred works in your project. Usually the structure of the bibliography is given by the department and the writer must follow the exact style recommended by them.

**Hypothesis**

* Hypothesis is a logical prediction of certain occurrences without the support of empirical confirmation or evidence.
* In scientific terms, it is a tentative theory or testable statement about the relationship between two or more variables i.e. independent and dependent variable.

A hypothesis is a clear statement of the information that the researcher intends to investigate. It is thus a clear statement that is essential before conducting research. A research hypothesis is a specification of a testable prediction about what a researcher expects as the outcome of the study. It comprises certain aspects such as the population, variables, and the relationship between the variables. It states the specific role of the position of individual elements through empirical verification. When conducting research, there are certain assumptions that are made by the researcher. According to the available information, the goal is to present the expected outcome after testing them.

**Types of Hypothesis**

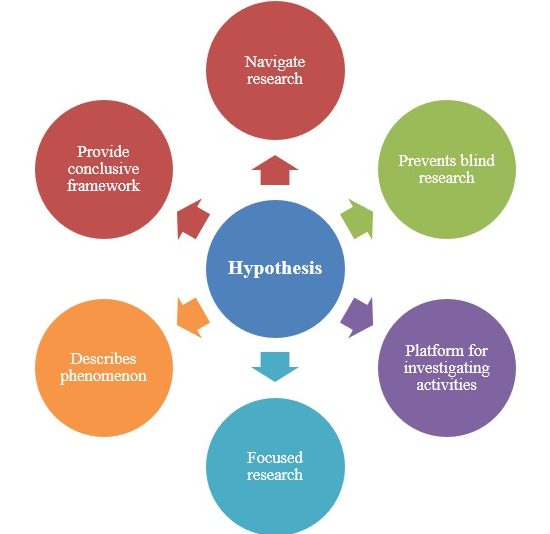
**Null Hypothesis:**

* A null hypothesis is a general statement which states no relationship between two variables or two phenomena. It is usually **denoted by H0.**

**Alternative Hypothesis:**

* An alternative hypothesis is a statement which states some statistical significance between two phenomena. It is usually **denoted by H1or HA.**

**Importance of Hypothesis in Research**



#### Navigate research

A hypothesis helps in identifying the areas that should be focused on for solving the research problem. It helps frame the concepts of study in a meaningful and effective manner. It also helps the researcher arrive at a conclusion for the study based on organized empirical data examination.

#### Prevents blind research

A hypothesis guides the researcher in the processes that need to be followed throughout the study. It prevents the researcher from collecting the massive data and doing blind research which would prove irrelevant.

#### A platform for investigating activities

By examining conceptual and factual elements related to the problem of a thesis, the hypothesis provides a framework for drawing effective conclusions. It also helps stimulate further studies.

#### Describes a phenomenon

Each time a hypothesis is tested, more information about the concerned phenomenon is made available. Empirical support via hypothesis testing helps analyse aspects that were unexplored earlier.

## Framing accurate research hypothesis statements

For the deduction of accurate and reliable outcomes from the analysis, belong stated things should be noted:

* Should never be formulated in the form of a question.
* Empirical testability of the hypothesis should be possible.
* A precise and specific statement of concept should be present.
* The hypothesis should not be contradictory to the identified concept and linkage between the variables.
* A clear specification of all the variables which are used for building relationships in the hypothesis should be present.
* The focus of a single hypothesis should only be on one issue. No multi-issue consideration should be taken while building the hypothesis i.e. could only be either relational or descriptive.
* The hypothesis should not be conflicting with the defined law of nature which is already specified as true.

**Theoretical Analysis (Theoretical Framework)**

A **theoretical framework** is a foundational review of existing theories that serves as a roadmap for developing the arguments you will use in your own work.

Theories are developed by researchers to explain phenomena, draw connections, and make predictions. In a theoretical framework, you explain the existing theories that support your research, showing that your work is grounded in established ideas.

## How to write a theoretical framework

To create your own theoretical framework, you can follow these three steps:

* Identifying your key concepts
* Evaluating and explaining relevant theories
* Showing how your research fits into existing research

### 1. Identify your key concepts

The first step is to pick out the key terms from your problem statement and research questions. Concepts often have multiple definitions, so your theoretical framework should also clearly define what you mean by each term.

Example: Problem statement and research questionsA new boutique downtown is struggling with the problem that many of their online customers do not return to make subsequent purchases. This is a big issue for the otherwise fast-growing store. Management wants to increase customer loyalty, and they believe that improved customer satisfaction will play a major role in achieving their goal of increased return customers.

To investigate this problem, you have identified and plan to focus on the following problem statement, objective, and research questions:

**Problem**: Many online customers do not return to make subsequent purchases.

**Objective**: To increase the quantity of return customers.

**Research question**: How can the satisfaction of company X’s online customers be improved in order to increase the quantity of return customers?

The concepts of “customer loyalty” and “customer satisfaction” are clearly central to this study, along with their relationship to the likelihood that a customer will return. Your theoretical framework should define these concepts and discuss theories about the relationship between these variables.

### 2. Evaluate and explain relevant theories

By conducting a thorough literature review, you can determine how other researchers have defined these key concepts and drawn connections between them. As you write your theoretical framework, your aim is to compare and critically evaluate the approaches that different authors have taken.

After discussing different models and theories, you can establish the definitions that best fit your research and justify why. You can even combine theories from different fields to build your own unique framework if this better suits your topic.

Make sure to at least briefly mention each of the most important theories related to your key concepts. If there is a well-established theory that you don’t want to apply to your own research, explain why it isn’t suitable for your purposes.

### 3. Show how your research fits into existing research

Apart from summarizing and discussing existing theories, your theoretical framework should show how your project will make use of these ideas and take them a step further.

You might aim to do one or more of the following:

* Test whether a theory holds in a specific, previously unexamined context
* Use an existing theory as a basis for interpreting your results
* Critique or challenge a theory
* Combine different theories in a new or unique way

**III**

**Presentation**

The one thing that all good presenters have in common is enthusiasm. Enthusiasm is contagious. It affects the audience, and all good speakers always make what they say really matter. What matters to them will matter to the audience. So, an enthusiastic presentation will infect the audience’s enthusiasm; thus, it makes a good presentation.

**How to be A Good Presenter**

1. **BE PREPARED**. Make sure everything is perfect before you speak: materials, room, seating, visibility, and equipment. Plan the detail of your presentation from thew start to the end. Try to memorize some good expressions to help you sound confident and in control.

2. **BELIEVE IN YOURSELF**. Build your confidence by mastering all the materials and memorizing all the important points.

3. **INTERACT WITH YOUR AUDIENCE**. Do not ignore your audience. A good presentation is like a conversation. Keep the audience’s interest by asking them questions and responding to their reactions.

4. **KNOW YOUR AUDIENCE**. Connect with your audience by addressing their priority needs, their goals, and their concerns. Speak for them, not yourself. Share and show how many things you have in common with them. Treat them as equals whoever they are. Do not talk down to them.

5. **BE CONCISE.** Do not waste time by giving long and boring introductions or unnecessary points. Make at least one powerful statement in the beginning of presentation. Keep the sentences short, simple, and interesting.

6. **MANAGE YOUR TIME**. Punctuality is very important. Do not speak under the time allocation, and do not excess the time limit. Make sure to use the time effectively. Do not speak too fast; make sure you pronounce words correctly.

7. **TAKE YOUR TIME**. After delivering a really important point, pause and let the audience absorb the content before you move on. Manage the pauses between topics so the audience will understand each topic clearly.

8. **PREPARE GOOD VISUALS**. State only the main points in the visuals. Do not put boring tables of figures or long lines text. Makes sure everything is seen clearly (font, size, color, style). Put interesting charts, cartoons, or quotes to catch your audience’s attention. However, do not create visual that will divert the audience from you (disturbing image or image with excessive movements).

9. **DO NOT COMPETE WITH THE VISUALS**. Give the audience time to look at the visuals. Make brief comments, and point relevant parts of the visuals as you speak.

10. **KEEP ALERT AND FLEXIBLE**. Adjust the presentation according to the situation. Do not continue the style of presentation that is no longer appropriate. Be mindful of unexpected circumstances such as blackout, technical problems, etc.

11. **ANTICIPATE AND MANAGE QUESTIONS**. Provide opportunity to answer questions and respond the comments from the audience. Treat the questions as an opportunity to deliver your message better. If possible, engage in a dialogue to give the explanation better. Be considerate to the disagreeable individuals or the ones who ask obnoxious questions. Be polite and avoid comment that might offend anyone, especially minorities.

12. **MAKE A STRONG FINISH**. Slow down and lower your voice once you are about to finish your presentation. Look at the audience and state your final words slowly and clearly.

13. **BE YOURSELF**. Learn from other public speakers or presenters, but do not try to imitate them. Be comfortable with your own skill. Develop your own style and do not do anything that feels unnatural. Speak naturally, do not try to remember lines.

**Things to Consider Before Delivering a Presentation**

The key of having a good presentation is preparation. There are several things that need to be considered to create a good presentation.

1. **OBJECTIVE**. Set your objective clearly. What do you want to get from the presentation? What are the audience expecting from you? What is their objective? How can you make the objective of the audience match your own?

2. **AUDIENCE**. Make sure to know how many people will attend. Prepare hand out, materials, plan movement, and expected questions. Identify their characteristics, occupation, and level of expertise. Decide the type of speech that is appropriate to them; formal or informal.

3. **VISUAL AIDS**. Create visual aids that help you to clarify and strengthen your message. Give comprehensible information and provide examples. Make them interesting and put the key points only.

4. **VENUE**. Inspect the venue before the presentation starts. Check all the electronic devices, the visibility of audience, the sound, markers and eraser for the whiteboard, the space to move around, and the appropriate type of visual aids.

5. **CLOTHING**. Dress appropriately according to the theme of presentation. Do not wear too much jewelry. Avoid stand out or glitter color that deviate attention.

6. **CULTURE**. Be aware of the differences of culture, belief, and custom. Be extra careful when making jokes and giving comment.

**Opening of Presentation**

Opening plays significant role in creating good presentation. A strong and attractive opening will catch the audience attention and generate a good atmosphere. This chapter will introduce several possible expressions that can be used to give an effective opening in a presentation.

**Greeting and Welcoming the Audience**

Start the presentation by welcoming the audience.

Study the following expressions: Good morning/afternoon/evening, thank you all for coming. Good morning/afternoon/evening, ladies and gentlemen. Hello/Hi everyone. Ok, let’s get started. Thanks for coming, perhaps we should begin. First of all, let me thank you for coming here today. It’s a pleasure to welcome you today. I’m happy/delighted that so many of you could make it today. It’s good to see you all here. I suggest we begin now.

**Introducing Yourself**

Mention your name, education background/place of work, recent position, and responsibility.

Let me introduce myself, I’m John Watson from…

For those of you who don’t know me, my name is…

Let me just start by introducing myself. My name is…

**Stating the Purpose**

Below are the basic expressions of introducing the topic/stating the purpose of a presentation.

This morning, I’m going to talk about…

In this special occasion, I’d like to discuss/present about… I’d like to report on….

**Explaining the Relevance of the Topic**

Below are some expressions used to tell the audience the importance of the presentation

. My presentation is particularly relevant to those of you who… The presentation/topic is very important for you because…

**Structuring the Opening**

Pick some expressions of greeting, introduction, and statement of purpose to create your own opening. Look at some of the samples below. 1. I suggest we begin now. Good morning, everyone. Thanks for coming. I’m David Jones, the new HR Manager of Tale Corporation.

**Steps in Presentation**

1. Introduction - Explaining briefly the importance of signposting in a presentation Listening to the explanation
2. Content - Introducing types of signposting and time signals Memorizing several expressions. Discussing how to put the correct signposting according to the type of information in a presentation
3. Closing - Concluding the activities. Giving opinions and insights about the activities

**Content**

**Signposting**

It is important to have clear structure in delivering the content of a presentation. The expression that is needed to move on to the next point or change direction effectively is signposting.

**Types of Signposting**

The phrases of signposting are utilized to assist the audience through a presentation.

**Starting A Point and What is Coming**

Below are the expressions used when you want to start to talk about a topic. This type is used to start talking about a topic in the beginning of presentation or talking about new topic.

In this part of my presentation, I’d like to discuss… So, let me give you a brief overview

**Moving On and Start to Another Point**

This type is used to move on to the next topic in the presentation. Look at the following expressions.

Then, the next topic will be…

Finally, we’re going to discuss…

**Finishing a Point**

These expressions are used to signal the end of a topic during a presentation.

Well, I’ve told you about…

That’s all I have to say about…

**Stating and Referring to Fact**

**Closing**

Basically, there are at least four parts in closing a presentation; signaling the end of presentation, summarizing main points, giving suggestions/recommendation, and inviting questions. It is also recommended to give a strong ending that will be remembered by the audience.

**Signaling the End of a Presentation**

Below are some expressions to signal the end of a presentation.

Well, this brings me to the end of my presentation. I’m sorry but time is nearly up. We’ve almost run out of time. We only have a few minutes left.

I’m now approaching the end of my talk. As final point, I’d like to… Unfortunately, time won’t allow me to explain all the details.

**Summarizing Main Points**

In the closing, it is important to deliver the summary of main points. Below are some expressions that can be used. Let me summarize the points before I go on. Before I stop, let me go over the key issue again. I’d like to run through my main points again.

**Making Recommendation and Suggestions**

It is also better to put some recommendations or suggestions in the end of a presentation.

We’d suggest…

Therefore, we strongly recommend that….

I believe we should…

**Inviting Questions**

**Final Statement**

Below are the expressions to give your final say. Thank you very much for your attention. So, that’s all I have to say. Thank you all for listening

**Strategies for Good Conclusions**

There are many ways to end your presentation. Some presenter uses several techniques to give effective conclusions or impactful ending. Below are some tips to make an effective conclusion.

1. QUOTE A FAMOUS PERSON
2. ASK QUESTION

**Seminar**

A **seminar** is a form of academic or technical instruction, either at an academic institution or offered by a commercial or professional organization. It has the function of bringing together small groups for recurring meetings, focusing each time on some particular subject, in which everyone present is requested to participate. It is essentially a place where assigned readings are discussed, questions can be raised and debates can be conducted.

**PURPOSE OF SEMINAR**

A seminar may have several purposes or just one purpose. For instance, a seminar may be for the purpose of education, such as a lecture, where the participants engage in the discussion of an academic subject for the aim of gaining a better insight into the subject. Other forms of educational seminars might be held to impart some skills or knowledge to the participants. Examples of such seminars include personal finance, web marketing, real estate, investing or other types of seminars where the participants gain knowledge or tips about the topic of discussion.

Of course, a seminar can be motivational, in which case the purpose is usually to inspire the attendees to become better people, or to work towards implementing the skills they might have learned from the seminar. For instance, a business seminar with a financial theme could be for the purpose of teaching small business owners how to pitch to investors or to write a solid business plan, and to motivate them to get started right away.

Sometimes, seminars are simply a way for businessmen and women, or other like-minded people, to network and meet other attendees with similar interests. Such seminars provide opportunities for the attendees to make some potentially valuable contacts that can help them move to the next level in their careers or endeavors.

A trade seminar brings a wide cross-section of the community together, such as government officials, businessmen and women and the general public. Such seminars often consist of workshops and the presentation of white papers. They are usually held for the purpose of networking with various vendors and making new connections.

**Seminar Methods**

The seminar method is the most modern and advanced method of teaching. A seminar is an advanced group technique which is usually used in higher education. It is an instructional technique it involves generating a situation for a group to have a guided interaction among themselves on a theme. It refers to a structured group discussion what usually follows a formal lecture or lectures often in the form of an essay or a paper presentation on a theme.

The skills such as reading, writing and talking are essential for the personality development of a man. The seminar method integrates such skills of reading and writing with presentation skills. This seminar method is employed to realize the higher objectives of cognitive & affective domains. The higher learning process requires the interactive and integrated methodologies based on the psychological principles. The seminar method applies such technique of human interaction / intervention with the learning and teaching experiences.

**Aim & Objectives of Seminar Method:**

This seminar method is utilized to realize the higher objectives of cognitive and affective domains.

i. To develop higher cognitive abilities.

ii. To develop the ability of responding in this manner would involve higher cognitive actions.

iii. To develop the ability of keen observation of experience, feelings. To develop the ability to seek clarification and defend the ideas of others effectively.

iv. To develop the feeling of tolerance to the opposite ideas of others.

v. To develop the feelings of co-operation with other colleagues and respect of the ideas and feelings of others.

vi. To develop the emotional ability among the participants of the seminar.

vii. To acquire the good manners of putting questions and answering the questions of others effectively. The human interaction under this technique develops the good manners and skills among the participants. Provide a good learning and scholastic experience to the participants of seminar.

**Pre-requisites (Basic Principles) to be included in the seminar:**

This seminar method depends with the lingual, social and emotional instances and its maturity level. The complex and undefined concept or article must be read and discussed for the meaningful learning experiences and new concept. Group discussion is emphasized. The kernel of seminar is stressed. The value and success of the seminar depends on the path of the learner and their learning experiences through the discussion. The learner can advocate and interact in group discussion with his experiences and concept derived. Both the group and learner can transform their ideas and to derive a new conclusion also be anticipated. In the lower level of learning experiences the concepts are explanatory but in this higher level of learning experience the theme or concept centered and need more evidences and explanations through the discussion. The interactions in this method develop observation and questioning skills, evaluation skills using their own learning experience.

**Modes of Seminar**

**Types of Seminar Seminars are conducted in various stages.**

Based on the size and organizational aspects the seminars can be classified in to four types.

1. Mini seminar

2. Major seminar

3. National seminar

4. International seminar

**Mini seminar**: Its coverage and scope are small and simple. A small population is enough to hold this seminar. A discussion held over the topic taught or to be taught with the students is known as Group discussion. Such group discussions held in an organized way within a class room, it is called mini seminar. This mini seminar gives the students training in questioning skills, organizing the information and presentation skills of seminar. A mini seminar is felt necessary because it gives good experience to conduct a major seminar at Institutional level.

**Major seminar**: The seminar conducted at an institutional or departmental level for a specific topic or subject is known as Major seminar. Usually students and teachers are participating in this type of seminar. This major seminar can be organized at department level for every month. A specific topic or subject is selected for the theme of the seminar.

**National seminar**: An association of any kind particularly with academic or professional interest or an organization (Government, Firm, etc.,) conducts the seminar at National level is called National seminar. The subject experts are invited to the seminar for discussion. The Secretary of the seminar prepares the schedule and functionaries for seminar.

**International seminar**: Usually the seminar conducted by an international organization or agency is known as International seminar. Theme of this seminar has wider aspects. Globalization, Renovation, Atomic energy agreements, Policies implementation and modification etc., are examples for themes of International seminars. A Nation or its body can conduct or organize the international seminar.

**Seminar Committee**: Seminar is conducted or organized by the committee proposed for this purpose only. This committee constitutes a chairperson, Organizing Secretary and subject experts who are expertise in the theme proposed for seminar. The organizing committee guides and helps with the functions of Chair person and organizing secretary. Usually a seminar has been conducted with the following team of organizing body.

1. Chairperson or President / Convenor of Seminar Naturally, She/he may be the apex person of the Institution / Department / Government / Firm / Policy maker of the concerned body or agency.

2. Organizing Secretary of Seminar Usually he is nominated by the Chair person or President of the Seminar committee. S/he must be a good administrator and subject expert in the field proposed theme of the seminar. He must be the person of tolerance and capable of doing things in right time with right persons.

3. Chairperson of the Technical Session of seminar She/he must be the person with expertise in the theme proposed for the seminar. S/he would have a good experience to perform all the activities of technical session which is vital to the seminar.

4. Speaker of Seminar S/he is the active participant of seminar presenting his / her paper among the other participants in the presence of Chair Person of Technical session of seminar.

5. Participants / Paper presenters of seminar

The people who are presenting papers and observing the paper presentation by participating in the seminar are termed as Paper presenters and Participants of the seminar.

**Merits of Seminar method:**

Naturally, the spontaneous learning can be achieved effectively in this¬ method.

Seminar is usually learner centered.

Information seeking and retrieval behavior is encouraged very much in this method.

The learner himself prepares and compiles his own paper for the seminar gives readiness of mind and learning becomes structured. Learning by doing is encouraged in this method.

The paper presenter / participant receive a reinforced learning experience from the Group discussion. Learning experiences is highly structured by the learner himself.

The teacher or chair person of technical session only plays the Guidance and instructional role. Develops cognitive, affective domains based learning.

Norms of behavior is developed and reinforced.

Develops open mindedness, suppress the subjective ideas from the learners.