

As per the Latest Skill Education Curriculum
prescribed by the CBSE, New Delhi

Aligned with
NEP 2020
and
NCF 2023

For Class **9**

A Concise Course in

ARTIFICIAL Intelligence



Subject Code : 417

By

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Includes

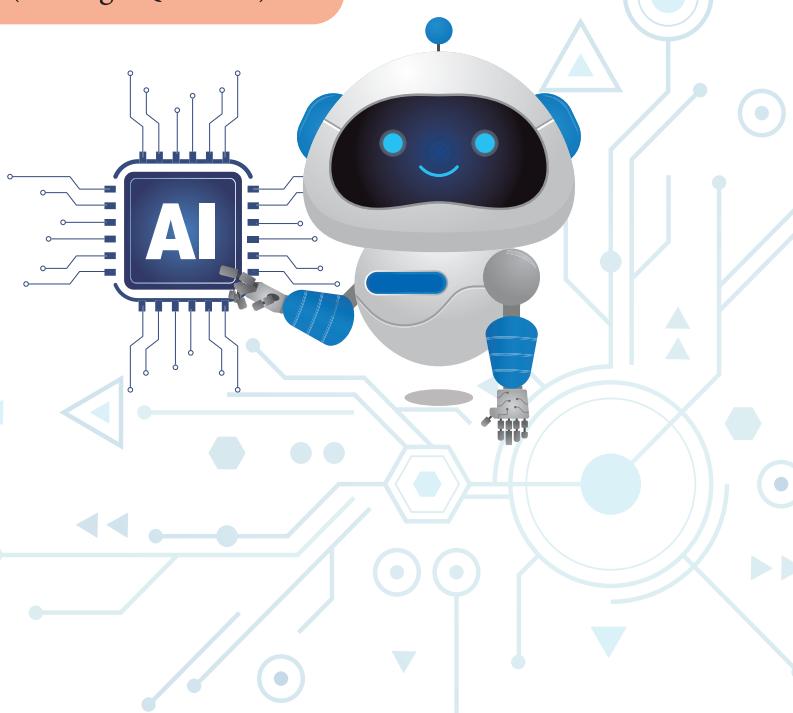
Part A: Employability Skills

Part B: Subject Specific Skills

Part C: Practical Work

Part D: Project Work

Model Test Papers
(Through QR Code)





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PREFACE

Dear Readers

Welcome to the world of Artificial Intelligence (AI), where new ideas flourish and endless possibilities await discovery. We have collaborated on this book series to guide you toward a future driven by technology and fairness for everyone.

In today's fast-evolving world, AI is a game-changer, offering solutions to diverse problems in entirely new ways. It has the power to reshape how we work and what jobs would look like in the future.

India has a chance to lead in technology, aiming not only for economic success but also to use AI for social good. The theme **#AIforAll** in India's plan for AI focusses on including everyone in this journey towards growth.

Recognising the pivotal role of education, the Central Board of Secondary Education (CBSE) has introduced vocational subjects to prepare the youth for the future. This series, aligned with NSQF subject code 417—Artificial Intelligence for Classes IX and X is designed to cater to these educational reforms. Divided into multiple parts, it seeks to impart both **Employability Skills** and **Vocational Expertise** in AI.

Part A: Employability Skills – This section serves as a foundation, focussing on crucial skills essential for employability in any field. From communication and self-management to ICT proficiency, entrepreneurial acumen, and environmental consciousness, these units are tailored to empower students holistically.

Part B: Subject Specific Skills – This section delves deeper into the realm of AI, unravelling its fundamental concepts and applications. From understanding the core principles of AI to exploring Data Sciences, Computer Vision, Natural Language Processing, and Project Cycles, this part equips learners with practical insights and hands-on experiences.

Part C: Practical Work – This section introduces learners to introductory Python programming skills in a very user-friendly format.

Part D: Project Work – This section helps learners explore the world of Artificial Intelligence and its applications through interactive games, activities, and multi-sensory learning. It enables students to engage in hands-on experiences and prepares them to become AI-ready.

Throughout the series, simplicity intertwines with comprehensiveness, aided by lucid examples and experiments to facilitate understanding. Ample practice questions, including MCQs, short and long-answer questions, competency-based assessments, and practical activities, ensure a thorough grasp of the subject matter.

I extend my heartfelt gratitude to our support network—family, friends, and the dedicated team at **Inventant Education**—whose unwavering assistance made this endeavour possible. I owe a special acknowledgement to Madam Shashi Kir for her invaluable contributions to this project.

Wishing you all immense success in your pursuit of knowledge! Embrace the joy of learning and embark on this exhilarating journey of discovery!

— Author

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INSIDE THE BOOK

Learning Objectives

It presents an overview of concepts that are covered in the chapter.

Learning Objectives

After completing this unit, you will be able to:

- understand the significance of communication and its various elements.
- know about different communication methods.
- understand the perspective in communication and different factors affecting it.
- learn about 7 C's of effective communication.
- understand the importance of Writing skills and various grammatical constructs
 - parts of speech Noun, Pronoun etc.



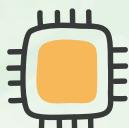
Knowledge Casket

Human communication was initiated with the origin of speech approximately 100,000 BCE. Symbols were developed about 30,000 years ago. All of those inventions were based on the key concept of the symbol.

The oldest known symbols created for communication were

Knowledge Casket

Aiding students in understanding real-life applications of concepts elucidated in the chapters.



Fact Locker

Presents interesting, chapter-relevant facts to stimulate research and maintain dynamism rather than focusing solely on theoretical contents.



Fact Locker

The volume of conversational speech is around 60dB. A shout registers around 75dB, whereas whispering is around 35-40dB. To put that into context, anything above 120dB will surpass the human pain

Brain Battle

Which of these is not a self-management skill?

- (a) Financial strength
- (b) Self-confidence
- (c) Time-management

Brain Battle

Embedded questions throughout chapters to gauge students' understanding of the covered material

Techvice

This inculcates computer etiquettes among learners and gives self-reflecting thoughts that instil moral values in children.

TECHVICE

Stay curious, embrace challenges, and never stop learning because in the world of technology, knowledge is your greatest asset.



Word Finder

Offers concise explanations for intricate terms and technical jargon, facilitating students' understanding.

Word Finder

ICT: combination of communication technology (telephone lines and wireless technology) and information technology

Electronic Mail: facility of sending and receiving electronic mails

SPEED KEYS

We can also press **Ctrl + Alt + Delete** Keys together to Shut down the computer.

Speed Keys

Provides tips to assist students in memorizing commonly used shortcut keys, enhancing efficiency in tasks.



Now I Understand

Repeated definitions distributed throughout chapters for improved retention, ensuring readiness for subsequent learning stages.

NOW I UNDERSTAND

1. The operating system is the main software that helps the computer run and perform all its essential task.
2. Unix is the powerful, oldest, and most reliable operating system initially developed at AT&T Bell laboratories by Ken Thompson and Dennis Ritchie in 1970.

VI. Competency/Application Based Questions:

1. A group of 10 high school students want to start an organisation to educate illiterate adults. What type of organisation should they start?
2. Aman is a budding artist. He wants to start an art gallery. He wants an option that requires a minimum investment. Which business option should she choose, and why?

Application Based Question

The book features exercises designed to evaluate students' capacity to apply theoretical knowledge to solve real-world problems, promoting a deeper understanding and the development of practical skills.

Activity

Enclosed within the book are projects that serve as a bridge between theory and practical application, encouraging creativity, critical thinking, and collaboration while preparing individuals to tackle real-world challenges.

ACTIVITY

Google Trends

With so many unpredictable changes around the globe, how can you prepare for sudden shifts in customer interests and determine what topics people are — or are not — searching for?

The answer is Google Trends, a free tool from Google. Google Trends allows you to see what people are searching for on Google and how those searches change over time, season, and geographic region, giving you valuable insights into what your consumers are investigating online.

This activity discusses the best practices for utilising Google Trends to discover what's on your audience's mind and how to tailor your marketing efforts to fit their needs.



SYLLABUS

Total Marks : 100

Theory : 50
Practical : 50

	UNITS	NO. OF HOURS for Theory and Practical		MAX. MARKS for Theory and Practical
PART A	Employability Skills			
	Unit 1: Communication Skills-I	10		2
	Unit 2: Self-Management Skills-I	10		2
	Unit 3: ICT Skills-I	10		2
	Unit 4: Entrepreneurial Skills-I	15		2
	Unit 5: Green Skills-I	05		2
Total		50		10
PART B	Subject Specific Skills	Theory	Practical	
	Unit 1: AI Reflection, Project Cycle and Ethics	30	25	10
	Unit 2: Data Literacy	22	28	10
	Unit 3: Math for AI (Statistics & Probability)	12	13	07
	Unit 4: Introduction to Generative AI	08	12	05
	Unit 5: Introduction to Python	01	09	08
Total		160		40
PART C	Practical Work			
	Unit 5: Introduction to Python Practical File (minimum 15 programs)			15
	Practical Examination <ul style="list-style-type: none"> ● Simple programs using input and output function ● Variables, Arithmetic Operators, Expressions, Data Types ● Flow of control and conditions ● Lists * Any 3 programs based on the above topics			15
	Viva Voce			5
	Total			35
	Project Work / Field Visit / Student Portfolio * relate it to Sustainable Development Goals			15
PART D	Total			15
	GRAND TOTAL		210	100

Part A : EMPLOYABILITY SKILLS

S. No.	Units	Duration in Hours
1.	Unit 1: Communication Skills-I	10
2.	Unit 2: Self-management Skills-I	10
3.	Unit 3: Information and Communication Technology Skills-I	10
4.	Unit 4: Entrepreneurial Skills-I	15
5.	Unit 5: Green Skills-I	05
	TOTAL	50

NOTE: Detailed curriculum/ topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.

Part B : SUBJECT SPECIFIC SKILLS

- ❖ **Unit 1 :** AI Reflection, Project Cycle and Ethics
- ❖ **Unit 2 :** Data Literacy
- ❖ **Unit 3 :** Math for AI (Statistics & Probability)
- ❖ **Unit 4 :** Introduction to Generative AI
- ❖ **Unit 5 :** Introduction to Python

UNIT-1 — AI REFLECTION, PROJECT CYCLE AND ETHICS

SUB-UNIT	LEARNING OUTCOMES	SESSION / ACTIVITY / PRACTICAL
AI Reflection	To identify and appreciate Artificial Intelligence and describe its applications in daily life.	<p>Session: Introduction to AI and setting up the context of the curriculum</p> <ul style="list-style-type: none"> ● Recommended Activity: Make a statement about lighting and LUIS will interpret and adjust the house accordingly https://aidemos.microsoft.com/luis/demo
	To recognize, engage and relate with the three realms of AI: , Computer Vision, Data Statistics and Natural Language Processing.	<p>Recommended Activity: The AI Game</p> <ul style="list-style-type: none"> ● Learners to participate in three games based on different AI domains. <ul style="list-style-type: none"> ❖ Game 1: Rock, Paper and Scissors (based on data) https://next.rockpaperscissors.ai/ ❖ Game 2: Semantris (based on Natural Language Processing - NLP) https://research.google.com/semantris/ ❖ Game 3: Quick Draw (based on Computer Vision - CV) https://quickdraw.withgoogle.com/

SUB-UNIT	LEARNING OUTCOMES	SESSION / ACTIVITY / PRACTICAL
AI Project Cycle	Identify the AI Project Cycle framework.	<p>Session: Introduction to AI Project Cycle</p> <ul style="list-style-type: none"> ● Problem Scoping ● Data Acquisition ● Data Exploration ● Modeling ● Evaluation ● Deployment
	Learn problem scoping and ways to set goals for an AI project.	<p>Session : Problem Scoping</p> <p>Activity: Brainstorm around the theme provided and set a goal for the AI project.</p> <ul style="list-style-type: none"> ● Discuss various topics within the given theme and select one. ● Fill in the 4Ws problem canvas and a problem statement to learn more about the problem identified in the community/ society ● List down/ Draw a mind map of problems related to the selected topic and choose one problem to be the goal for the project.
	Identify stakeholders involved in the problem scoped. Brainstorm on the ethical issues involved around the problem selected.	<p>Activity: To set actions around the goal.</p> <ul style="list-style-type: none"> ● List down the stakeholders involved in the problem. ● Search on the current actions taken to solve this problem. ● Think around the ethics involved in the goal of your project.
	Understand the iterative nature of problem scoping for in the AI project cycle. Foresee the kind of data required and the kind of analysis to be done.	<p>Activity: Data and Analysis</p> <ul style="list-style-type: none"> ● What are the data features needed? ● How will the features collected affect the problem? ● Where can you get the data? ● How frequent do you have to collect the data? ● What happens if you don't have enough data? ● What kind of analysis needs to be done? ● How will it be validated? ● How does the analysis inform the action?
	Share what the students have discussed so far.	<p>Presentation: Presenting the goal, actions and data.</p> <p>Teamwork Activity:</p> <ul style="list-style-type: none"> ● Brainstorming solutions for the problem statement.
	Identify data requirements and find reliable sources to obtain relevant data.	<p>Session: Data Acquisition</p> <p>Activity: Introduction to data and its types.</p> <ul style="list-style-type: none"> ● Students work around the scenarios given to them and think of ways to acquire data. <p>Activity: Data Features</p> <ul style="list-style-type: none"> ● Identifying the possible data features affecting the problem. <p>Activity: System Maps</p> <ul style="list-style-type: none"> ● Creating system maps considering data features identified.

	To understand the purpose of Data Visualisation	Session: Data Exploration/ Data Visualisation <ul style="list-style-type: none"> • Need of visualising data • Ways to visualise data using various types of graphical tools. Quiz Time
	Use various types of graphs to visualise acquired data.	Recommended Activities: Let's use Graphical Tools <ul style="list-style-type: none"> • Selecting an appropriate graphical format and presenting the graph sketched. • Understanding graphs using https://datavizcatalogue.com/ • Listing of newly learnt data visualization techniques. • Top 10 Song Prediction: Identify the data features, collect the data and convert into graphical representation. • Collect and store data in a spreadsheet and create some graphical representations to understand the data effectively.
	Understand modeling (Rule-based & Learning-based)	Session: Modeling <ul style="list-style-type: none"> • Introduction to modeling and types of models (Rule-based & Learning-based)
	Understand various evaluation techniques.	Session: Evaluation Learners will understand about new terms <ul style="list-style-type: none"> • True Positive • False Positive • True Negative • False Negative
	Challenge students to think about how they can apply their knowledge of deployment in future AI projects and encourage them to continue exploring different deployment methods.	Session: Deployment Recommended Case Study: Preventable Blindness. Activity: Implementation of AI project cycle to develop an AI Model for Personalized Education.
	To understand and reflect on the ethical issues around AI.	Session: Ethics Video Session: Discussing about AI Ethics Recommended Activity: Ethics Awareness <ul style="list-style-type: none"> • Students play the role of major stakeholders, and they have to decide what is ethical and what is not for a given scenario. • Students to explore Moral Machine (https://www.moralmachine.net/) to understand more about the impact of ethical concerns
	To gain awareness around AI bias and AI access	Session: AI Bias and AI Access <ul style="list-style-type: none"> • Discussing about the possible bias in data collection • Discussing about the implications of AI technology
	To let the students analyse the advantages and disadvantages of Artificial Intelligence.	Recommended Activity: Balloon Debate <ul style="list-style-type: none"> • Students divide in teams of 3 and 2 teams are given same theme. One team goes in affirmation to AI for their section while the other one goes against it. • They have to come up with their points as to why AI is beneficial/ harmful for the society.

UNIT-2 — DATA LITERACY

SUB-UNIT	LEARNING OUTCOMES	SESSION / ACTIVITY / PRACTICAL
Basics of Data Literacy	<ul style="list-style-type: none"> Define data literacy and recognize its importance. Understand how data literacy enables informed decision-making and critical thinking. Apply the Data Literacy Process Framework to analyze and interpret data effectively. Differentiate between Data Privacy and Security. Identify potential risks associated with data breaches and unauthorized access. Learn measures to protect data privacy and enhance data security. 	<p>Session: Basics of data literacy</p> <ul style="list-style-type: none"> Introduction to Data Literacy Impact of data Literacy How to become Data Literate? What are data security and privacy? How are they related to AI? Best Practices for Cyber Security <p>Recommended Activity: Impact of News Articles</p> <p>Reference Videos:</p> <ul style="list-style-type: none"> ❖ https://www.youtube.com/watch?v=yhO_t-c3yJY ❖ https://www.youtube.com/watch?v=aO858HyFbKI ❖ https://www.cbse.gov.in/cbsenew/documents/Cyber%20Safety.pdf
Acquiring Data, Processing, and Interpreting Data	<ul style="list-style-type: none"> Determine the best methods to acquire data. Classify different types of data and enlist different methodologies to acquire it. Define and describe data interpretation. Enlist and explain the different methods of data interpretation. Recognize the types of data interpretation. Realize the importance of data interpretation. 	<p>Session: Acquiring Data, Processing, and Interpreting Data</p> <ul style="list-style-type: none"> Types of data Data Acquisition/Acquiring Data Best Practices for Acquiring Data Features of data and Data Preprocessing Data Processing and Data Interpretation Types of Data Interpretation Importance of Data Interpretation <p>Recommended Activities:</p> <ul style="list-style-type: none"> Trend analysis Visualize and Interpret Data
Project Interactive Data Dashboard & Presentation	<ul style="list-style-type: none"> Recognize the importance of data visualization Discover different methods of data visualization 	<p>Session: Project Interactive Data Dashboard & Presentation</p> <ul style="list-style-type: none"> Data visualization Using Tableau <p>Reference Links</p> <ul style="list-style-type: none"> ❖ https://public.tableau.com/en-us/s/download ❖ https://www.datawrapper.de/ <p>Video Links:</p> <ul style="list-style-type: none"> ❖ https://www.youtube.com/watch?v=NLCzpPRCc7U ❖ https://www.youtube.com/watch?v=_M8BnosAD78

UNIT-3 — MATH FOR AI (Statistics & Probability)

SUB-UNIT	LEARNING OUTCOMES	SESSION / ACTIVITY / PRACTICAL
Importance of Math for AI	<p>Analyzing the data in the form of numbers/images and find the relation/pattern between the them.</p> <p>Use of Math in AI.</p>	<p>Session: Importance of Math for AI</p> <ul style="list-style-type: none"> Finding Patterns in Numbers and images. <p>Uses of Math:</p> <ul style="list-style-type: none"> ❖ Statistics ❖ Linear Algebra ❖ Probability ❖ Calculus

	Number Patterns Picture Analogy	Activity: <ul style="list-style-type: none"> observe the number pattern and find the missing number. To find connections between sets of images and use that to solve problems,
Statistics	Understand the concept of Statistics in real life.	Session : <ul style="list-style-type: none"> Definition of Statistics Applications <ul style="list-style-type: none"> ❖ Disaster Management ❖ Sports ❖ Diseases Prediction ❖ Weather Forecast
	Application in various real life scenarios	Activity: Uses of Statistics in daily life <ul style="list-style-type: none"> Students will explore the applications of statistics in real life .They collect data and can apply various statistical measures to analyze the data. Activity: Car Spotting and Tabulating Purpose: To implement the concept of data collection , analysis and interpretation. Activity Introduction: <ul style="list-style-type: none"> In this activity, Students will be engaged in data collection and tabulation. Data collection plays a key role in Artificial Intelligence as it forms the basis of statistics and interpretation by AI. This activity will also require students to answer a set of questions based on the recorded data.
Probability	Understand the concept of Probability in real life and explore various types of events.	Session: Introduction to Probability <ul style="list-style-type: none"> How to calculate the probability of an event Types of events understand the concept of Probability using a relatable example. Exercise: Identify the type of event.
	Application in various real life scenarios	Session : Applications of Probability <ul style="list-style-type: none"> Sports Weather Forecast Traffic Estimation Exercise: Revision time

UNIT-4 — INTRODUCTION TO GENERATIVE AI

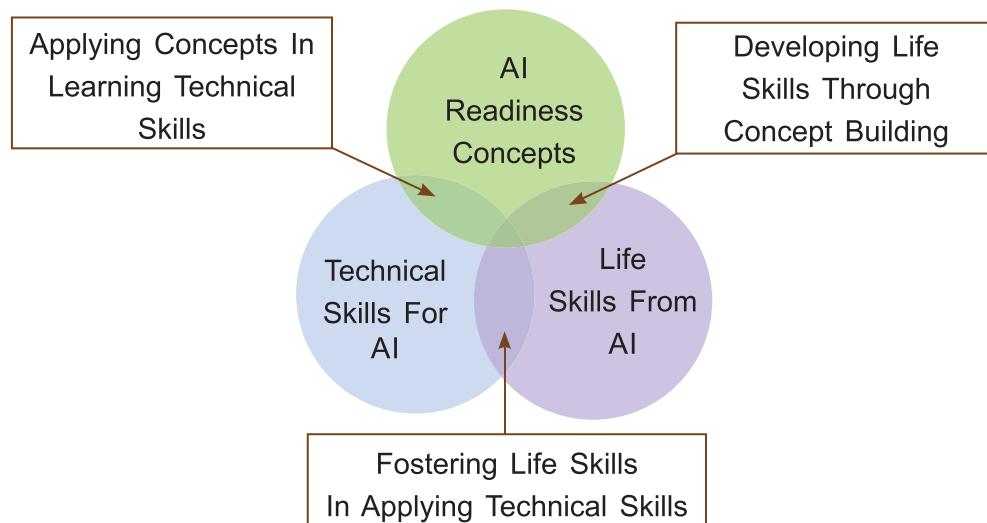
LEARNING OUTCOMES	SESSION / ACTIVITY / PRACTICAL
Students will be able to define Generative AI & classify different kinds.	Recommended Activity: <ul style="list-style-type: none"> Activity: Guess the Real Image vs. the AI-generated image
<ul style="list-style-type: none"> Students will be able to explain how Generative AI works and recognize how it learns. 	Session: <ul style="list-style-type: none"> Introduction to Generative AI Generative AI vs Conventional AI Session: <ul style="list-style-type: none"> Types of Generative AI Examples of Generative AI

<ul style="list-style-type: none"> Applying Generative AI tools to create content. Understanding the ethical considerations of using Generative AI. 	Session: <ul style="list-style-type: none"> Benefits of using Generative AI Limitations of using Generative AI
	Recommended Activities: <ul style="list-style-type: none"> Hands-on Activity: GAN Paint Generative AI tools
	Session: <ul style="list-style-type: none"> Ethical considerations of using Generative AI

UNIT-5 — INTRODUCTION TO PYTHON

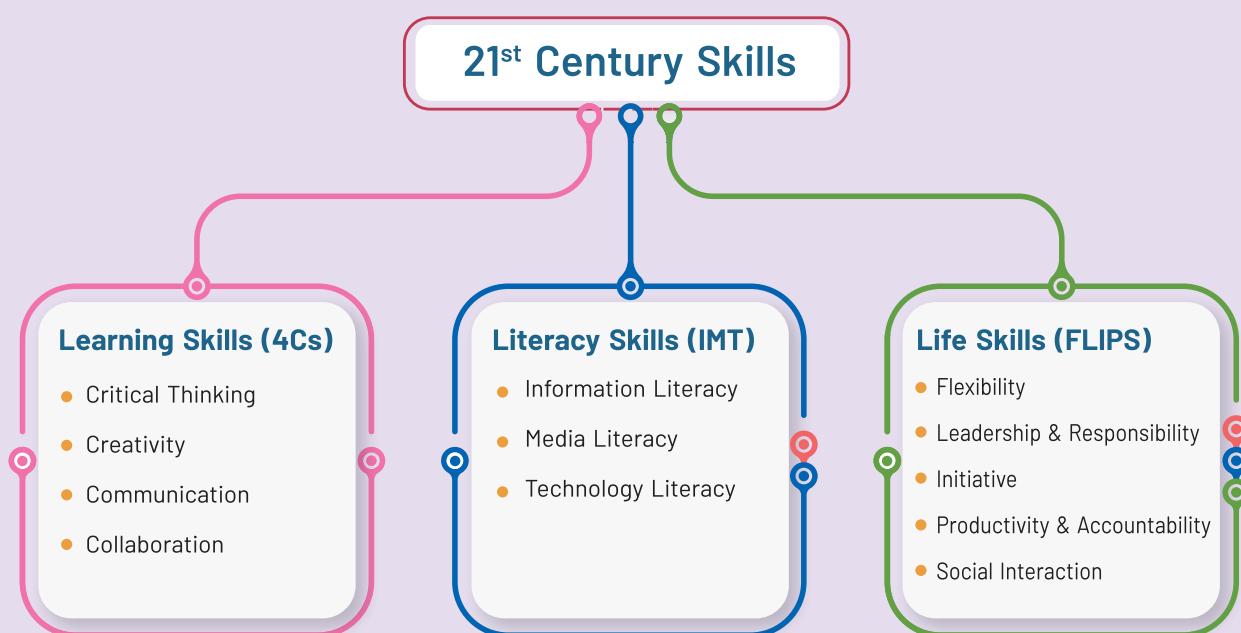
LEARNING OUTCOMES	SESSION / ACTIVITY / PRACTICAL
Learn basic programming skills through gamified platforms.	Recommended Activity: <ul style="list-style-type: none"> Introduction to programming using Online Gaming portals like Code Combat.
Acquire introductory Python programming skills in a very user-friendly format.	Session: <ul style="list-style-type: none"> Introduction to Python language Introducing python programming and its applications <p>Theory + Practical: Python Basics</p> <ul style="list-style-type: none"> Students go through lessons on Python Basics (Variables, Arithmetic Operators, Expressions, Comparison Operators, logical operators, Assignment Operators, Data Types - integer, float, strings, type conversion, using print() and input() functions) Students will try some simple problem-solving exercises on Python Compiler <p>Practical: Flow of control and conditions</p> <ol style="list-style-type: none"> Students go through lessons on conditional and iterative statements (if, for and while) Students will try some basic problem-solving exercises using conditional and iterative statements on Python Compiler. <p>Practical: Python Lists</p> <ol style="list-style-type: none"> Students go through lessons on Python Lists (Simple operations using list) Students will try some basic problem-solving exercises using lists on Python Compiler.

SKILLS TO BE DEVELOPED



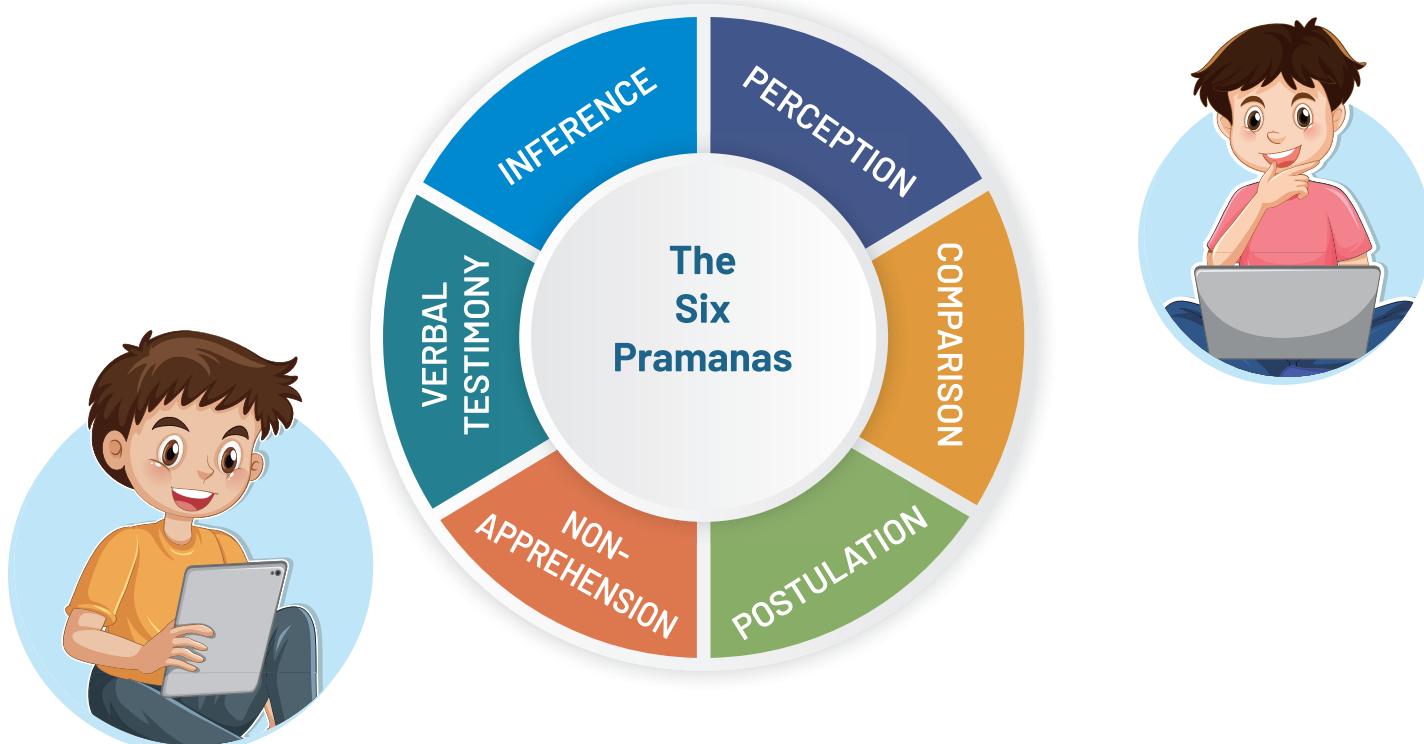
Aligned with NEP 2020 and NCF 2023

Features of NEP 2020



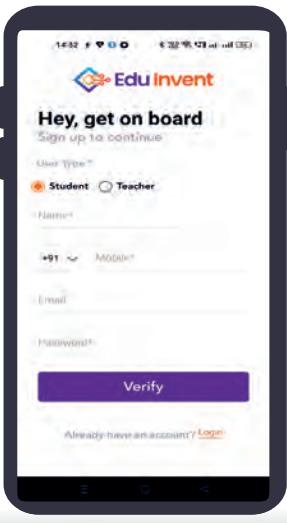
Based on NCF 2023

In this NCF, 'curriculum' means not only what's in books, but also how students learn in school, the school's environment, and more. To make learning better, we need positive changes in all these areas



HOW TO ACCESS DIGITAL CONTENT THROUGH QR CODE

1. For Mobile App Users



STEP 1 Download & Install

- ▶ Go to Google Play Store or Apple App Store.
- ▶ Type 'Edu Invent' in the search bar.
- ▶ Tap 'Install'. The app will take a few moments to download and install.
- ▶ Once installed, tap 'Open' to launch the app.

STEP 2 Registration

- ▶ Open the application.
- ▶ Click 'New User, Register here.'
- ▶ Select 'Teacher/Student' in 'User Type.'
- ▶ Enter your name, email, mobile number and password.
- ▶ Click 'Verify' and Enter the OTP to register.

STEP 3 Access

- ▶ Login on the app.
- ▶ On the dashboard, Click 'Scan QR Code' button.
- ▶ Scan a QR Code printed in the book to explore the learning content associated with the QR Code.

2. For Website Users

Step 1 (Registration)

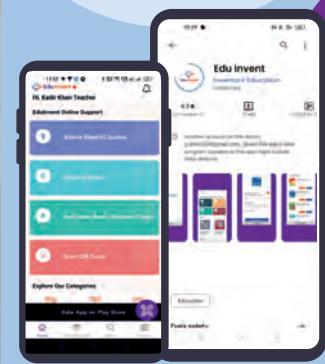
- Visit "digital.inventanteducation.com"
- Click "Register" button available on the top-right.
- Select 'Teacher/Student' in 'User Type'.
- Enter your name, email, mobile number and password.
- Click 'Register', and Enter the OTP to verify your mobile/email.

Step 2 (Access)

- Login on the website.
- Go to the "SCAN & LEARN" section available in the dashboard.
- Enter the Codes printed below the QR Codes to explore the learning content associated with the QR Code.

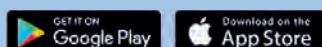
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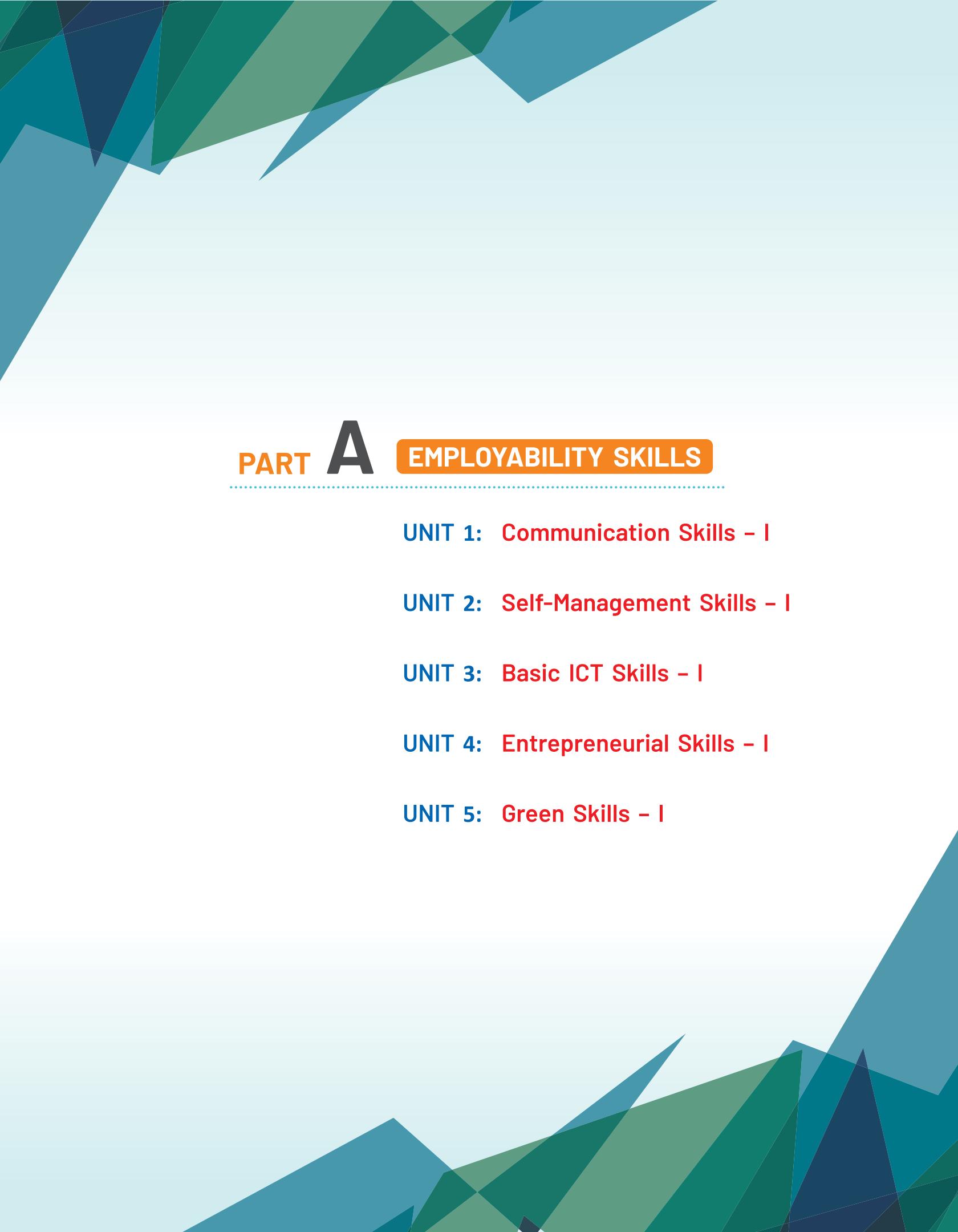
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PART A

EMPLOYABILITY SKILLS

UNIT 1: Communication Skills – I

UNIT 2: Self-Management Skills – I

UNIT 3: Basic ICT Skills – I

UNIT 4: Entrepreneurial Skills – I

UNIT 5: Green Skills – I



Communication Skills-I

Learning Objectives

After completing this unit, you will be able to:

- understand the significance of communication and its various elements
- know about different communication methods
- understand the perspective in communication and different factors affecting it
- learn about 7Cs of effective communication
- understand the importance of Writing skills and various grammatical constructs
 - parts of speech, Noun, Pronoun etc

SESSION 1 INTRODUCTION TO COMMUNICATION AND COMMUNICATION CYCLE

WHY DO WE COMMUNICATE?

It is believed that communication is the lifeline of any relationship. A media critic and theorist defined communication as “**a symbolic process whereby reality is produced, maintained, repaired and transformed.**”

Communication plays a major role in our professional as well as personal life. An effective communication is a key to laying out future goals, delivering results, changing attitudes, and maintaining relationships.

SIGNIFICANCE OF COMMUNICATION

For communication to be meaningful and successful, the sender and receiver should be able to understand each other. It is not just about exchanging information. It is important to exchange information with clarity and empathy, whether it is through speech, signals or writing. This is particularly true for young children who need interactions to learn, grow, create and develop into fine adults. Effective communication fosters trust with others. It boosts confidence. Good communication can educate people, bring them together, and help in team-building.

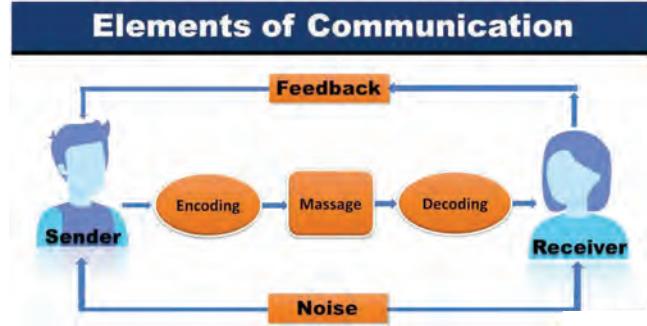
ELEMENTS OF COMMUNICATION

Communication is something we all do every day without giving it much thought. It began many hundreds of years ago and has evolved into writing, listening, speaking, and reading as four components. In order to understand the communication process better, we can break it down into a series of essential components:

- (i) Sender:** The person who initiates the communication.
- (ii) Ideas/information:** The idea that has to be conveyed.



- (iii) **Encoding:** The transformation of a thought or an idea into words or body language to communicate with the receiver.
- (iv) **Channels:** The medium through which information from the sender goes through the receiver.
- (v) **Receiver:** The target person who receives the message.
- (vi) **Decoding:** The process of converting the received message in a way that is understood by the receiver.
- (vii) **Feedback:** When the receiver responds to the sender to give feedback on whether the message sent by the sender was understood in its entirety and intent.



NOISE

Noise could be termed as the potential interruption to a message on the way from the sender to the receiver.

Internal Noise: When someone sends a message and the reader can't understand the words because of slang or a different rhythm.

External Noise: When the source of the noise is outside of one's control, such as when someone is talking in a crowded environment.

Brain Battle

What is known as the response of the receiver to the message?



Knowledge Casket

Human communication was initiated with the origin of speech approximately 100,000 BCE. Symbols were developed about 30,000 years ago. All of those inventions were based on the key concept of the symbol.

The oldest known symbols created for communication were cave paintings, a form of rock art, dating to the Upper Palaeolithic age. The oldest known cave painting is located within Chauvet Cave, dated to around 30,000 BC.

COMMUNICATION PROCESS

- **Communicator/Sender/Source** – The sender has some kind of information. It could be a command, request, question or idea to be presented to others. Makes use of Encoding (use of common language easily understood).
- **Interpreter/Receiver** – In order to understand the information from the sender, the receiver must be able to receive the message and decode or interpret it.
- **Content/Message** – It is the information that the sender wants to relay to the Receiver.
- **Channel/Medium** – It is the means by which a message is transmitted from sender to receiver (e.g., a cell phone).
- **Feedback** – It is given when the message is successfully transmitted, received and understood. The receiver responds to the sender. Feedback may be direct such as written or verbal or in the form of an act or deed.



Fact Locker

The volume of conversational speech is around 60dB. A shout registers around 75dB, whereas whispering is around 35-40dB. To put that into context, anything above 120dB will surpass the human pain threshold. Amazingly, the loudest ever recorded shout by Jill Drake measured 129dB in October 2000!



WAYS OF COMMUNICATION

Effective communication happens when both the sender and the receiver feel satisfied. To be an effective communicator, you need to be clear and complete in what you are trying to express. There are mainly four types of communication: verbal, non-verbal, visual and written. For example, you might use verbal communication while sharing a presentation with a group. You might also use a written communication when applying for a job or sending an email. Let us look at the four categories of communication in more depth.

VERBAL

It is most commonly used during presentations, video conferences, phone calls, meetings and one-to-one conversations. It makes use of language to transfer information through speaking or sign language. It is important as it is very efficient. Following steps are recommended to develop your verbal skills:

- (a) Use a strong, confident voice when speaking or presenting information to a few or group of persons. This helps in your ideas being easily understood.
- (b) Use active listening when conducting a meeting, presentation or even when participating in one-to-one conversations. Listening intently helps in growing as a communicator.
- (c) Avoid Filler words like ‘um’, ‘like’, ‘so’, ‘yeah’, which can prove to be distracting for your listeners. Try replacing it with deep breaths when you are tempted to use them.
- (d) Keep it simple i.e., use easy to understand language.

Advantages of Verbal Communication

There are several advantages associated with verbal communication. Some of them are:

- Faster mode of communication
- Obtain prompt feedback
- It helps in making better relationships
- Simplicity of preparation
- Cost-effective
- The most convenient way
- Ease of preparation
- Effective for convincing and persuading

Disadvantages of Verbal Communication

Some of the disadvantages of the verbal communication are:

- The most common disadvantage of verbal communication is the regional difference between the sender and receiver. These obstacles may be caused by the fact that their dialect and language are different.
- The size of the audience is also a barrier to verbal communication because the speaker can only address a few people at a time.
- Regional differences are the most significant barrier.
- A large audience also creates communication obstacles.
- Receivers tend to forget what is said to them.
- Everyone cannot listen at the same rate.

Public Speaking

Public speaking has to be one of the most important professional skills and is used in almost every business. However, it is also a common fear among people. The good news is that anyone can learn to talk comfortably and effectively in front of a group. With a little practice, you can improve your public speaking skills. The 3Ps method (Prepare, Practice, Perform) can help you overcome your anxieties and become a confident and powerful speaker.



Prepare	Practice	Perform
Organise Your Content in Advance	Work on being your best self every day	Concentrate on your audience now
Good speeches don't just happen in a day. They are made when someone takes the time to organise good content that is important to the needs of their audience in a way that makes sense. It takes talent and effort to create a powerful speech, but you can learn how to make it impactful.	A well-written speech needs to be delivered effectively, and there's only one way to do that: practice, practice, and practice.	Once you've prepared a well-thought-out speech and practiced it until it's comfortable, present it to your audience as the gift that it is. It's normal to feel awkward or even scared when we speak in public. But it's much more fun to stop thinking about yourself and just talk to the people present. If you are afraid, take a few deep breaths. Think about what you've written down, and then speak with confidence. Every step of the way, you can improve how you tackle public speaking.

NON-VERBAL

Non-Verbal communication helps us understand the thoughts and feelings of our listeners such as, crossed arms or hunched shoulders could be a sign of nervousness or anxiety, while both feet on the floor and arms by their sides or on the table could display their positivity and being open to information. Steps you can take to develop your non-verbal communication skills:

- (a) Develop self-awareness on how your emotions affect your body to gain mastery over your external presentation. Try and identify the various emotions felt throughout the day in relation to your body, such as if you are feeling anxious you may feel a tightness in your stomach.
- (b) Make non-verbal communication intentional. Make efforts to display positive or negative body language as and when required, e.g., use a furrowed brow if you are confused or anxious. Use body language along with verbal communication, such as asking follow-up questions or asking the audience for feedback.



Types of Non-Verbal Communication

There are many different types of non-verbal communication. They include:

Body language

Body language has its own way to convey messages. It is the use of physical behaviour, facial emotions, and mannerisms to communicate non-verbally. Non-verbal behaviours can allow people to be at ease, build trust, and connect with others through nonverbal actions. But they can also make things confusing for others, cause tension, and even make the surroundings uncomfortable. For instance, someone might cross their arms when they are scared or angry. Standing tall and straight can send the message of self-assurance and authority, whereas lowering the head or dropping the shoulders conveys insecurity or a lack of confidence.



Gestures

Gestures describe movements of parts of the body, such as hands or heads, to convey a thought or meaning. This includes waving our hands when speaking, pointing, and raising hands. For example, raising your hand



could be seen as asking a question. Biting nails reveals anxiety and nervousness. Facial expressions: Facial expression is one of the most common types of non-verbal communication. Using the eyebrows, mouth, eyes, and facial muscles to convey can be effectively used to communicate both emotion and information.

Touch

We can also use touch as a form of communication. Most commonly, it is used to express support or comfort. For example, handshakes are used to demonstrate affection and reassurance. A pat on the back demonstrates appreciation. Shaking, pushing, and squeezing can express anger. Hugging and Patting can communicate love.



Eye contact

Maintaining eye contact is crucial for maintaining conversations since it communicates a person's empathy, care, and level of involvement.

Body movement and Posture

Your posture and body movement include aspects such as sitting, walking, standing, bearing, stance, and even small movements like bowing down to greet a person, kneeling down to pray, etc.

Para Language

As a non-verbal communication method, paralanguage makes use of voice, intonation, pitch, pauses, volume, stress, gestures, and signs. One's voice can communicate excitement, certainty, worry, as well as the speaker's mental state and temperament.

Advantages of Non-Verbal Communication

- Expressing feelings, emotions, and intentions without using words
- Addressing Cultural Differences
- Communicating ideas more clearly
- Enhancing the clarity of conveying ideas and providing a non-violent method of communication can lead to improvements in verbal communication.

Disadvantages of Non-Verbal Communication

- Possibility of being misread and misunderstood.
- Ambiguity
- Lack of explanation of the message

TECHVICE

When we use nonverbal communication, we should always keep these things in mind:

- When you're talking to people, use a variety of appropriate facial expressions.
- When you talk in class, during a presentation, a conversation, or anything else, try to make eye contact to show that you are confident and ready to connect.



- Change your vocal pattern a few times during the talk, and try not to use a vocal range that is too repetitive.
- Holding your hands in front of your chest or behind your back is a defense move that you should avoid.
- When you're giving a talk, you should always stand up straight and move around.

VISUAL COMMUNICATION

We use visuals to help us during presentations to provide helpful context along with written or verbal communication. In this we use photographs, art, drawings, sketches, charts and graphs to convey information. Here are a few recommended steps to develop your visual connection skills:

- (a) Adding visuals can be distracting, making concepts confusing. It would be useful to ask others for feedback if you are considering sharing a visual aid in your presentation or email.
- (b) Be discreet in the use of visuals. They should not be violent, offensive or insensitive. Make sure to use visuals or graphics which can be easily understood and are relevant to your presentation.

Advantages of Visual Communication

- Visual communication helps you understand complex concepts quickly and easily, grabs attention,
- and builds relationships since it is more effective than words alone.
- Visual aids like charts, maps, etc. can also help you understand complex ideas and data.
- Visuals are an excellent way to recall information because they are more memorable than text. It makes it easier to compare different concepts and ideas.

Disadvantages of Visual Communication

- The expense of adopting visual communication techniques is more expensive.
- Sometimes, it becomes more challenging to interpret the significance of visual representations.
- Sometimes this coverage takes more time. In an oral conversation, thoughts are exchanged quickly.

WRITTEN COMMUNICATION

It is used mainly to share information through books, pamphlets, blogs, letters, memos, etc. Emails and chats are the common forms of communication in the work place. It is very helpful as it provides a record of information for reference. The following steps are recommended for the development of your written communication skills:

- (a) Ensure your written communication is as simple and clear as possible to be understood easily by the audience.
- (b) Avoid using certain tones while writing, e.g., a joke, sarcasm or excitement could be understood differently depending on the audience. It is better to play safe and use plain and simple language.
- (c) Review your written communication by taking out time to read your emails, memos or letters to identify mistakes or a chance to say things differently.

Advantages of Written Communication

- The written documents are easy to preserve.
- The communicated message can be clearly and thoroughly understood.
- Written communication records serve as a permanent record.

TECHVICE

Communication is much more of an art than a science.



Any complex matter or piece of information can be represented easily and more elegantly.

Disadvantages of Written Communication

- Written communication is more expensive than other forms of communication, and it is not only expensive but also takes a lot of time.
- Confidentiality of information is not always possible in written communication.



Fact Locker

Approximately 70% of our time is spent communicating with others.

If the message's destination is located far away and there is any doubt that has to be clarified, the response is not immediate, which ultimately causes a delay in making subsequent decisions.



Activity

Critical Thinking

Keep track of your daily activities and record the amount of approximate time you spend talking to other people. Also specify a detailed analysis of the time allocation for each communication channel utilised.

Reading _____



Writing _____



Talking _____



Listening _____



NOW I UNDERSTAND

- Communication plays a major role in our professional as well as personal life. An effective communication is key to laying out future goals, delivering results, changing attitudes, and maintaining relationships.
- For communication to be meaningful and successful, the sender and receiver should be able to understand each other.
- Elements of Communication: Sender, Ideas/information, Encoding, Channels, Receiver, Decoding, and Feedback.
- Verbal Communication is also known as Oral Communication in which we use sound and words to express our thoughts and feelings. It takes place in the form of discussions, speeches, and conversations.
- Non-Verbal communication helps us understand the thoughts and feelings of our listeners such as, crossed arms or hunched shoulders could be a sign of nervousness or anxiety, while both feet on the floor and arms by their sides or on the table could display their positivity and being open to information.
- We use visuals to help us during presentations to provide helpful context along with written or verbal communication. In this we use photographs, art, drawings, sketches, charts and graphs to convey information.
- Written communication is used mainly to share information through books, pamphlets, blogs, letters, memos, etc. Emails and chats are the common form of communication in the work place.
- It is very helpful as it provides a record of information for reference.
- Public speaking has to be one of the most important professional skills and is used in almost every business.

TRACK YOUR PROGRESS

I. Choose the Correct Answer:

ANSWERS

1. (b) 2. (d) 3. (d) 4. (d) 5. (a)

II. Fill in the Blanks:

1. _____ is the person who initiates the communication.
 2. Noise could be termed as the _____ to a message on the way from the sender to the receiver.
 3. _____ is given when the message is successfully transmitted, received and understood.
 4. 3Ps of Public Speaking are Prepare, Practice and _____. [CBSE 2021-2022]
 5. _____ type of communication helps you understand complex concepts quickly and easily, grabs attention, and builds relationships.

ANSWERS

- #### **1. Sender 2. potential interruption 3. Feedback 4. Perform 5. Visual**

III. State True or False:

1. It is crucial to have great communication at work.
 2. Speaking is shouting while making a presentation.
 3. Are communication skills a strategy for overcoming communication barriers?
 4. Solving difficulties together in conversation is an excellent method to communicate.
 5. Communication can be viewed from different point of views.

ANSWERS

1. True 2. False 3. True 4. True 5. True

IV. Answer the Following Questions:

- ### **1. What is the purpose of communication?**

Ans: Communication is used to tell people about things, let them say how they feel, persuade people to do what's expected of them, and build relationships.



- 2.** What are the three characteristics of verbal communication?

Ans: The three characteristics of verbal communication are as follows:

- consists of spoken or written words. – gives accurate and thorough information.
- enables quick and direct feedback.

- 3.** What is the similarity between verbal communication and non-verbal communication?

Ans: In order to fully improve the message, both verbal and nonverbal communication have powerful ways of communicating emotions, feelings, and attitudes.

- 4.** How many different kinds of communication are there?

Ans: The following are the three primary categories of communication:

- | | |
|------------------------|----------------------------|
| – Verbal communication | – Non-verbal communication |
| – Visual communication | – Written communication |

V. Competency/Application Based Question:

Critical Thinking

Aadya just moved from a village to the city and started a new school, but he is having trouble getting along with his new friends. He talks with a lot of slang and local words. What do you think is wrong with Aadya?

SESSION 2 PERSPECTIVES IN COMMUNICATION

Communication is a discipline that is important and is viewed as something that ‘just happens’. However, becoming more aware of how you communicate can be informative and have many positive effects. Rather than keeping it at the back of our mind, it needs to be at the forefront. In order to communicate effectively it is necessary to consider how your own perspective is similar to or different from the perspective of the person you are conversing with. It also means that your perspective may differ depending on the person, the situation or the topic you are communicating about.

FACTORS AFFECTING PERSPECTIVES IN COMMUNICATION

- 1. Visual:** The ability to see and interpret the visual information that surrounds us, e.g., solving of puzzles is based on visual interpretation by our brain.
- 2. Language:** There is difficulty faced in communicating with people who speak a different language or have different accents. Usage of wrong words at wrong places may lead to misinterpretation and not solve the purpose of communication.
- 3. Past Experiences:** Our past experiences can influence our perspectives. Poor grades or scores in a test may lead to loss of confidence and poor performance by the student in the next test.
- 4. Prejudices:** Preconceptions or prejudices occur when you take an isolated experience with someone and then act as if all encounters with persons of same type or having similar characteristics will result in the same experience. It may be favourable or unfavourable towards that person or thing.
- 5. Feelings:** Your communication with the other person can be influenced in two ways. The first refers to the way that you feel on a given day; if you are feeling good, you may communicate in a favourable way and if you feel ill or low, you may communicate in a different way. The second aspect refers to how you feel about a given person.
- 6. Environment/Surroundings:** We all communicate differently in different settings. The way you converse with your friends differs from the way you converse with a teacher or parents. While talking to a stranger your tone would be formal as compared to people you know well.
- 7. Culture:** Different cultural beliefs prevent you from communicating effectively as you may not understand their cultural symbols, signs or ways leading to misinterpretation of messages.

EFFECTIVE COMMUNICATION

We communicate regularly on a daily basis, either in person or via digital platforms. But are we communicating in a manner that our audience fully understands and expresses our emotions as we intended? Effective communication requires us to be clear and complete in whatever we are trying to express. While the effectiveness of communication is difficult to measure, its impact cannot be denied. Companies led by effective communicators provide higher returns to shareholders as compared with companies with less effective communicators. If you consider your audience, practice active listening, and choose the right medium or environment, you are well on your way to exercising effective communication.

THE 7 Cs OF EFFECTIVE COMMUNICATION

The one who is aware of and makes use of these 7 Cs in a sensible manner can become an effective communicator.

1. **Clear:** Clarity is when you transfer accurate and easily understandable messages to the receiver. Be clear about your goals. Let the receiver know what your objective is for the interaction. The content of your message should be simple and clear. Avoid using difficult phrases that make comprehension difficult.
2. **Concrete:** A concrete message denotes your message to be specific, meaningful and focused. Avoid vague and puzzling messages. Include factual evidence and figures to add to the reliability of your message.
3. **Complete:** Give full information about something rather than in bits and pieces. When delegating a task, give detailed information or instructions to carry out the task at hand.
4. **Concise:** Do not get lost in the flow of the conversation. Concise or brief, well delivered messages have a greater impact on the listeners and are also more memorable. Avoid long sentences or paragraphs and focus on short sentences to convey your messages.
5. **Courteous:** While communicating, consider the feelings and points of view of the receiver. It will naturally scale up the value of communication. Just using polite phrases like ‘thank you’, ‘sorry’ ‘please’ and ‘excuse me’ are not enough. It also means to be honest, respectful and empathetic. Do not make any sarcastic or aggressive remark but convey your message in an ethically polite way.
6. **Coherent:** Ensure that the content of the message sticks to the topic. Follow a sequence that makes sense to the receiver.
7. **Correct:** The value and genuineness of your words lies in its correctness or legitimacy as it reflects directly on your personality. It is better to keep quiet rather than talk about something that you are not sure about. Use of correct words, sentences and grammar are some of the aspects of correctness. If your audience spots any errors or blunders in your speech they are bound to be distracted and your credibility would also be affected.

BARRIER TO EFFECTIVE COMMUNICATION

A skilled communicator must be aware of the different types of barriers to effective communication and work to overcome them. Through active listening, reflection, and other techniques, these barriers to effective communication can be removed. The communicator must get feedback from the audience to check if the message was understood in its true sense. Some of the common barriers to effective communication are listed below.

Using Jargon/Slang

It may be difficult to understand if unfamiliar terms or technical words are excessively used in a conversation.

Lack of Attention or Interest

The message will be irrelevant to the receiver if there are distractions around, such as others speaking at the same time.



Difference in perception

If two people see things differently or have opposing opinions, then their viewpoints might come in the way of interpreting the message correctly.

Physical Impairments

Communication will not be effective if either the speaker or the listener has speech or hearing impairments. The message will be distorted.

Emotional Barriers

It is challenging for the speaker or the receiver to participate effectively in the communication exchange when the topic is sensitive. Sometimes people are not comfortable expressing themselves, which causes their words to not reflect the true meaning of what they want to convey. Politics, religion, physical or mental disability, racism, and other unpopular viewpoints may be taboo or off-limits to some people.

The Difference in Culture

Social interactions have distinct expectations or norms in different cultures. For example, the idea of space exists in some cultures and social contexts but not in others. These cultural differences could make it difficult to communicate effectively.

Communication Barriers in Physical Form

There are many more components to a face-to-face conversation than just words. The entire communication process also takes into account gestures, body language, and facial expressions, among other things. Some messages can be missed if you can't see the recipient. Technology-based methods of communication, such as text messages and phone calls, don't have the same impact as face-to-face interactions.

Language Distinction

It may be challenging to understand the message sent due to regional dialect differences or strange accents.

Prejudices

Most individuals have predetermined ideas about a variety of topics, so they simply pay attention to what they want to hear instead of what is being stated. These erroneous presumptions and stereotypes cause communication hurdles.

TRACK YOUR PROGRESS

I. Choose the Correct Answer:

ANSWERS

1. (b) 2. (c) 3. (c) 4. (c)|



II. Answer the Following Questions:

1. In short, describe the 7Cs of communication.

Ans. The 7Cs of communication are:

Clear: It's important that the information is delivered in a clear way.

Concise: Say only what you need to say and use simple words.

Concrete: Use the exact words and facts.

Correct: Use the correct language and spelling.

Coherent: Words should make sense and be related to the main idea.

Complete: Make sure the message has all the information it needs.

Courteous: Be respectful, courteous, and honest.

2. Explain any two possible barriers to effective communication.

Ans. Some of the common barriers to effective communication are listed below.

Using Jargon/Slang: It may be difficult to understand if unfamiliar terms or technical words are excessively used in a conversation.

Lack of Attention or Interest: The message will be irrelevant to the receiver if there are distractions around, such as others speaking at the same time.

Critical Thinking

III. Competency/Application Based Question:

Shweta is preparing for Inter-School Debate Competition. Advise her about the possible barriers to effective communication and how can they be avoided.

SESSION 3 ENGLISH LANGUAGE SKILLS

One of the most important skills that schools teach is writing. The learning of the English language starts with the alphabet and numbers and moves on to grammar, words, making sentences, and so on. It goes without saying that every student should learn how to write. People in any job need to be able to use this way of communicating to be successful. Students can do well in school if they learn how to write in English. This form of contact that has spread around the world is also a useful job skill that everyone needs to have. No matter what area someone works in, they have to be able to write clearly to share their ideas.

WRITING SKILLS

Writing is the fourth of the four language skills, which are:

1. Listening
2. Speaking
3. Reading
4. Writing

Writing has now become the first way of communication with others. Most jobs require you to communicate in writing through email, formal letters, notes, text messages or online messaging. Written communication can be an important part of both your professional and personal life. Having the right communication skill can help you succeed in school or college. For this, a good command over the language is essential as it helps in effective interactions. What starts with the introduction of the English language from alphabets and numbers advances to sentence formation, grammar, vocabulary etc. The academic curriculum in today's

time is focused on encouraging students to express their learning and imply it practically. It is needless to say that writing skills should be acquired by each student. Let us study the various aspects which are important to have writing skills.

Parts of Speech

A sentence is made up of words that play different parts in the framework of the sentence. Words can broadly be classified on the basis of the part they play or the work they do in a sentence. These classes are called the Parts of Speech and are eight in number. Understanding the different parts of speech can help you analyse how words function in a sentence and improve your writing.

Noun

A noun is the name of a person, place, thing, or sometimes a quality or feeling, etc. It is called a naming word. Example: Reema, Kolkata, chair, honesty. Nouns can act as the subject of a sentence (i.e., the person or thing performing the action) or as the object of a verb (i.e., the person or thing affected by the action). There are numerous types of nouns, including common nouns (used to refer to non-specific people, concepts, places or things, e.g., garden, elephant, work, chair, police officer), Proper nouns (used to refer to specific people, concepts, places, or things, e.g., Raj, New Delhi, St. Patrick, Christians, History, Ganges), Collective nouns (used to refer to a group of people or things, e.g class, team, herd, army). Other types of nouns include countable and uncountable nouns, concrete nouns, abstract nouns, and gerunds. Proper nouns are always capitalised, e.g., New York, New Delhi. Common nouns are capitalised when they are used **at the start of a sentence**, e.g Boys were playing basketball in the field.

Pronoun

A pronoun is a word used in place of a noun (e.g., he, she, they, it, my, our, etc.). Pronouns typically refer to an antecedent (a previously mentioned noun) and must always demonstrate correct pronoun-antecedent agreement. Like nouns, pronouns can refer to people, places, concepts, and things. There are numerous types of pronouns, including personal pronouns (used in place of the proper name of a person), demonstrative pronouns (used to refer to specific things and indicate their relative position), and interrogative pronouns (used to introduce questions about things, people, and ownership).

Examples: Pronouns in a sentence

1. I do not know him .	2. That is a boring book.
3. Who is dancing?	4. She has many chocolates in her pocket.

Verbs

It is a word that describes an action done by a noun or a pronoun (e.g., jump, play, eat, etc) or state of being (e.g. are sleeping, shall go, etc.). Verbs express what the subject of the sentence is doing. Every complete sentence must contain at least one verb. Verbs can change their form depending on the subject (e.g., first person singular), tense (e.g., simple past tense), mood (e.g., interrogative), and voice (e.g., passive voice). Regular verbs are verbs whose simple past and past participles are formed by adding -ed to the end of the word or only -d if the word ends in -e. Irregular verbs are verbs whose simple past and past participles are formed in some other way.

Examples: regular and irregular verbs

1. Will you check if this book is available? I have already checked a number of times.	2. I heard that you play the guitar. Yes, I played in the choir for many years.
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Other types of verbs include auxiliary verbs, linking verbs, modal verbs, and phrasal verbs.

Adjectives

An adjective is a word that describes a noun or a pronoun (e.g., big, yellow, high, slow, polite, rude etc.). Adjectives can be attributive, i.e., appearing before a noun (e.g., a red cap), or predicative, i.e., appearing after the noun with the use of a linking verb (e.g., the cap is red). Adjectives can also have a comparative function by comparing two or more things. Superlative adjectives describe something as having the most or least of a specific characteristic.

Examples: Adjectives in sentences

1. The horse is bigger than a dog.	2. He is the naughtiest boy I know.
3. My father is a wonderful man.	4. Delhi is a large city.

Other types of adjectives include coordinate adjectives, participial adjectives, and denominal adjectives.

Adverbs

An adverb is a word that can modify a verb, adjective, or sentence. It can be a word or group of words that adds meaning to the above parts of speech. Adverbs are often formed by adding ‘ly’ to the end of an adjective (e.g., slow becomes slowly), although not all adverbs have this ending and not all words with this ending are adverbs. There are numerous types of adverbs, including adverbs of manner (used to describe how something occurs), adverbs of degree (used to indicate extent or degree), and adverbs of place (used to describe the location of an action or event).

Examples: Adverbs in a sentence

1. Shaan acted smartly .	2. Mehul writes quite quickly.
3. Let us go inside .	4. Virat played brilliantly .

Other types of adverbs include adverbs of frequency, adverbs of purpose, focusing adverbs, and adverbial phrases.

Prepositions

A preposition is a word (e.g., ‘at’) or group of words (e.g., ‘on the top’) placed before a noun or pronoun to show their relationship to the other parts of the sentence. They can be used to indicate aspects such as time, place, and direction. Examples: at, in, over, under, between, etc.

Examples: Prepositions in sentences

1. My guest is coming for dinner at 7p.m.	2. I kept my bag on the chair.
3. Harshit ran to the cafeteria.	4. The bird flew above the roof.

It is important to understand that a single preposition can often describe many different relationships, depending on how it is used.

For example, ‘in’ can indicate time (in January), location (in the kitchen), purpose (in reply), and so on.

Conjunction

A conjunction is a word used to connect different parts of a sentence (e.g., words, phrases, or clauses). Examples include so, but, as well as both, because, etc. The main types of conjunctions are coordinating conjunctions (used to connect items that are grammatically equal), subordinating conjunctions (used to introduce a dependent clause), and correlative conjunctions (used in pairs to join grammatically equal parts of a sentence).



Examples: Conjunctions in a sentence

1. We can either go swimming in the river **or** cycling in the park.
2. You can choose which dish you want to eat **because** I chose it last time.
3. My father likes to eat bread **and** butter for breakfast.

Interjections

An interjection is a word or phrase used to express a feeling, give a command, or greet someone (e.g., Oh!, Alas!, Hurrah!, Bravo! Hey! etc). Interjections are a part of speech that is grammatically independent. They can be excluded from a sentence without affecting its meaning. Types of interjections include cognitive interjections (used to indicate thoughts), emotional interjections (used to indicate feelings or reactions), volitional interjections (used to indicate a demand or request), and greeting and parting words (used at the beginning and end of a conversation).

Examples: Interjections in a sentence

1. Hello! How are you today?	2. Oh God! What has she done.
3. Alas! We missed a golden chance.	4. Ouch! I hurt my ankle.

Traditionally, English grammar has been classified into eight parts of speech. However, grammarians have often divided them into classes. Other commonly mentioned parts of a speech include determiners and articles.

Articles

An article is a word that modifies a noun by indicating whether it is specific or general (a, an, the). Definite article ‘The’ can be used with all countable and uncountable nouns. (e.g., the door, the energy, the hills, the laughter) The indefinite articles ‘a’ and ‘an’ refer to general or unspecific nouns. The indefinite articles can be used with singular countable nouns (e.g., a poster, an elephant).

Examples: Definite and indefinite articles in a sentence

1. The Ganges is a sacred river.	2. I live just outside the city.
3. There is an annual function next month.	4. There is a play this weekend.
5. I saw an attractive scarf in the shop.	

Determiners

A Determiner is a word that describes a noun by indicating quantity, possession, possession or a relative position. The words ‘a’, ‘the’, ‘my’, ‘this’, ‘some’, ‘many’, etc. are called determiners. Common types of determiners include demonstrative determiners (used to indicate the relative position of a noun), possessive determiners (used to describe ownership), and quantifiers (used to indicate the quantity of a noun).

Examples of determiners in a sentence

1. **This** sofa is more comfortable than that one.
2. **My** sister is selling her old scooter.
3. **Many** college-going students have part-time jobs.



Other types of determiners include distributive determiners, determiners of difference, and determiners of numbers.

Note: In traditional parts of speech, articles and determiners may be classified as adjectives or pronouns.

Basic of Punctuation

The tool that helps us organise our thoughts and make it simpler to review and share our ideas is punctuation. Period, comma, apostrophe, quotation, question mark, exclamation, etc. are all acceptable forms of punctuation in English.

The usage of some punctuation is explained in the section below.

Capitalise the first letter of the first word in a sentence.

Capital letters are used for:

Proper nouns: Narendra Modi, Professor, Indira Gandhi National Open University.

Names of holidays: Deepawali, Christmas Day, Republic Day

Geographical names: London, New Delhi

Public thoroughfares: Princes Street

Important events: Graduation Day

Journal titles: International Journal of Information Management

The first letter of book titles: The Brain That Changes Itself

Days of the week, months: January, Sunday

End a sentence with a period, question mark, exclamation point, or quotation mark.

Full Stop or Period (.)

The period, which is also called a full stop in British English, is probably the simplest of the punctuation marks. Generally, you can break up the sentences with a full stop at the end of a complete and reasonable thought that makes sense to you. We also use it to from an abbreviation. For Example: Dr. for Doctor, Mr. for Mister.

Question Mark (?)

A question mark (?) is placed at the end of a sentence which is a direct question. Here are some examples: What is the capital of Wales? What is your name?

Apostrophe ('')

An apostrophe is a punctuation mark that shows possession, the omission of letters from a word, or the plural form of a letter or number. The apostrophe looks like a comma, but it doesn't go on the line at the bottom of the letters in a word. Instead, it sits between two letters at the top, with the curl facing left.

Some of the examples are:

Bill's bike is on the front porch. (Possession)

The class' grades were lower than the first test. (Plural Possession)

I don't go out when the temperature is below 20 degrees. (Contraction/Omission)

The 1960's were a time of change in the U.S. (Plural of Letters or Figures)

Comma

A period ends a line, but a comma indicates a smaller break. A comma is a punctuation mark that separates words, clauses, or thoughts in a sentence. Some writers think of comma as a soft pause. Some of the examples are:



It's raining, so let's grab our umbrellas.

"Let's climb higher," said Vani.

I need to buy eggs, milk, bread, laundry detergent, and crackers.

Aadya said, "I'm ten years old."

PHRASE

A phrase is a group of words that work together in a sentence but do not contain a subject or a verb. Often, phrases are used for descriptions of people, things, or events.

For example: Filled with joy, on the horizon

WHAT IS A SENTENCE?

A sentence is a group of words that make complete sense. The words in a sentence have to be placed in the right sequence in order to make sense. A sentence always begins with a capital letter and ends in a full stop if it is a statement, a question mark (?) if it is a question and an exclamation mark (!) if it is an exclamatory sentence.

A sentence has a subject and a predicate.

HOW DO YOU ARRANGE A SENTENCE?

The subject, verb, objects, phrases, punctuation, and other parts of a sentence are put in a certain order. This is called sentence structure. It talks a lot about independent and dependent clauses and how they work together, as well as the right way to use language and where to put words and phrases next to the things they change.

Kinds of sentences

1. Assertive/Declarative sentences: These are sentences that say something.

For Example: The earth revolves around the sun.

2. Interrogative sentences or Questions: These are the sentences that ask questions.

For Example: Who won the trophy?

3. Imperative sentences: These are the sentences that express a command, a request, or advice.

For Example: Please, give me some water.

4. Exclamatory sentences: These are the sentences that express a strong feeling or excitement.

For Example: What a petty baby!

PARAGRAPH WRITING

A paragraph is a piece of writing that usually discusses a central idea, typically with more than one sentence. It is the building block of long pieces of writing. There should be at least one line in a paragraph, all of which should relate to the same topic. It's important to use paragraphs to organise long pieces of writing like books, papers, and even emails. Every paragraph should focus on a different subject.

Let us now walk you through the process of writing strong paragraphs.

Step 1: Figure out the topic of the paragraph

Firstly, you need to know what the main idea is that will organise this paragraph. You should already have a clear understanding of what each paragraph will attempt to accomplish if you have created a plan or outline for your paper's general structure.



Step 2: Show why the paragraph is relevant

Write one sentence that talks about the topic, which will feature in the rest of the paragraph. A good topic sentence should always contain a topic and a controlling idea.

Step 3: Support/Explanation

You can now provide examples and facts to back up your claim. Here, ‘evidence’ refers to more than just actual data; it can take many different forms, depending on your discipline, subject, and methodology. In academic writing, common types of evidence include:

- quotes taken from books, speeches, and other primary sources
- summaries, quotations, or paraphrases from secondary sources that offer data or analysis in support of your claim
- data, either qualitative or quantitative, that you have obtained or discovered through a previous study
- qualitative or quantitative data that you have gathered or found in existing research

Step 4: Explain or interpret the evidence

You must now demonstrate to the reader how this evidence supports your claim. The type of evidence you employ will determine how you proceed.

- If you used a paragraph as a quote, explain what you meant by it
- If you used a statistic, explain to the reader what it means for your point of view
- If you cited details from a secondary source, explain how they further the paragraph’s main point
- If you referred to information from a secondary source, show how it developed the idea of the paragraph

Conclude the paragraph

Finally, wrap up the paragraph by returning to your main point and outlining the overall effects of the evidence you’ve examined before concluding the paragraph.

Word Finder

Writing Skills – the skills you use to write effectively

Parts of Speech – A part of speech (also called a word class) is a category that describes the role a word plays in a sentence.



NOW I UNDERSTAND

1. Writing has become at the first way of communication with others.
2. There are eight parts of speech in the English language: noun, pronoun, verb, adjective, adverb, preposition, conjunction, and interjection.
3. The tool that helps us organise our thoughts and make it simpler to review and share our ideas is punctuation. Period, comma, apostrophe, quotation, question mark, exclamation, etc. are all acceptable forms of punctuation in English.
4. A sentence is a group of words that make complete sense. The words in a sentence have to be placed in the right sequence in order make sense.
5. A paragraph is a piece of writing that usually discusses a central idea, typically with more than one sentence.

TRACK YOUR PROGRESS

I. Punctuate the sentence given below.

- (a) my son Raja is a good speaker
- (b) can Kamla dance tonight
- (c) wow what a beautiful scene
- (d) we studied english maths and science today

II. After reading the information, compose a paragraph.

One must have hobbies like reading, drawing, painting, collecting stamps or coins. Sport activities like swimming, dancing, singing, writing are also healthy engagements.

- (a) What is your hobby?
- (b) How does it help you?

Write a paragraph of 5 to 6 lines on your favourite hobby and also state how it is important to you.

III. Look at the following group of words. put a tick (✓) against those which make sense and (✗) against those which do not.

- (a) The head an organisation Mr. Prasad was off ()
- (b) entered visited the room into a. ()
- (c) Mr. Prasad wanted to know who the visitor was. ()
- (d) visitor Mr. Prasad told uncle his was he the that. ()

IV. Unscramble the following jumble word to form proper sentences. Don't forget to add capitals and appropriate punctuation marks when ever necessary.

- (a) Angry/don't/ with/ get/ me/ not /for/ calling/ up /you
- (b) telephone/my /was /working /not

V. Fill the gaps with necessary articles if required:

- (a) I saw _____ python in the zoo.
- (b) That's _____ interesting book.
- (c) I am talking about _____ book I lent you.
- (d) _____ road was being crossed by _____ man.
- (e) He is a member of _____ separate philosophical movement.

ANALYSE YOUR KNOWLEDGE

I. Choose the Correct Answer:

1. The word 'a', 'an', and 'the' are known as _____. They are generally used before nouns.
[CBSE Sample Paper Term I, 2022]
 - (a) Conjunctions
 - (b) Articles
 - (c) Prepositions
 - (d) Pronouns



2. Which of these sentences are punctuated correctly?

(a) I am Hungry. (b) Divya and sunil are reading.
(c) The bucket is Full of water. (d) She lives in Delhi

3. Why do we send emails? [NCERT]

(a) To reach on time (b) To share document and files.
(c) To talk to each other (d) To meet each other

4. In which communication style: body language, gestures, facial expressions are used to convey information to others? [CBSE Sample Paper Term I, 2022]

(a) Verbal (b) Non-Verbal (c) Written (d) Expression-less

5. Who is the person introducing a thought?

(a) Receiver (b) Communicator (c) Encoder (d) Sender

II. Fill in the Blanks:

1. The _____ is the one who decodes or interprets the message.
 2. An _____ sentence gives a command, makes a request, or expresses a wish.
 3. Without _____, the sender cannot confirm if the receiver has interpreted the message correctly.
 4. _____ communication is the formal form of communication.
 5. _____ form of communication is commonly used to express support or comfort.

III. Answer the Following Questions:

1. Define the term Communication.
 2. Why do we need to use Punctuation Marks?
 3. List some of the important elements of effective communication.
 4. What is the importance of feedback in the communication process?
 5. What is the purpose of feedback? [CBSE Sample Paper Term I, 2024]

IV. Activity Zone:

Talking About Self

Hello, my name is _____ and I am from _____

I am currently studying at , and I hope to become one day.

I am passionate about

I love reading

I understand all my responsibilities towards

I am confident that I have what it takes to be a . and I am looking forward to

A QR code located at the bottom right of the page, which links to the official website of SIL International.



For worksheet, scan the QR code.



As per the Latest Skill Education Curriculum
prescribed by the CBSE, New Delhi

Aligned with
NEP 2020
and
NCF 2023

For Class **10**

A Concise Course in

ARTIFICIAL Intelligence



Subject Code : 417

By

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MCA, B.Ed.

Delhi Public School, Ranipur, Haridwar

Includes

Part A: Employability Skills

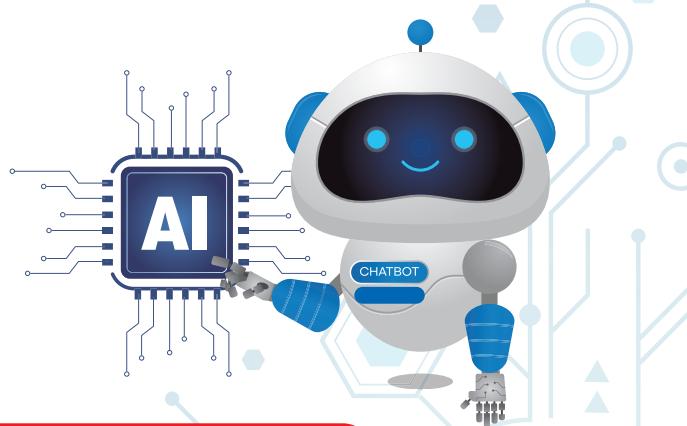
Part B: Subject Specific Skills

Part C: Practical Work

Part D: Project Work

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PREFACE

Dear Readers

Welcome to the world of Artificial Intelligence (AI), where new ideas flourish and endless possibilities await discovery. We have collaborated on this book series to guide you toward a future driven by technology and fairness for everyone.

In today's fast-evolving world, AI is a game-changer, offering solutions to diverse problems in entirely new ways. It has the power to reshape how we work and what jobs would look like in the future.

India has a chance to lead in technology, aiming not only for economic success but also to use AI for social good. The theme **#AIforAll** in India's plan for AI focusses on including everyone in this journey towards growth.

Recognising the pivotal role of education, the Central Board of Secondary Education (CBSE) has introduced vocational subjects to prepare the youth for the future. This series, aligned with NSQF subject code 417—Artificial Intelligence for Classes IX and X—is designed to cater to these educational reforms. Divided into multiple parts, it seeks to impart both **Employability Skills** and **Vocational Expertise** in AI.

Part A: Employability Skills – This section serves as a foundation, focussing on crucial skills essential for employability in any field. From communication and self-management to ICT proficiency, entrepreneurial acumen, and environmental consciousness, these units are tailored to empower students holistically.

Part B: Subject Specific Skills – This section delves deeper into the realm of AI, unravelling its fundamental concepts and applications. From understanding the core principles of AI to exploring Data Sciences, Computer Vision, Natural Language Processing, and Project Cycles, this part equips learners with practical insights and hands-on experiences.

Part C: Practical Work – This section introduces learners to introductory Python programming skills in a very user-friendly format.

Part D: Project Work – This section helps learners explore the world of Artificial Intelligence and its applications through interactive games, activities, and multi-sensory learning. It enables students to engage in hands-on experiences and prepares them to become AI-ready.

Throughout the series, simplicity intertwines with comprehensiveness, aided by lucid examples and experiments to facilitate understanding. Ample practice questions, including MCQs, short and long-answer questions, competency-based assessments, and practical activities, ensure a thorough grasp of the subject matter.

I extend my heartfelt gratitude to our support network—family, friends, and the dedicated team at **Inventant Education**—whose unwavering assistance made this endeavour possible. I owe a special acknowledgement to Madam Shashi Kir for her invaluable contributions to this project.

Wishing you all immense success in your pursuit of knowledge! Embrace the joy of learning and embark on this exhilarating journey of discovery!

— Author

Nidhi Arora

Email: nidhiarora@ihavemyvoice.com



INSIDE THE BOOK

Learning Objectives

It presents an overview of concepts that are covered in the chapter.

Learning Objectives

After Completing this unit, you will be able to:

- Understand various types of communication
- Learn the importance of feedback in communication
- Identify the way to effective communication
- Know about basic writing skills

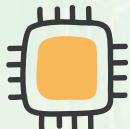


Knowledge Casket

The earliest long-distance communication method was the smoke signal. It was utilised in North America, where every tribe has its own communication method. Danger was indicated by smoke coming from the hilltop. Ancient China also employed the smoke signal.

Knowledge Casket

Aiding students in understanding real-life applications of concepts elucidated in the chapters.



Fact Locker

Presents interesting, chapter-relevant facts to stimulate research and maintain dynamism rather than focusing solely on theoretical content.



Fact Locker

Only 7% of communication is verbal. The rest comprises 38% tone of voice and 55% body language.

Brain Battle



What type of feedback adheres to a predetermined format or structure that the recipient formulates and transmits?

Brain Battle

Embedded questions throughout chapters to gauge students' understanding of the covered material.



Techvice

This gives self-reflecting thoughts that instil moral values in children.

TECHVICE

To enhance communication skills, practice active listening, maintain eye contact, and express your thoughts clearly. Be mindful of non-verbal cues, and seek feedback to improve.



Word Finder

Offers concise explanations for intricate terms and technical jargon, facilitating students' understanding.

Word Finder

Multitasking - The ability of an OS to perform multiple tasks simultaneously

Hovering - The action of moving the mouse cursor over an item without clicking, resulting in the display of additional information.

SPEED KEYS

Windows key + D shows the desktop.

Speed Keys

Provides tips to assist students in memorizing commonly used shortcut keys, enhancing efficiency in tasks.

Now I Understand

Repeated definitions distributed throughout chapters for improved retention, ensuring readiness for subsequent learning stages.

NOW I UNDERSTAND

1. Hardware vs. Software: Hardware comprises tangible computer components, while software, which is intangible, enables hardware functionality.
 2. The operating system (OS) is an essential piece of software allowing communication with computers and controlling and managing computer activities.
 3. The functions of OS encompass security, performance control, memory and process management, device handling, and more.

Competency/Application Based Question

The book features exercises designed to evaluate students' capacity to apply theoretical knowledge to solve real-world problems, promoting a deeper understanding and the development of practical skills.

Activity

Enclosed within the book are projects that serve as a bridge between theory and practical application, encouraging creativity, critical thinking, and collaboration while preparing individuals to tackle real-world challenges.



Activity

Nathan has been offered a high-paying job at a prestigious company, but it requires him to relocate to a city far away from his hometown. He's hesitant because it means being away from his close-knit circle of friends and family, causing him to ponder whether the career opportunity outweighs the personal sacrifices.

What should Nathan do?



SYLLABUS

Total Marks : 100

Theory : 50
Practical : 50

	UNITS	NO. OF HOURS for Theory and Practical	MAX. MARKS for Theory and Practical
PART A	Employability Skills		
	Unit 1: Communication Skills-II	10	2
	Unit 2: Self-Management Skills-II	10	2
	Unit 3: ICT Skills-II	10	2
	Unit 4: Entrepreneurial Skills-II	15	2
	Unit 5: Green Skills-II	05	2
Total		50	10
PART B	Subject Specific Skills		Marks
	Unit 1: Introduction to Artificial Intelligence (AI)		7
	Unit 2: AI Project Cycle		9
	Unit 3: Advance Python <i>(To be assessed in Practicals only)</i>		--
	Unit 4: Data Science (Introduction, Applications of Data Sciences, Data Science: Getting Started (up to Data Access), remaining portion is to be assessed in practical)		4
	Unit 5: Computer Vision (Introduction, Applications of Computer Vision, Computer Vision: Getting Started (up to RGB Images), remaining portion is to be assessed in practical)		4
	Unit 6: Natural Language Processing		8
	Unit 7: Evaluation		8
Total			40
PART C	Practical Work:		
	Practical File with minimum 15 Programs		15
	Practical Examination:		
	● Unit 3: Advance Python		5
	● Unit 4: Data Science		5
	● Unit 5: Computer Vision		5
Viva Voce			5
Total			35
PART D	Project Work / Field Visit / Student Portfolio (Any one to be done)		15
	Viva Voce		5
	Total		15
	GRAND TOTAL	200	100

Part A : EMPLOYABILITY SKILLS

Unit 1 : Communication Skills – II

S. No.	Learning Outcomes	Theory	Practical
1.	Demonstrate knowledge of various methods of communication	<ul style="list-style-type: none"> Methods of communication <ul style="list-style-type: none"> - Verbal - Non-verbal - Visual 	<ul style="list-style-type: none"> Writing pros and cons of written, verbal and non-verbal communication Listing do's and don'ts for avoiding common body language mistakes
2.	Provide descriptive and specific feedback	<ul style="list-style-type: none"> Communication cycle and importance of feedback Meaning and importance of feedback Descriptive feedback - written comments or conversations Specific and non-specific feedback 	<ul style="list-style-type: none"> Constructing sentences for providing descriptive and specific feedback
	Apply measures to overcome barriers in communication	<ul style="list-style-type: none"> Barriers to effective communication – types and factors Measures to overcome barriers in effective communication 	<ul style="list-style-type: none"> Enlisting barriers to effective communication Applying measures to overcome barriers in communication
	Apply principles of communication	<ul style="list-style-type: none"> Principles of effective communication 7Cs of effective communication 	<ul style="list-style-type: none"> Constructing sentences that convey all facts required by the receiver Expressing in a manner that shows respect to the receiver of the message Exercises and games on applying 7Cs of effective communication
	Demonstrate basic writing skills	<ul style="list-style-type: none"> Writing skills to the following: <ul style="list-style-type: none"> - Sentence - Phrase - Kinds of Sentences - Parts of Sentence - Parts of Speech - Articles - Construction of a Paragraph 	<ul style="list-style-type: none"> Demonstration and practice of writing sentences and paragraphs on topics related to the subject

Unit 2 : Self - Management Skills – II

S. No.	Learning Outcomes	Theory	Practical
1.	Apply stress management techniques	<ul style="list-style-type: none"> Meaning and importance of stress management Stress management techniques – physical exercise, yoga, meditation Enjoying, going to vacations and holidays with family and friends Taking nature walks 	<ul style="list-style-type: none"> Exercises on stress management techniques – yoga, meditation, physical exercises Preparing a write-up on an essay on experiences during a holiday trip
	Demonstrate the ability to work independently	<ul style="list-style-type: none"> Importance of the ability to work independently Describe the types of self-awareness Describe the meaning of self-motivation and self-regulation 	<ul style="list-style-type: none"> Demonstration on working independently • goals • Planning of an activity • Executing tasks in a specific period, with no help or directives • Demonstration on the qualities required for working independently

Unit 3 : Information and Communication Technology Skills - II

S. No.	Learning Outcomes	Theory	Practical
1.	Distinguish between different operating systems	<ul style="list-style-type: none"> • Classes of operating systems • Menu, icons and task bar on the desktop • File concept, file operations, file organization, directory structures, and file-system structures • Creating and managing files and folders 	<ul style="list-style-type: none"> • Identification of task bar, icons, menu, etc. • Demonstration and practicing of creating, renaming and deleting files and folders, saving files in folders and sub-folders, restoring files and folders from recycle bin
2.	Apply basic skills for care and maintenance of computer	<ul style="list-style-type: none"> • Importance and need of care and maintenance of computer <ul style="list-style-type: none"> - Cleaning computer components - Preparing maintenance schedule - Protecting computer against viruses - Scanning and cleaning viruses and removing SPAM files, temporary files and folders 	<ul style="list-style-type: none"> • Demonstration of the procedures to be followed for cleaning, care and maintenance of hardware and software

Unit 4 : Entrepreneurial Skills - II

S. No.	Learning Outcomes	Theory	Practical
1.	List the characteristics of successful entrepreneur	<ul style="list-style-type: none"> • Entrepreneurship and society • Qualities and functions of an entrepreneur • Role and importance of an entrepreneur • Myth about entrepreneurship • Entrepreneurship as a career option 	<ul style="list-style-type: none"> • Writing a note on entrepreneurship as career option • Collecting success stories of first generation and local entrepreneurs • Listing the entrepreneurial qualities – analysis of strength and weaknesses • Group discussion of self-qualities that students feel are needed to become successful entrepreneur • Collect information and related data for a business • Make a plan in team for setting up a business

Unit 5 : Green Skills – II

S. No.	Learning Outcomes	Theory	Practical
1.	Demonstrate the knowledge of importance, problems and solutions related to sustainable development	<ul style="list-style-type: none"> • Definition of sustainable development • Importance of sustainable development • Problems related to sustainable development 	<ul style="list-style-type: none"> • Identify the problem related to sustainable development in the community • Group discussion on the importance of respecting and conserving indigenous knowledge and cultural heritage • Discussion on the responsibilities and benefits of environmental citizenship, including the conservation and protection of environmental values • Preparing models on rain water harvesting, drip / sprinkler irrigation, vermin-compost, solar energy, solar cooker, etc.

PART B : SUBJECT SPECIFIC SKILLS

Unit 1: Introduction to Artificial Intelligence (AI)

Sub-Unit	Learning Outcomes	Session / Activity / Practical
Foundational concepts of AI	Understand the concept of human intelligence and its various components such as reasoning, problem-solving, and creativity	Session: What is Intelligence? Session: Decision Making. <ul style="list-style-type: none"> • How do you make decisions? • Make your choices
		Session: what is Artificial Intelligence and what is not?
Basics of AI: Let's Get Started	Understand the concept of Artificial Intelligence (AI) and its domains	Session: Introduction to AI and related terminologies. <ul style="list-style-type: none"> • Introducing AI, ML & DL. • Introduction to AI Domains (Data Sciences, CV & NLP) • Gamified tools for each domain- <ul style="list-style-type: none"> • Data Sciences- Impact Filter (Impact of rise in temperature on different species) https://artsexperiments.withgoogle.com/impactfilter/ • CV- Autodraw (It pairs machine learning with drawings from talented artists to help you draw stuff fast.) https://www.autodraw.com/ • NLP- Wordtune (AI writing tool that rewrites, rephrases, and rewards your writing) https://www.wordtune.com/
	Explore the use of AI in real Life.	Session: Applications of AI – A look at Real-life AI implementations
	Learn about the ethical concerns involved in AI development, such as AI bias, data privacy and how they can be addressed.	Session: AI Ethics <ul style="list-style-type: none"> • Moral Machine Activity : a platform for gathering a human perspective on moral decisions made by machine intelligence, such as self-driving cars. http://moralmachine.mit.edu/

Unit 2: AI Project Cycle

Sub-Unit	Learning Outcomes	Session / Activity / Practical
Introduction	Understand the stages involved in the AI project cycle, such as problem scoping, data collection, data exploration, modeling, evaluation.	Session: Introduction to AI Project Cycle
Problem Scoping	Learn about the importance of project planning in AI development and how to define project goals and objectives.	Session: Understanding Problem Scoping & Sustainable Development Goals
Data Acquisition	Develop an understanding of the importance of data collection in AI and how to choose the right data sources.	Session: Simplifying Data Acquisition
Data Exploration	Know various data exploration techniques and its importance	Session: Visualising Data
Modelling	Know about the different machine learning algorithms used to train AI models	Session: Introduction to modelling <ul style="list-style-type: none"> • Introduction to Rule Based & Learning Based AI Approaches • Activity : Teachable machine to demonstrate Supervised Learning https://teachablemachine.withgoogle.com/ • Activity : Infinite Drum Machine to demonstrate Unsupervised learning https://experiments.withgoogle.com/ai/drum-machine/view/

		<ul style="list-style-type: none"> Introduction to Supervised, Unsupervised & <i>Reinforcement Learning Models (Optional)***</i> Neural Networks
Evaluation	Know the importance of evaluation and various metrics available for evaluation	Session: Evaluating the idea

Unit 3: Advance Python (To be assessed through Practicals)

Sub-Unit	Learning Outcomes	Session / Activity / Practical
Recap	Understand to work with Jupyter Notebook, creating virtual environment, installing Python Packages.	Session: Jupyter Notebook
	Able to write basic Python programs using fundamental concepts such as variables, data types, operators, and control structures.	Session: Introduction to Python
	Able to use Python built-in functions and libraries.	Session: Python Basics

Unit 4: Data Sciences (To be assessed through Theory)

Sub-Unit	Learning Outcomes	Session / Activity / Practical
Introduction	Define the concept of Data Science and understand its applications in various fields.	Session: Introduction to Data Science
		Session: Introduction to Python
Getting Started	Understand the basic concepts of data acquisition, visualization, and exploration.	Session: Revisiting AI Project Cycle, Data Collection, Data Access Activities: Game: Rock, Paper & Scissors https://next.rockpaperscissors.ai/

Unit 4: DATA SCIENCES (To be assessed through Practicals)

Sub-Unit	Learning Outcomes	Session / Activity / Practical
Python Packages	Use Python libraries such as NumPy, Pandas, and Matplotlib for data analysis and visualization.	Session: Python for Data Sciences <ul style="list-style-type: none"> Numpy Pandas Matplotlib
Concepts of Data Sciences	Understand the basic concepts of statistics, such as mean, median, mode, and standard deviation, and apply them to analyze data using various Python packages.	Session: Statistical Learning & Data Visualisation
K-nearest neighbour model (Optional)***	Understand the basic concepts of the KNN algorithm and its applications in supervised learning.	Activity: Personality Prediction (Optional)***
		Session: Understanding K-nearest neighbour model (Optional)***

Unit 5: Computer Vision (To be assessed through Theory)

Sub-Unit	Learning Outcomes	Session / Activity / Practical
Introduction	Define the concept of Computer Vision and understand its applications in various fields.	Session: Introduction to Computer Vision
		Session: Applications of CV

Concepts of Computer Vision	Understand the basic concepts of image representation, feature extraction, object detection, and segmentation.	Session: Understanding CV Concepts <ul style="list-style-type: none"> Computer Vision Tasks Basics of Images-Pixel, Resolution, Pixel value Grayscale and RGB images
		Activities: <ul style="list-style-type: none"> Game- Emoji Scavenger Hunt https://emojiscavengerhunt.withgoogle.com/ RGB Calculator: https://www.w3schools.com/colors/colors_rgb.asp Create your own pixel art: www.piskelapp.com Create your own convolutions: http://setosa.io/ev/image-kernels/

Unit 5: Computer Vision (To be assessed through Practicals)

Sub-Unit	Learning Outcomes	Session / Activity / Practical
OpenCV	Use Python libraries such as OpenCV for basic image processing and computer vision tasks.	Session: Introduction to OpenCV
		Hands-on: Image Processing
Convolution Operator (Optional)**	Apply the convolution operator to process images and extract useful features.	Session: Understanding Convolution operator (Optional)**
		Activity: Convolution Operator (Optional)**
Convolution Neural Network (Optional)**	Understand the basic architecture of a CNN and its applications in computer vision and image recognition.	Session: Introduction to CNN (Optional)**
		Session: Understanding CNN (Optional)** <ul style="list-style-type: none"> Kernel Layers of CNN
		Activity: Testing CNN (Optional)**

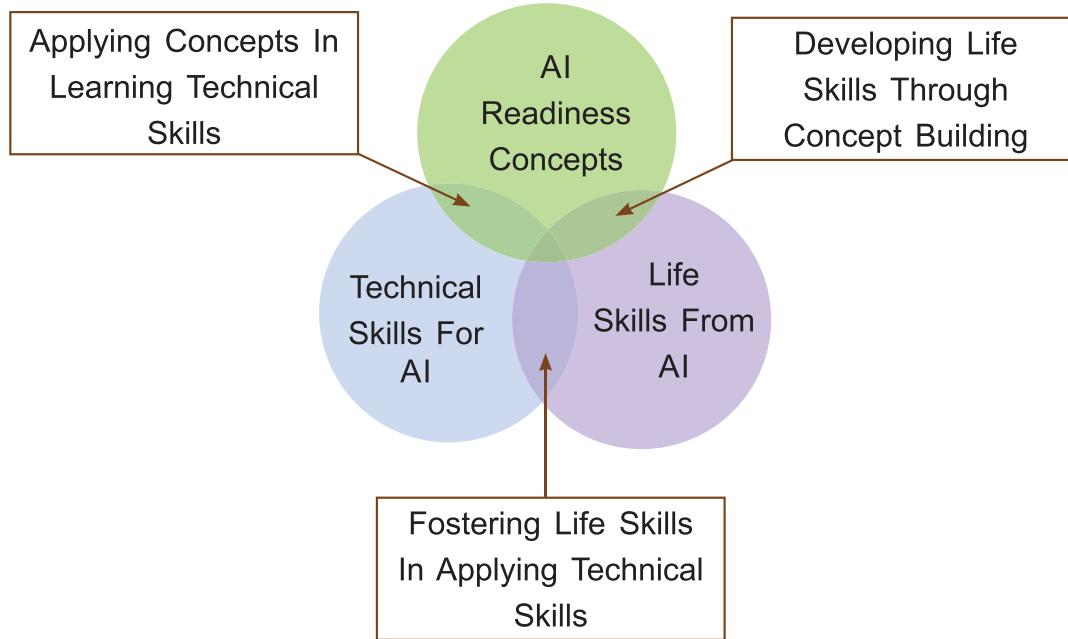
Unit 6: Natural Language Processing

Sub-Unit	Learning Outcomes	Session / Activity / Practical
Introduction	Understand the concept of Natural Language Processing (NLP) and its importance in the field of Artificial Intelligence (AI).	Session: Introduction to Natural Language Processing
		Activity : Use of Google Translate for same spelling words
		Session: NLP Applications
		Session: Revisiting AI Project Cycle
Chatbots	Explore the various applications of NLP in everyday life, such as chatbots, sentiment analysis, and automatic summarization	Activity: Introduction to Chatbots
Language Differences	Gain an understanding of the challenges involved in understanding human language by machine.	Session: Human Language VS Computer Language
Concepts of Natural Language Processing	Learn about the Text Normalization technique used in NLP and popular NLP model - Bag-of-Words	Session: Data Processing <ul style="list-style-type: none"> Text Normalisation Bag of Words Hands-on: Text processing <ul style="list-style-type: none"> Data Processing Bag of Words TFIDF (Optional)** NLTK (Optional)**

Unit 7: Evaluation

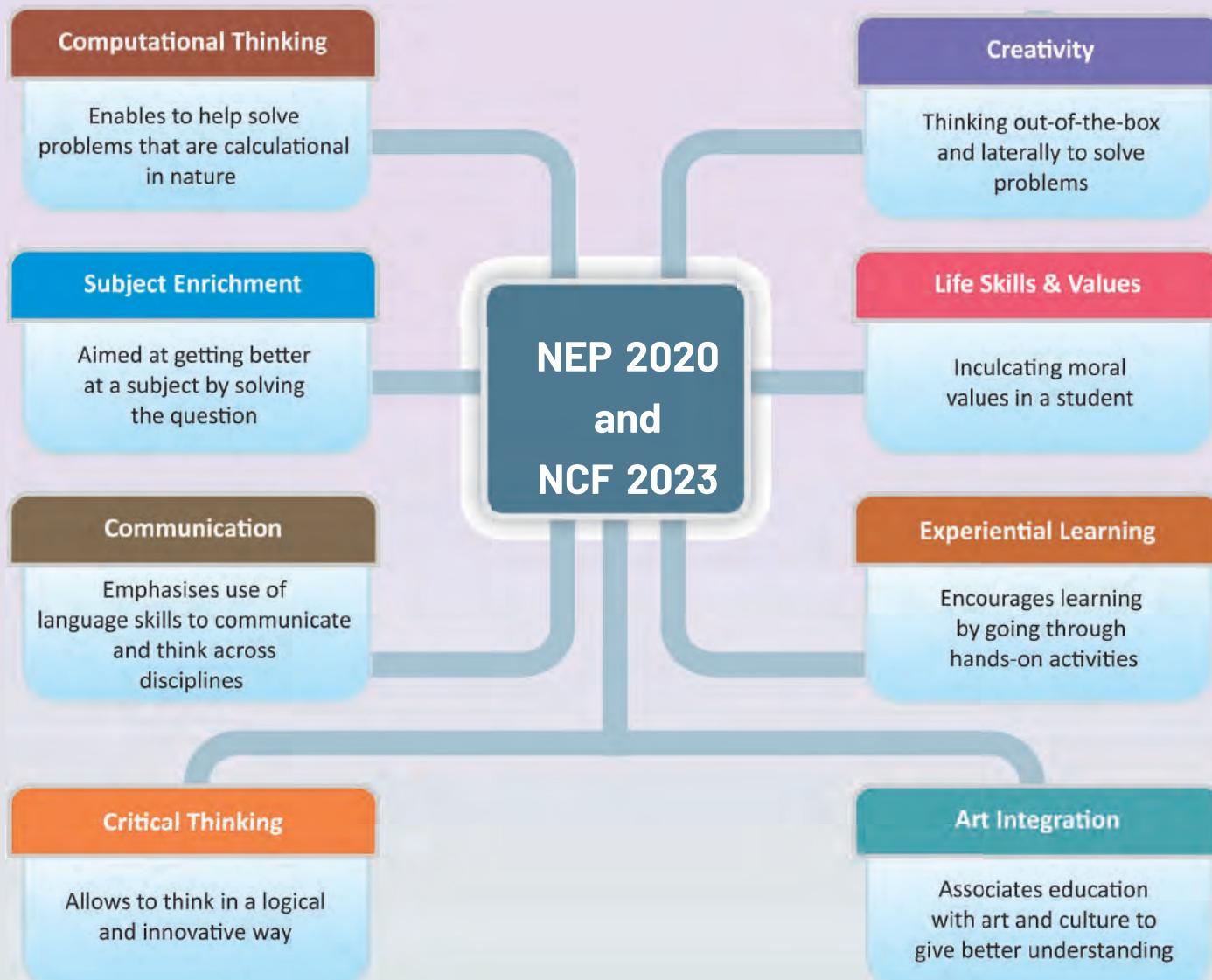
Sub-Unit	Learning Outcomes	Session / Activity / Practical
Introduction	Understand the role of evaluation in the development and implementation of AI systems.	<p>Session: Introduction to Model Evaluation</p> <ul style="list-style-type: none"> • What is Evaluation? • Different types of Evaluation techniques- Underfit, Perfect Fit, OverFit
Model Evaluation Terminology	Learn various Model Evaluation Terminologies	<p>Session: Model Evaluation Terminologies</p> <ul style="list-style-type: none"> • The Scenario - Prediction, Reality, True Positive, True Negative, False Positive, False Negative • Confusion Matrix • Activity- to make a confusion matrix based on data given for Containment Zone Prediction Model
Confusion Matrix	Learn to make a confusion matrix for given Scenario	Session & Activity: Confusion Matrix
Evaluation Methods	Learn about the different types of evaluation techniques in AI, such as Accuracy, Precision, Recall and F1 Score, and their significance.	<p>Session: Evaluation Methods</p> <ul style="list-style-type: none"> • Accuracy • Precision • Recall • Which Metric is Important? - Precision or Recall • F1 Score <p>Activity: Practice Evaluation</p>

SKILLS TO BE DEVELOPED



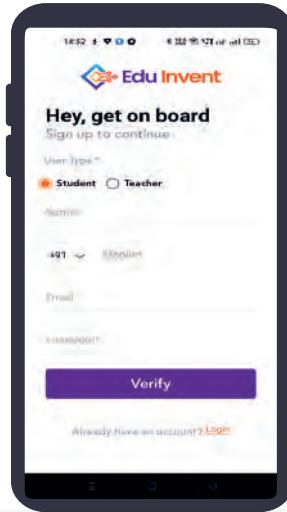
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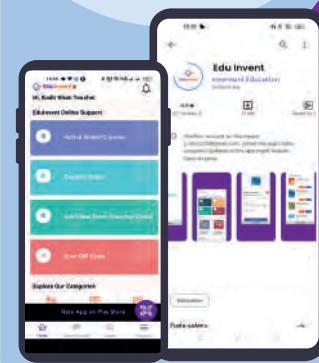
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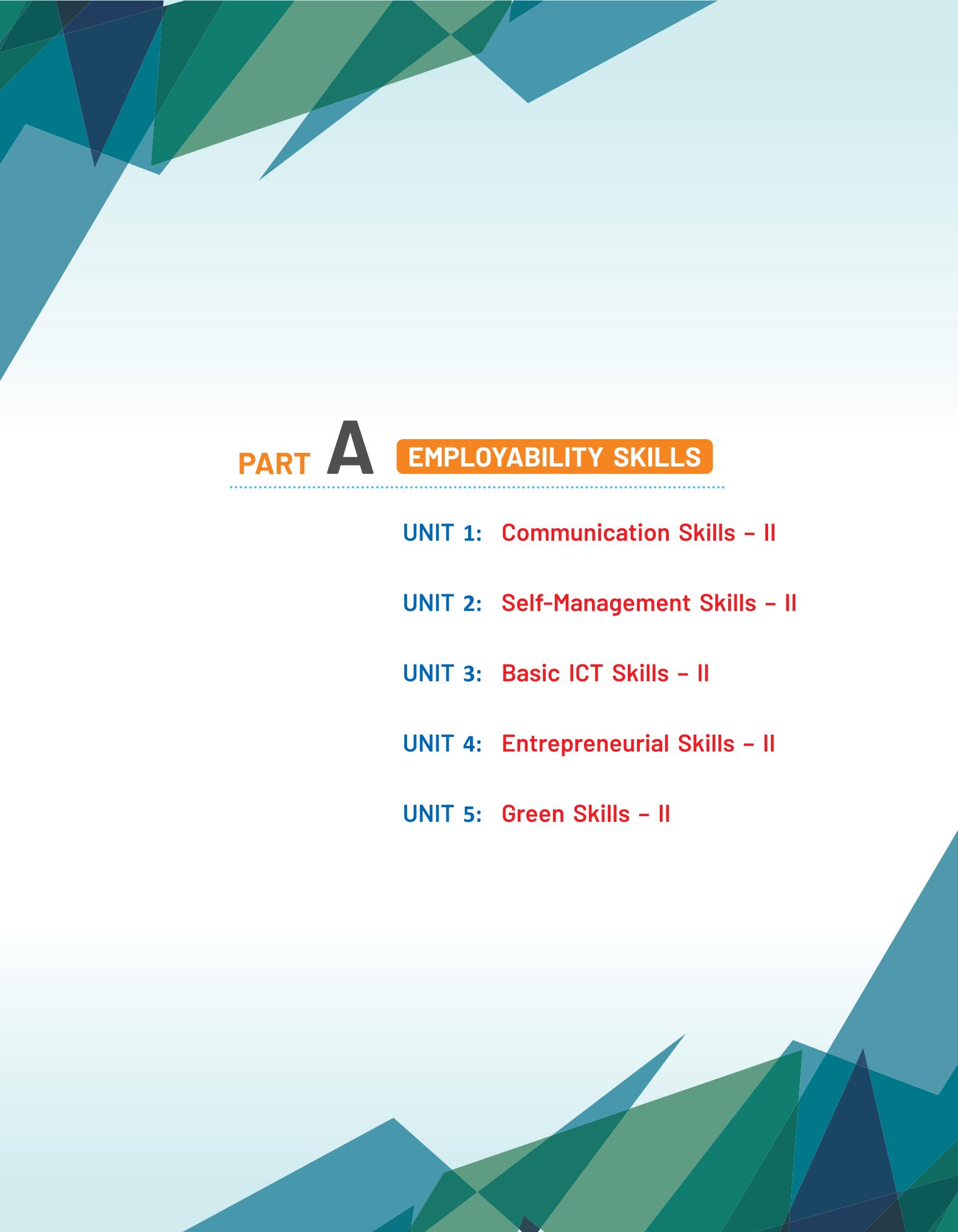
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PART A

EMPLOYABILITY SKILLS

UNIT 1: Communication Skills – II

UNIT 2: Self-Management Skills – II

UNIT 3: Basic ICT Skills – II

UNIT 4: Entrepreneurial Skills – II

UNIT 5: Green Skills – II

1

Communication Skills-II

Learning Objectives

After Completing this unit, you will be able to:

- Understand various types of communication
- Learn the importance of feedback in communication
- Identify the way to effective communication
- Know about basic writing skills

SESSION 1 TYPES OF COMMUNICATION

Communication is an important part of both our personal and work lives. Setting goals for the future, getting things done, changing people's minds, and keeping relationships strong all depend on good communication.

PROCESS OF COMMUNICATION

Communication is a two-way process in which a message is transmitted between two or more people in the form of ideas, thoughts, feelings, or opinions with the goal of creating a shared understanding.

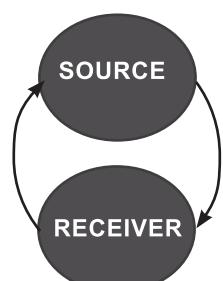
Communication is a dynamic process that starts with the conceptualization of ideas by the sender. The sender then transmits the message to the receiver through a transmitting channel, who in turn gives feedback in the form of some signal or message within the given time frame. Thus, there are seven main elements of the communication process.

FORMS OF COMMUNICATION

When it comes to career success, communication is very important for getting ahead in your work. No matter how impressive your resume is, without strong interpersonal and intrapersonal skills, you won't get very far in your career. People often use the terms interpersonal skills and intrapersonal skills a lot, so it's important to understand what they mean and how they affect each other.

What do Intrapersonal Skills mean?

Intrapersonal skills are associated with self-awareness and self-understanding. In this type of communication, both the source and the receiver are the same. This includes having a sense of self, purpose, values, beliefs, and motivations. Knowing your own thoughts, feelings, and ideas is the process of engaging in intrapersonal communication. You may improve your decision-making and take significant action by being aware of and in control of your emotions.



INTRAPERSONAL
COMMUNICATION

2

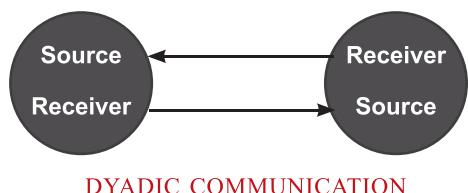
What do Interpersonal Skills mean?

Interpersonal skills are a set of skills that enable you to interact effectively work with other people. They include working together, actively listening, and handling problems. You need to be able to read the situation and respond in an appropriate manner to ensure successful interactions with others. Your actions and interpersonal skills affect other people, so it is important to inculcate those as part of your personality.

Dyadic communication

Dyadic communication refers to the exchange of information between two individuals or entities. In this case, the source becomes a receiver, and the receiver becomes the source as a result of the dynamic communication process in which both sender and receiver exchange feedback.

An exchange of ideas between two companions and an electronic correspondence or letter exchange are examples of Dyadic communication.



DYADIC COMMUNICATION

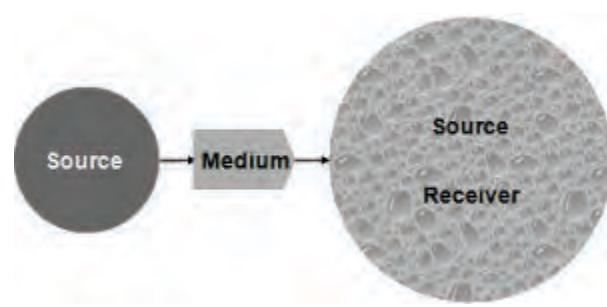
Public Communication

Public communication refers to the process of transmitting information, ideas, and messages to a large audience or the general public. Public communication serves three prime objectives: to entertain, to persuade, or to inform. It is a type of interaction that requires greater levels of planning and preparation on the part of the speaker and involves less direct interaction. While people in the audience still mostly use body language to communicate with the speaker, there isn't much back and forth communication like there is in one-on-one conversations.

Mass Communication

Mass communication refers to all types of media that are used to communicate with a mass audience. Mass communication requires tools and technology since the audience is too large to gather in one spot. Direct receiver access is not possible in mass transmission. They need newspapers, radio, TV, and the internet. Audience input is scarce or delayed.

Any media used to reach mass audiences is mass communication. Books, TV, radio, films, computers, magazines, and newspapers are mass media. Email and other one-on-one computer technologies are not included in mass communication. Mass communication delivers perspectives on events, situations, and individuals from other cultures. It helps us understand global events and the perspectives of individuals and cultures we don't know.



MASS COMMUNICATION

Small-Group Communication

Small-Group Communication refers to interactions between three or more individuals who are linked by a shared identity, mutual influence, or purpose. Some examples of small-group communication are:

- In class, a science group talks about a project.
- A group of farmers from the area is talking about better fertilisers.
- A group of children is playing cricket on a field and talking about the game.
- Communication of parents with teachers.



ELEMENTS OF COMMUNICATION

Communications are something we all do every day without giving them much thought. It began many hundreds of years ago and has evolved into writing, listening, speaking, and reading as four components.

In order to understand the communication process better, we can break it down into a series of essential components:

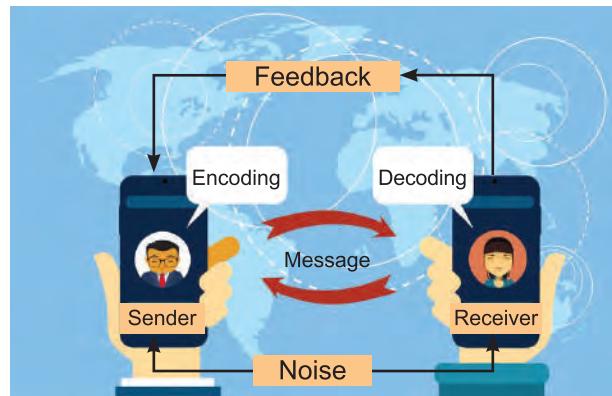
- i. **Sender:** The person who initiates the communication.
- ii. **Ideas/information:** The idea that has to be conveyed
- iii. **Encoding:** the transformation of a thought or an idea into words or body language to communicate with the receiver.
- iv. **Channels:** The medium through which information from the sender goes through the receiver.
- v. **Receiver:** The target person who receives the message.
- vi. **Decoding:** The process of converting the received message in a way that is understood by the receiver.
- vii. **Feedback:** When the receiver responds to the sender to give feedback on whether the message sent by the sender was understood in its entirety and intent.

Noise

Noise could be termed as the potential interruption to a message on the way from the sender to the receiver.

Internal Noise: When someone sends a message and the reader can't understand the words because of slang or a different rhythm.

External Noise: When the source of the noise is outside of one's control, such as when someone is talking in a crowded environment.



Elements of Communication

Effective communication happens when both the sender and the receiver feel satisfied. To be an effective communicator, you need to be clear and complete in what you are trying to express. There are mainly four types of communication: verbal, non-verbal, visual and written. For example, you might use verbal communication while sharing a presentation with a group. You might also use a written communication when applying for a job or sending an email. Let us look at the four categories of communication in more depth.

VERBAL

It is most commonly used during presentations, video conferences, phone calls, meetings and one-to-one conversations. It makes use of language to transfer information through speaking or sign language. It is important as it is very efficient. Following steps are recommended to develop your verbal skills:

- a. Use a strong, confident voice when speaking or presenting information to a few or group of persons. This helps in your ideas being easily understood.
- b. Use active listening when conducting a meeting, presentation or even when participating in one-to-one conversations. Listening intently helps in growing as a communicator.
- c. Avoid Filler words like 'um', 'like', 'so', 'yeah', which can prove to be distracting for your listeners. Try replacing it with deep breaths when you are tempted to use them.
- d. Keep it simple i.e., use easy to understand language.



Public Speaking

Public speaking has to be one of the most important professional skills and is used in almost every business. However, it is also a common fear among people. The good news is that anyone can learn to talk comfortably and effectively in front of a group. With a little practice, you can improve your public speaking skills. The 3Ps method (Prepare, Practice, Perform) can help you overcome your anxieties and become a confident and powerful speaker.

Prepare	Practice	Perform
Organise Your Content in Advance	Work on being your best self every day.	It's time to concentrate on your audience now.
Good speeches don't just happen in a day. They are made when someone takes the time to organise good content that is important to the needs of their audience in a way that makes sense. It takes talent and effort to create a powerful speech, but you can learn how to make it impactful.	A well-written speech needs to be delivered well, and there's only one way to do that: practice, practice, and practice.	Once you've prepared a well-through-out speech and practiced it until it's comfortable, present it to your audience as the gift. It's normal to feel awkward or even scared when we speak in public. But it's much more fun to stop thinking about yourself and just talk to the people present. If you are afraid, take a few deep breaths. Think about what you've written down, and then speak with confidence. Every step of the way, you can improve how you tackle public speaking.

Advantages of Verbal Communication

There are several advantages associated with verbal communication. Some of them are:

- Faster mode of communication
- Cost-effective
- Obtain prompt feedback
- The most convenient way
- Helps in making better relationships
- Ease of preparation
- Simplicity of preparation
- Effective for convincing and persuading



Knowledge Casket

The earliest long-distance communication method was the smoke signal. It was utilised in North America, where every tribe has its own communication method. Danger was indicated by smoke coming from the hilltop. Ancient China also employed the smoke signal.

Disadvantages of Verbal Communication

Some of the disadvantages of the verbal communication are:

- The most common disadvantage of verbal communication is the regional difference between the sender and receiver. These obstacles may be caused by the fact that their dialect and language are different.
- The size of the audience is also a barrier to verbal communication because the speaker can only address a few people at a time.
- Regional differences are the most significant barrier.
- A large audience also creates communication obstacles.
- Receivers tend to forget what is said to them.
- Everyone cannot listen at the same rate.



Fact Locker

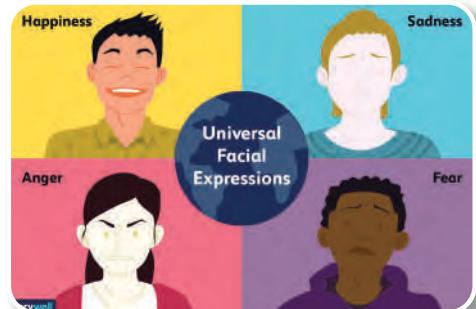
Only 7% of communication is verbal. The rest comprises 38% tone of voice and 55% body language.

NON-VERBAL

Non-Verbal communication helps us understand the thoughts and feelings of our listeners such as, crossed arms or hunched shoulders could be a sign of nervousness or anxiety, while both feet on the floor and arms by their sides or on the table could display their positivity and being open to information. It is the use of body language, gestures and facial expressions to convey information to others. This may be used intentionally or unintentionally e.g. smiling.

Steps you can take to develop your non-verbal communication skills:

- Develop self-awareness on how your emotions affect your body to gain mastery over your external presentation. Try and identify the various emotions felt throughout the day in relation to your body, such as if you are feeling anxious you may feel a tightness in your stomach.
- Make non-verbal communication intentional. Make efforts to display positive or negative body language as and when required, e.g., use a furrowed brow if you are confused or anxious. Use body language along with verbal communication, such as asking follow-up questions or asking the audience for feedback.



Types of Non-Verbal Communication

There are many different types of non-verbal communication. They include:

Body language

Body language has its own way to convey messages. It is the use of physical behaviour, facial emotions, and mannerisms to communicate non-verbally. Non-verbal behaviours can allow people to be at ease, build trust, and connect with others through non-verbal actions. But they can also make things confusing for others, cause tension, and even make the surroundings uncomfortable.



For instance, someone might cross their arms when they are scared or angry. Standing tall and straight can send the message of self-assurance and authority, whereas lowering the head or dropping the shoulders conveys insecurity or a lack of confidence.

Gestures

Gestures describe movements of parts of the body, such as hands or heads, to convey a thought or meaning. This includes waving our hands when speaking, pointing, and raising hands. For example, raising your hand could be seen as asking a question. Biting nails reveals anxiety and nervousness.



Facial expressions

Facial expression is one of the most common types of non-verbal communication. Using the eyebrows, mouth, eyes, and facial muscles to convey can be effectively used to communicate both emotion and information.

Touch: We can also use touch as a form of communication. Most commonly, it is used to express support or comfort. For example, handshakes are used



to demonstrate affection and reassurance. A pat on the back demonstrates appreciation. Shaking, pushing, and squeezing can express anger. Hugging and Patting can communicate love.

Eye contact: Maintaining eye contact is crucial for maintaining conversations since it communicates a person's empathy, care, and level of involvement.

Body movement and posture

Your posture and body movement include aspects such as sitting, walking, standing, bearing, stance, and even small movements like bowing down to greet a person, kneeling down to pray, etc.



Paralanguage: As a non-verbal communication method, paralanguage makes use of voice, intonation, pitch, pauses, volume, stress, gestures, and signs. One's voice can communicate excitement, certainty, worry, as well as the speaker's mental state, and temperament through these.

Advantages of Non-Verbal Communication

- Expressing feelings, emotions, and intentions without using words
- Addressing Cultural Differences
- Communicating ideas more clearly
- Enhancing the clarity of conveying ideas and providing a non-violent method of communication can lead to improvements in verbal communication

Disadvantages of Non-Verbal Communication

- Possibility of being misread and misunderstood
- Ambiguity
- Lack of explanation of the message

VISUAL COMMUNICATION

We use visuals to help us during presentations to provide helpful context along with written or verbal communication. In this we use photographs, art, drawings, sketches, charts and graphs to convey information. Here are few recommended steps to develop your visual connection skills:

- a. Adding visuals can be distracting, making concepts confusing. It would be useful to ask others for feedback if you are considering sharing a visual aid in your presentation or email.
- b. Be discreet in the use of visuals. They should not be violent, offensive or insensitive. Make sure to use visuals or graphics which can be easily understood and are relevant to your presentation.

Advantages of Visual Communication

- Visual communication helps you understand complex concepts quickly and easily, grabs attention, and builds relationships since it is more effective than words alone.
- Visual aids like charts, maps, etc. can also help you understand complex ideas and data.
- Visuals are an excellent way to recall information because they are more memorable than text. It makes it easier to compare different concepts and ideas.

Disadvantages of Visual Communication

- The expense of adopting visual communication techniques is higher.
- Sometimes, it becomes more challenging to interpret the significance of visual representations.
- Sometimes this coverage takes more time. In an oral conversation, thoughts are exchanged quickly.



WRITTEN COMMUNICATION

Written Communication is used mainly to share information through books, pamphlets, blogs, letters, memos, etc. Emails and chats are the common form of communication in the work place. It is very helpful as it provides a record of information for reference. Following steps are recommended for development of your written communication skills:

- a. Ensure your written communication is as simple and clear as possible to be understood easily by the audience.
- b. Avoid using certain tones while writing, e.g., a joke, sarcasm or excitement could be understood differently depending on the audience. It is better to play safe and use plain and simple language.
- c. Review your written communication by taking out time to read your emails, memos or letters to identify mistakes or a chance to say things differently.

Advantages of Written Communication

- The written documents are easy to preserve.
- The communicated message can be clearly and thoroughly understood.
- Written communication records serve as a permanent record.
- Any complex matter or piece of information can be represented easily and more elegantly.

Disadvantages of Written Communication

- Written communication is more expensive than other forms of communication, and it is not only expensive but also takes a lot of time.
- Confidentiality of information is not always possible in written communication.
- If the message's destination is located far away and there is any doubt that has to be clarified, the response is not immediate, which ultimately causes a delay in making subsequent decisions.

IMPACT OF BODY LANGUAGE

While effective communication is essential for success in both personal and professional relationships, your nonverbal clues, or body language, actually say more than words ever said. Body language, which is frequently done unconsciously rather than intentionally, is the use of physical behaviour, expressions, and mannerisms to communicate nonverbally.

Evaluating Non-Verbal Clues

Facial expressions

The human face is extremely expressive, able to convey a lot of different feelings without them having to say a word. And unlike some non-verbal clues, everyone can understand facial emotions. People from all over the world use the same facial emotions to show happiness, sadness, anger, surprise, fear, and disgust.

Body Movement and Posture

People can learn a lot about you from the way you move and carry yourself. Your posture, bearing, stance, and the small moves you make are all examples of this type of non-verbal communication.

Gestures

Gestures are an important part of our everyday lives. When you're arguing or talking quickly, you might



wave, point, call, or use your hands. You often say what you want to say without even thinking about it. Some gestures, on the other hand, can mean very different things in different countries. In English-speaking countries, moving your hand to make the ‘OK’ sign generally means something good. But in places like Germany, Russia, and Brazil, it’s seen as rude. To avoid getting things wrong, you should be careful about how you use movements.

Eye Contact

Making eye contact is also a good way to keep the talk going and find out if the other person is interested and ready to respond.

Touch

Touch is a big way that we talk to each other. A weak handshake, a warm bear hug, a condescending pat on the head, or a tight grip on the arm are all very different ways to show that you care.

Space

Do you ever feel awkward when someone is talking to you because they are standing too close and taking up too much of your space? Everyone needs space, but that need is different based on the culture, the situation, and how close the relationship is. Physical space can send a lot of different nonverbal messages, such as signs of closeness, love, aggression, or control.

Voice

It’s how you say things, not what you say. People not only hear your words when you talk, they also read your voice. Your timing and pace, how loud you talk, your tone and inflection, and sounds like ahh and uh-huh that show you understand are some of the things they pay attention to. Think about how the tone of your voice can show sarcasm, anger, love, or confidence.

DOS AND DON'TS OF BODY LANGUAGE

Dos	Don'ts
Make eye contact with people while talking.	Don't look all over the room quickly.
Talk with your hands on your sides or use them to point.	Don't look at anyone straight on; move your eyes around.
It's okay to look at your notes; it will help you keep going.	Don't move your arms around.
As you speak and have time, walk towards the people in the room.	Look at your notes, but don't forget to look at the people in the room too.
Put your even weight on both feet.	Don't mix up your papers.
Hold your breath and smile. If you're worried, do this.	Don't lean on the stage.
Show your feelings and facial expressions in a natural way.	Don't look away from someone in the group for too long.
Make your voice clear so that everyone can hear you.	Don't move with your hands or put them in your pockets while you talk.
Say what you want to say. Show the right feeling for the situation.	Don't fold your arms over your chest.
Sit with a straight spine.	Don't touch your face repeatedly.
Be who you are.	Don't slouch.





NOW I UNDERSTAND

1. Communication is a two-way process in which a message is transmitted between two or more people in the form of ideas, thoughts, feelings, or opinions with the goal of creating a shared understanding.
 2. Some of the forms of communication are: intrapersonal communication, interpersonal communication, dyadic communication, public communication, mass communication and small-group communication.
 3. The four categories of communication are: verbal communication, non-verbal communication, visual communication, and written communication.
 4. Verbal communication is most commonly used during presentations, video conferences, meetings, and one-to-one conversations.
 5. Non-verbal communication helps us understand the thoughts and feelings of our listeners, such as crossed arms or hunched shoulders, which could be a sign of nervousness or anxiety, while both feet on the floor and arms by their sides or on the table could display their positivity and being open to information.
 6. Visual communication helps us during presentations by providing helpful context along with written or verbal communication. In this, we use photographs, art, drawings, sketches, charts, and graphs to convey information.
 7. Written communication is used mainly to share information through books, pamphlets, blogs, letters, memos, etc. Emails and chats are the most common forms of communication in the workplace. It is very helpful as it provides a record of information for reference.

TRACK YOUR PROGRESS

I. Choose the Correct Answer:

6. Which non-verbal cue can convey emotions like happiness, sadness, and anger?
- Body movement and posture
 - Eye contact
 - Gestures
 - Voice tone
7. Rahul lives at a hostel in Goa. He calls his mother who lives in Bangalore, to get her approval for the picnic to Mumbai. However, due to a phone line outage, his mother was unable to understand and respond to him. He became enraged. (d) What other means can he use to obtain his mother's immediate approval? [CBSE Sample Paper Term I, 2021-22]
- Fax
 - Letter
 - Email
 - Message through a friend
8. Which of the following is not a form of written communication? [CBSE Sample Paper Term I, 2021-22]
- Circulars
 - Reports
 - Discussions
 - SMS
9. _____ communication is the use of body language, gestures and facial expressions to convey information to others. [CBSE Sample Paper Term I, 2021-22]
- Verbal
 - Written
 - Non-Verbal
 - Visual
10. _____ is an example of verbal communication. [CBSE Sample Paper Term I, 2021-22]
- E-mail
 - Letter
 - Phone call
 - Visual

ANSWERS

1. (c) 2. (a) 3. (b) 4. (c) 5. (c) 6. (a) 7. (c) 8. (c) 9. (c) 10. (d)

II. Long Answer type Questions:

1. Explain the difference between intrapersonal and interpersonal communication.

Ans. Intrapersonal communication involves self-awareness and understanding one's own thoughts and emotions. It is a form of communication within oneself. Interpersonal communication, on the other hand, involves interaction with others and the exchange of information, ideas, and emotions between individuals. It focuses on communication between people and building effective relationships.

2. Describe the elements of the communication process.

Ans. The essential elements of the communication process include:

- Sender: The person who initiates the communication.
- Ideas or information: the message that needs to be conveyed
- Encoding: The process of transforming thoughts or ideas into words or body language.
- Channels: The medium through which the message is transmitted.
- Receiver: The individual who receives the message.
- Decoding: The process of interpreting the received message.
- Feedback: The response from the receiver to confirm understanding

3. What is the primary purpose of mass communication, and how does it differ from small-group communication?

Ans. The primary purpose of mass communication is to entertain, persuade, or inform a large audience. It involves one-way communication from a sender to a passive audience with limited immediate feedback.



In contrast, small-group communication refers to interactions between three or more individuals who share a common identity or purpose. It involves two-way communication, active participation, and the exchange of ideas within a smaller group.

4. Explain the concept of non-verbal communication and provide examples of non-verbal clues.

Ans. Non-verbal communication involves the use of physical behaviour, facial expressions, gestures, and body language to convey messages and emotions without using words. Examples of non-verbal clues include facial expressions (smiling, frowning), body movement and posture (standing tall, slouching), gestures (waving, pointing), eye contact, touch (handshakes, hugs), and voice tone (intonation, volume). These clues play a significant role in conveying feelings and intentions.

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SESSION 2 FEEDBACK IN COMMUNICATION

INTRODUCTION

As you have previously learned, feedback is critical to the success of a conversation. It guarantees the effective transmission of the communication. This session aims to provide an understanding of the significance of feedback in the communication process and the various forms of communication that comprise effective communication.

IMPORTANCE OF FEEDBACK

Feedback in communication is the response, reaction, or information given by the recipient of a message to the sender. It is the process of letting someone know which areas they need to improve.

Feedback is essential to effective communication because it helps the sender check that their message has been understood and received as intended and modify their communication strategy as needed.

Feedback is crucial in two-way communication to ensure both sides are on the same page and can prevent misunderstandings or confusion. It also strengthens the bonds of trust and rapport between the sender and the recipient.



Characteristics of Feedback

Feedback in communication and learning processes is a crucial element, and it possesses the following key characteristics:

Timeliness: Effective feedback is delivered quickly, ideally soon after the observed behaviour or communication was noticed. Timely feedback is more useful and practical, as it helps people relate the feedback to the specific situation.

Specificity: Good feedback is clear, specific, and detailed, focusing on particular actions, behaviours, or elements of communication. Feedback that is vague or general is less useful for getting better.

Constructiveness: The goal of constructive feedback is to help the person receiving it get better and grow. Instead of being too negative or critical, it should be said in a way that is helpful and upbeat.

Clarity: Feedback should be easily understood and clear to the recipient. It should use straightforward language and leave room for confusion.

Relevance: Effective feedback is directly related to communication or job goals. It should address issues that are important and relevant to the situation.

Balance: Good feedback should balance both positive and negative aspects. It acknowledges strengths and achievements and also identifies areas that need improvement. This balance supports the preservation of motivation and morale.

Consistency: The expectations and requirements established for the work or communication should be reflected in the feedback. Feedback that is consistent promotes fairness and teaches people how to fulfil expectations.

Actionable: Feedback should provide steps for improvement. It should guide the receiver on how to make changes or modify their future actions or communication.

Respect: When providing feedback, show consideration for the recipient's thoughts and feelings. You should be considerate enough of the individual's emotions and self-esteem.

Goal-Oriented: The goals and objectives of the work or communication should be reflected in the feedback. It should help recipients progress towards achieving their intended outcomes.

Continuous: Feedback is not a one-time event but a continuous process. Feedback given on a regular and ongoing basis might result in growth and progress over time.

Confidentiality: Feedback should be kept confidential, especially when addressing sensitive or personal matters. Trust and privacy are essential considerations.

Cultural Sensitivity: Since different cultures may have different norms and expectations about feedback, feedback should be given with consideration for cultural variations and sensitivities.

In order to help people reach their objectives, improve their performance over time, and improve their communication skills, effective feedback is essential for both professional and personal growth.

Types of Feedback

In the world of communication, various types of feedback formats can be used to enhance understanding and strengthen relationships between individuals or within an organisation. Let's explore various types of feedback in communication and their significance.



Fact Locker

The frequency of feedback received by highly engaged employees is 43% on a weekly basis, but employees with low engagement only receive feedback at a rate of 18%.

Formal Feedback and Informal Feedback

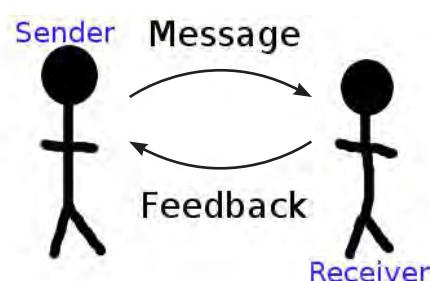
Formal feedback typically takes place in structured settings, such as performance reviews or evaluations. This type of feedback is often documented and follows a specific format or procedure. Formal feedback can provide a clear and objective assessment of an individual's performance, and covers many predefined points and has a specific blueprint allowing for targeted improvements and growth.

Example:

Excellent job! You have covered all the key points, and your writing is clear and concise.

You've made good progress on these math problems.

Informal feedback, on the other hand, is the most common type of feedback that occurs during day-to-day interactions. It can happen at any time, between anyone, and can be as valuable and helpful as unproductive and hurtful.



This kind of feedback usually comes out spontaneously and is often unprompted. When given in the right way, informal comments can help to build a supportive working environment when they are shared in the right way.

Example:

This is a wonderful thesis!

Wow, this is some of your best work yet!

TECHVICE

To enhance communication skills, practice active listening, maintain eye contact, and express your thoughts clearly. Be mindful of non-verbal cues, and seek feedback to improve.

Descriptive feedback and Non-Descriptive Feedback

Descriptive feedback provides useful information in a detailed, expensive manner that also contains some analysis, suggestions, etc.

Example:

“Each paragraph should mostly talk about one idea.” Only one paragraph met this requirement. The other paragraphs changed several ideas and tied the information together in a way that made sense.

“The conclusion of your article didn’t repeat your point or back up the evidence you talked about in the article.” “To keep this in mind, you need to rewrite the conclusion.”

Non-Descriptive feedback gives some detailed information but does not go into detailed descriptions. The feedback conveys a meaningful, specific response, but there is no descriptive analysis or advice.

Example:

“I only like the second part of your writing. Others need improvement.”

“The conclusion of your paper needs to be fixed.”

Specific and non-specific feedback

The **specific feedback** is focused on the most important detail and doesn’t say anything about the general overview.

Example:

“You mentioned all the points in logical sequence.”

“I like the ending. It was different than I expected.”

Non-specific feedback, on the other hand, is a general type of feedback that does not mention the specific reason for the feedback. It doesn’t really point out a certain thought or quality.

Example:

“I like your story. It is good.”

“You did great.”

Feedback can also be formative or summative. Feedback is considered formative if it can be given continuously throughout the year.

A summative format is provided at the end of the process and serves to provide a person with an overall assessment of their learning. It is usually given at the end of a session or year.

Brain Battle



What type of feedback adheres to a predetermined format or structure that the recipient formulates and transmits?



NOW I UNDERSTAND

- Feedback in communication is the response, reaction, or information given by the recipient of a message to the sender. It is the process of letting someone know which areas they need to improve.
- Feedback is crucial in two-way communication to ensure both sides are on the same page and can prevent misunderstandings or confusion
- Various types of feedback formats can be used to enhance understanding and strengthen relationships between individuals or within an organisation.

TRACK YOUR PROGRESS

I. Choose the Correct Answer:

- _____ plays an important role in communication as it tells both sender and receiver how the message was interpreted. *[CBSE Sample Paper 2022]*
(a) Media (b) Source (c) Courtesy (d) Feedback
- _____ feedback is specific information, in the form of written comments or verbal conversations that help the learner understand what she or he needs to do in order to improve.
(a) Descriptive (b) Specific (c) General (d) Sign
- Which of these are examples of positive feedback?
(a) Excellent; your work has improved. (b) I noticed your dedication to the project.
(c) You are always doing it the wrong way. (d) All of the above
- Which of these are examples of negative feedback?
(a) I hate to tell you this, but your drawing skill is poor.
(b) You can surely improve your drawing.
(c) These are good drawings, but you can do better.
(d) None of the above
- Which of the following is an effective component of good feedback?
(a) Detailed and time-consuming (b) Indirect
(c) Specific (d) Opinion-based

ANSWERS

1. (d) 2. (a) 3. (a) 4. (a) 5. (c)

II. Long Answer type Questions:

- What is the main purpose of feedback in communication?

Ans. The main purpose of feedback in communication is to ensure that the sender's message has been understood as intended, to help the sender make any necessary adjustments to their communication strategy, and to strengthen trust and rapport between the sender and recipient.

- What are the key characteristics of effective feedback in communication?

Ans. The key characteristics of effective feedback in communication include timeliness, specificity, constructiveness, clarity, relevance, balance, consistency, actionability, respect, goal orientation, continuity, confidentiality, and cultural sensitivity.

- Explain the difference between formal and informal feedback in communication. Provide examples of each.

Ans. Formal feedback occurs in structured settings, is often documented, and follows a specific format or

procedure, such as performance reviews. It provides a clear and objective assessment of an individual's performance. For example, "Excellent job! You have covered all the key points, and your writing is clear and concise." is formal feedback.

Informal feedback, on the other hand, takes place in day-to-day interactions, can happen at any time, and is not structured. It can be as valuable as it can be unproductive. For instance, "Wow, this is some of your best work yet!" is an example of informal feedback.

III. Competency/Application Based Question:

Critical Thinking

What do you know about feedback? Let us look at an example. Radha works with you. You are writing a report about how to handle trash in your store together. The boss has warned you both because she didn't finish her work on time, which caused the report to be late. Write down what you want to say to your team mates about how they're managing their time. Try to be clear and nice in your comments.

Ans. Feedback is the last part of communication and one of the most important parts because it is the answer that the receiver sends back to the sender.

Kind words for Radha

You're an important part of the team. You are very sincere about your work and do it well. You keep a good mood even though the deadlines for the report on how to handle the trash in your store are tight. You deal with problems without becoming frustrated or upset. When you have free time, I see you studying or trying to figure out the problem by looking over someone's shoulder. If you paid more attention to the delivery time, it would benefit the entire department.

IV. Activity Zone:

Life Skill & Values

In pairs or small groups, have the students go through each characteristic and discuss its significance in the communication process. They should also think of real-life examples where they have experienced feedback that either adhered to or violated these characteristics.

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SESSION 3 WAY TO EFFECTIVE COMMUNICATION

INTRODUCTION

Many of us communicate with people every day, either in person or on the countless digital platforms we have access to. But how much of our communication actually reaches the intended audience or person the way we want it to? Effective communication requires us to be thorough and precise in what we are trying to express.

Learning how to communicate information with clarity, empathy, and understanding is a necessary ability for effective communication in both our personal and professional lives. In this session, we'll define what effective communication looks like, discuss its principles, and also discuss the barriers to effective communication and how these barriers can be overcome.

PRINCIPLES OF EFFECTIVE COMMUNICATION

Transmitting precise thoughts and ideas is the primary objective of communication. Here are some guidelines to follow in order to guarantee efficient communication:

Clarity in Ideas: The first step in effective communication is for the sender to have an in-depth understanding of the message. If the sender has a clear idea of what they want to say, the word is more likely to get through to the receiver.

Appropriate Language: The language of the message should be easily understandable and leave no scope for misinterpretation.



Attention : Effective communication not only involves the transmission of information but also requires the person receiving it to be involved and pay attention in order to fully understand it.

Consistency: Communication should align with the main objectives, policies, and procedures of the intended message.

Adequacy: Information should be complete and sufficient to meet the needs of the receiver. The receiver should not be overloaded with unnecessary details or provide insufficient information.

Timeliness: Timeliness is very important for effective communication. The person who receives the message should get it at the right time so that the information is still current and useful to them.

Feedback: It's important for the sender to get feedback to make sure that the message was received correctly. Feedback is an important part of communication because it helps people understand how the message was received correctly and interpreted.

Flexibility: A communication method should be adaptable to changes. A communication system that is rigid and can't adapt to changes may become useless and out of date over time.

Economy: Communication should be cost-effective. Efficient use of resources is essential in communication; hence, it is advisable to explore other options that might effectively deliver the intended message at a lower cost.



7Cs OF EFFECTIVE COMMUNICATION

The 7Cs is an in-depth structure that serves as a checklist to ensure clarity and effective communication in various modes such as emails, meetings, calls, reports, presentations, and other communication methods. Its purpose is to ensure that the intended message is successfully conveyed to the receiver. The one who is aware of and makes use of these 7Cs in a sensible manner can become an effective communicator. In other words, a sender must adhere to the following rules for creating messages:

7Cs of Effective Communication	
Clear Clarity is when you transfer accurate and easily understandable messages to the receiver. Be clear about your goals. Let the receiver know what your objective is for the interaction. The content of your message should be simple and clear. Avoid using difficult phrases that make comprehension difficult.	Concrete A concrete message denotes your message to be specific, meaningful and focused. Avoid vague and puzzling messages. Include factual evidence and figures to add to the reliability of your message.
Complete Give full information about something rather than in bits and pieces. When delegating a task, give detailed information/instructions to carry out the task at hand.	Concise Do not get lost in the flow of the conversation. Concise or brief, well delivered messages have a greater impact on the listeners and are also more memorable. Avoid long sentences or paragraphs and focus on short sentences to convey your messages.

Courteous	Coherent
While communicating, consider the feelings and points of view of the receiver. It will naturally scale up the value of communication. Just using polite phrases like ‘thank you’, ‘sorry’, ‘please’, ‘excuse me’ is not enough. It also means to be honest, respectful and empathetic. Do not make any sarcastic or aggressive remark but conveying your message in an ethically polite way.	Ensure that the content of the message sticks to the topic. Follow a sequence that makes sense to the receiver.
Correct	The value and genuineness of your words lies in its correctness or legitimacy as it reflects directly on your personality. It is better to keep quiet rather than talk about something that you are not sure about. Use of correct words, sentences and grammar are some of the aspects of correctness. If your audience spots any errors or blunders in your speech they are bound to be distracted and your credibility would also be affected.

BARRIERS IN COMMUNICATION

There can be several barriers to effective communication that can result in confusion, which can lead to incorrect information being conveyed or miscommunication. These barriers include:

Semantic or Linguistic Barriers: Semantic barriers are also referred to as language barriers. These barriers are caused by differences in language. The following examples of semantic barriers can be seen in communication:

For example, a teacher is conversing in English with a group of students who understand and speak only Bengali.

Technical language: Language barriers also arise when the communicator uses technical terminology that the receiver doesn't understand. It gets in the way of effective communication, which leads to confusion and misunderstanding between the sender and receiver.

Interpersonal Barrier: Interpersonal barrier arises due to personal reasons such as:

Psychological Reasons: Psychological barriers are crucial to interpersonal communication as the state of the mind of the sender or the receiver can make it difficult to understand the information that is conveyed, which often results in misunderstanding.

Prejudices: Most individuals have predetermined ideas about a variety of topics, so they simply pay attention to what they want to hear instead of what is being stated. These erroneous presumptions and stereotypes cause communication hurdles.

Attitude: An attitude of being closed to new ideas or different perspectives can hinder effective communication. People with closed attitudes may dismiss or ignore information or viewpoints that do not align with their existing beliefs, preventing them from truly understanding the message being conveyed.

Organisational barriers: Organisational barriers are those that are caused by the structure, rules, and regulations that exist within the organisation. In most cases, organisation structure, rules and regulations, among other factors, act as barriers to effective communication.

Cultural barriers: Cultural barriers arise because different cultures have different beliefs. What is acceptable in one culture might be seen as slang in another.

Communication Barriers in Physical Form

There are many more components to a face-to-face conversation than just words. The entire communication process also takes into account gestures, body language, and facial expressions, among other things. Some messages can be missed if you can't see the recipient. Technology-based methods of communication, such as text messages and phone calls, don't have the same impact as face-to-face interactions.

MEASURES TO OVERCOME BARRIERS IN EFFECTIVE COMMUNICATION

The following actions can help break down barriers to communication:

Clarity of Idea: Be clear about the idea to be communicated to the receiver. It should align with the main objective of the message.

Active Listening: Pay close attention to what the other person is saying and ask clarifying questions to ensure you understand them correctly.

Use Simple Language: Avoid using complex jargon or vocabulary that might be confusing to the other person. Keep your language clear and straightforward.

Nonverbal Communication: Be mindful of your body language, facial expressions, and gestures. They can convey messages just as important as words.

Empathise: Try to see things from the other person's perspective and understand their feelings and emotions.

Be Patient: Don't rush the conversation. Give the other person time to express themselves, especially if they are non-native speakers or facing language difficulties.

Provide Feedback: Encourage the other person to ask questions and seek feedback to ensure that the message is being received correctly.

Choose the Right Medium: Use the most appropriate communication method, whether it's face-to-face, phone, email, or other tools, depending on the situation and the needs of the parties involved.

Cultural Sensitivity: Be aware of and respect cultural differences, as they can significantly impact communication. Learn about the customs, values, and norms of the other person's culture.

Avoid Assumptions: Don't assume that the other person knows what you're talking about. Be explicit and clear in your communication.

Seek Help: If needed, involve interpreters or translators to bridge language gaps.

Training and Education: Invest in training and workshops to enhance your communication skills and cultural awareness.

Practice and Feedback: Continuously practice your communication skills and seek feedback from others to improve your effectiveness in overcoming barriers.

By applying these measures, you can enhance your ability to communicate effectively and overcome various communication barriers.



Fact Locker

According to 2022 research by Zendesk, 68% of customers expect a personalized experience.



NOW I UNDERSTAND

1. Learning how to communicate information with clarity, empathy, and understanding is a necessary ability for effective communication in both our personal and professional lives.
2. The 7Cs is an in-depth structure that serves as a checklist to ensure clarity and effective communication in various modes such as emails, meetings, calls, reports, presentations, and other communication methods.
3. A communication barrier refers to a barrier that blocks the recipient's ability to receive and comprehend the message transmitted by the sender.

TRACK YOUR PROGRESS

I. Choose the Correct Answer:

[CBSE 2022]

ANSWERS

1. (d) 2. (c) 3. (a) 4. (b) 5. (c) 6. (a) 7. (b) 8. (a)



II. Short Answer type Questions:

1. What are the 7Cs of Effective Communication, and why are they important?

Ans. The 7Cs of Effective Communication are Clear, Concrete, Complete, Concise, Courteous, Coherent, and Correct. They are important because they serve as a checklist to ensure that messages are accurately and clearly conveyed, which is crucial for effective communication.

2. What is the significance of timeliness in effective communication?

Ans. Timeliness is essential in effective communication because the information must reach the recipient at the right time to be relevant and useful. Outdated information can lead to miscommunication and errors.

3. Explain one example of a cultural barrier to communication provided in the text.

Ans. A cultural barrier mentioned in the text is that different cultures have different beliefs, and what is acceptable in one culture might be seen as slang in another. For instance, a gesture or phrase considered polite in one culture may be offensive or inappropriate in another.

4. How can active listening contribute to overcoming communication barriers?

Ans. Active listening involves paying close attention to what the other person is saying and asking clarifying questions. It can help overcome communication barriers by ensuring that the message is understood correctly, clarifying misunderstandings, and showing empathy towards the speaker.

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SESSION 4 WRITING SKILLS

Basic writing skills are essential for effective communication. Whether you're writing an email, a report, a letter, or any other type of document, these skills can help you convey your message clearly and coherently. You learned about the basic parts of speech in the last class. Let us quickly revise those and learn a few more during this session.

PARTS OF SPEECH

A sentence is made up of words that play different parts in the framework of the sentence. Words can broadly be classified on the basis of the part they play or the work they do in a sentence. These classes are called the **Parts of Speech** and are eight in number. Understanding the different parts of speech can help you analyse how words function in a sentence and improve your writing.

Noun: A noun is a word that identifies a person, animal, place, thing, or idea. For example: Mumbai, Godrej, Kiran, Books.

Pronoun: Pronouns are the words that can take place of nouns. If someone or something has already been mentioned in a sentence, then the pronoun is often used in its place the next time. For example: I, you, he, she, it, they, we, me, you, him, etc.

Verb: A verb is defined as a word which shows action or state of being. For example: Birds build nests, We sleep at night.

Adjective: Adjectives are describing words. They are used to describe nouns or pronouns. For example: She wore a beautiful, long, black dress.

Articles: An article is a word that modifies a noun by indicating whether it is specific or general (a,an, the). For example: the door, the energy, the hills, the laughter.

Adverb: Adverbs are words which give us more information about a verb, an adjective, or another adverb. For example: He spoke softly, She talked to us cheerfully.



Prepositions: A preposition is a word (e.g. ‘at’) or group of words (e.g. ‘on top of’) placed before a noun or pronoun to show their relationship to the other parts of the sentence. For example: The stars shine at night, I kept my bag on the chair.

Conjunction: A conjunction is a word used to connect different parts of a sentence (e.g. words, phrases, or clauses). For Example: so, but, as well as both, because, etc.

Interjections: An interjection is a word or phrase used to express a feeling, give a command, or greet someone. For example: “Oh, alas!”, Hurrah!, Bravo!, Hey! etc.

BASIC OF PUNCTUATION

The tool that helps us organise our thoughts and make it simpler to review and share our ideas is punctuation. Period, comma, apostrophe, quotation, question mark, exclamation, etc. are all acceptable forms of punctuation in English.

The usage of some punctuation is explained in the section below:

- Capitalise the first letter of the first word in a sentence.

Capital letters are used for:

Proper nouns: Narendra Modi, Professor, Indira Gandhi National Open University.

Names of holidays: Deepawali, Christmas Day, Republic Day

Geographical names: London, New Delhi

Public thoroughfares: Princes Street

Important events: Graduation Day

Journal titles: International Journal of Information Management

The first letter of book titles: The Brain That Changes Itself

Days of the week, months: January, Sunday

- End a sentence with a period, question mark, exclamation point, or quotation mark.

Full Stop or Period (.)

The period, which is also called a full stop in British English, is probably the simplest of the punctuation marks. Generally, you can break up the sentences with a full stop at the end of a complete and reasonable thought that makes sense to you. We also use it to from an abbreviation. For Example: Dr. for Doctor, Mr. for Mister.

Question Mark (?)

A question mark (?) is placed at the end of a sentence which is a direct question. Here are some examples: What is the capital of Wales? What is your name?

Exclamation Point (!)

An exclamation point(!) is placed at the end of a sentence that express strong emotions.

Apostrophe (')

An apostrophe is a punctuation mark that shows possession, the omission of letters from a word, or the plural form of a letter or number. The apostrophe looks like a comma, but it doesn’t go on the line at the bottom of the letters in a word. Instead, it sits between two letters at the top, with the curl facing left.



Some of the examples are:

- Bill's bike is on the front porch. (Possession)
- The class' grades were lower than the first test. (Plural Possession)
- I don't go out when the temperature is below 20 degrees. (Contraction/Omission)
- The 1960's were a time of change in the U.S. (Plural of Letters or Figures)

Comma (,)

A period ends a line, but a comma indicates a smaller break. A comma is a punctuation mark that separates words, clauses, or thoughts in a sentence. Some writers think of comma as a soft pause.

Some of the examples are:

- It's raining, so let's grab our umbrellas.
- "Let's climb higher," said Vani.
- I need to buy eggs, milk, bread, laundry detergent, and crackers.
- Aadya said, "I'm ten years old."

Colon (:)

Colons are used to introduce a list, an explanation, or a quotation. They can also separate hours from minutes in a time expression (e.g., 3:30 PM).

Hyphen (-)

Hyphens are used to join compound words (e.g., well-known), indicate a range (e.g., pages 10-15), and clarify word meanings (e.g., re-cover, meaning to cover again, versus recover, meaning to get better).

Parentheses ()

Parentheses enclose additional or clarifying information within a sentence. This information is not considered essential to the main idea.

Quotation Marks (")

Quotation marks are used to enclose direct speech or to indicate titles of shorter works (e.g., "The Catcher in the Rye"). Single quotation marks (' ') are often used for quotes within quotes.

PHRASE

A phrase is a group of words that work together in a sentence but do not contain a subject or a verb. Often, phrases are used for descriptions of people, things, or events.

For example:

- Filled with joy, the girl jumped up and down.
- The man with the red jacket is my father.

WHAT IS A SENTENCE?

A sentence is a group of words that make complete sense. The words in a sentence have to be placed in the right sequence in order make sense.

A sentence always begins with a capital letter and ends with a full stop (.) if it is a statement, a question mark (?) if it is a question, and exclamation mark (!) if it is an exclamatory sentence.

A sentence has a subject and a predicate.



How do you arrange a sentence?

The subject, verb, objects, phrases, punctuation, and other parts of a sentence are put in a certain order. This is called sentence structure. It talks a lot about independent and dependent clauses and how they work together, as well as the right way to use language and where to put words and phrases next to the things they change.

Recapitulate

A verb must agree with the subject in the sentences.

Singular noun takes a singular verb and a plural noun takes a plural verb.

The verb is always in plural when we use the pronoun you.

Types of Sentences

There are four main kinds of sentences:

- Assertive sentences or Statements - these can be affirmative or negative.
- Interrogative sentences - these too can be affirmative or negative. Statements and questions are the most common kinds of sentences in speech and writing.
- Exclamatory Sentences - these express strong emotions and feelings.
- Imperative Sentences - these include commands, requests and wishes. Imperatives usually begin with a verb and the subject is implied. Sometimes, imperatives may consist only of a verb or verbal phrase.

Assertive or Declarative Sentences

A declarative sentence whether affirmative or negative, relay information or ideas. They are punctuated with a period (full stop) and the subject usually comes before the verb. Essays, reports, factual descriptions are usually composed almost entirely of statements.

Example:

- The woman is holding a baby. (statement)
- They will not cheat you at this shop. (negative statement)

Imperative Sentences

Imperative sentences express commands, requests, a wish or a warning. Usually, they are punctuated with a period, but sometimes they may consist of exclamations requiring an exclamation mark. This depends on the strength of the emotion expressed.

Example:

- Don't touch the painting. (command)
- Look out! (warning)

Exclamatory Sentences

Exclamatory sentences express strong emotion; it does not really matter what the emotion is. Exclamatory sentences always end using exclamation mark, which makes them easy to spot. Exclamatory sentences can consist of a single verb or verbal phrase or they can be lengthier and more complex.

Example:

- The river is rising!
- I can't wait for the party!



Interrogative Sentences

Interrogative sentences are also easy to spot because they ask questions and always end in a question mark.

Example:

- Is it snowing?
- Have you had breakfast?
- Interrogative may require a simple yes or no response or a more detailed answer.

Part of a Sentence

Typically, a sentence is made up of multiple components, each of which has a distinct purpose. The primary components of a sentence are:

Subject: The subject is the main part of the sentence and typically represents who or what the sentence is about. It often includes a noun or pronoun.

For example, in the sentence “She is riding a bicycle”, “She” is the subject.

Predicate: The predicate is the part of the sentence that contains the verb and provides information about what the subject is doing or what is happening. In the sentence “She is riding a bicycle”, “riding a bicycle” is the predicate.

Verb: The verb is a crucial part of the predicate since it describes the action or state of being. In the sentence “She is riding a bicycle”, “is riding” is the verb.

Object: An object is a noun or pronoun that receives an action and gets affected. There are two main types of objects:

Direct Object: The noun or pronoun that directly receives the verb’s action is known as the direct object. In the sentence “She is riding a bicycle”, “bicycle” is the direct object.

Indirect Object: An indirect object is a noun or pronoun that indirectly receives the action of the verb and often tells to or for whom or what the action is done. For example, in the sentence “He gave her a gift”, “her” is the indirect object.

ACTIVE AND PASSIVE VOICE

In grammar, voice refer to the form of a verb that shows whether the subject of a sentence performs the action (the active voice) or is affected by it (the passive voice).

Active Voice

Rajat wrote a letter.

This sentence says what Rajat did—he wrote a letter. Rajat is the subject, and the verb wrote expresses the action done by Rajat. Such verbs are said to be in the Active voice.

Passive Voice

A letter was written by Rajat.

This sentence says what was done to a letter. A letter is the subject, but the verb that was written does not express any action by the subject. On the other hand, it ‘expresses the action suffered by him’. These verbs are said to be in the Passive Voice.

How to Convert Active Voice to Passive Voice?

Usually only those verbs can be passivized which have an object. A typical active voice should have the following parts in order to be passivized:

Subject (Doer) + Verb + Object

Rajat wrote a letter



Step 1: Put the object in place of the subject and the subject in place of the object.

Active: Rajat wrote a **letter**.

Passive: A **letter** was written by Rajat.

Step 2: According to the tense and the subject, use an appropriate form of the verb. Convert the given verb into its past participle form as shown in the examples below:

Active Voice	Passive Voice
play/plays	is/are/am played
do/does (not) play	is/am/am (not) played
played	was/were played
did (not) play	was/were (not)
is/are/am (not) playing	is/are/am (not) being played
was/were (not) playing	was/were(not) being played
has/have/ (not) played	has/have(not) been played
had(not) played	had(not) been played
will/shall/would	will/shall/would
should/can	should/can
could/may/might	could/may/might
must, ought to	must, ought to
to play	to be played
play	be played/ should be played

Step 3: You may have to use an appropriate preposition like by before passive object whenever it is mentioned.

Subject in the Active Voice	Object in the Active Voice	Subject in the Active Voice	Object in the active Voice
I	by me	she	by her
we	by us	It	by it
you	by you	they	by them
he	by him	Ravi	by them

Note:

- When we change a sentence from the active voice to the passive voice the tense of the verb remains the same.
- The verb has to agree with the subject of the sentence.



NOW I UNDERSTAND

1. A sentence is a group of words that make complete sense.
2. The words in a sentence have to be placed in the right sequence in order to make sense.
3. A sentence always begins with a capital letter and ends in a full stop(.) If it is a statement, a question mark (?) if it is a question, and an exclamation mark (!) if it is an exclamatory sentence.
4. A sentence has a subject and a predicate.

TRACK YOUR PROGRESS

I. Identify the type of Sentences:

1. Please pass me the salt.
2. What a beautiful day it is!
3. Turn off the lights before leaving.
4. Are you coming to the party?
5. The cat is sleeping.

ANSWERS

1. Imperative 2. Exclamatory 3. Imperative 4. Interrogative 5. Declarative

II. Identify the Subject and Predicate in the Following Sentences:

1. The sunsets in the evening are spectacular.
2. She sang a beautiful song during the concert.
3. Running in the park and laughing with friends is my favourite activity.
4. After a long day at work, he enjoys a relaxing cup of tea.

ANSWERS

1. Subject - The sunsets in the evening
Predicate - are spectacular.
2. Subject - She
Predicate - sang a beautiful song during the concert.
3. Subject - Running in the park and laughing with friends
Predicate - is my favourite activity.
4. Subject - he
Predicate - enjoys a relaxing cup of tea.

III. Change the Active Voice to Passive Voice:

1. Sheela sweeps the floor every day.
2. I broke this toy.

3. Please wait for me.
4. Let him sing a song.
5. Open the window.

ANSWERS

1. The floor is swept by Sheela every day.
2. This toy was broken by me.
3. You are requested to wait for me.
4. Let a song be sung by him.
5. Let the window be opened.

SESSION 5 PARAGRAPH CONSTRUCTIONS

INTRODUCTION

A paragraph is a piece of writing that usually discusses a central idea, typically with more than one sentence. It is the building block of long pieces of writing. There should be at least one line in a paragraph, all of which should relate to the same topic. It's important to use paragraphs to organise long pieces of writing like books, papers, and even emails. Every paragraph should focus on a different subject.

Let us now walk you through the process of writing strong paragraphs.

Step 1: Figure out the topic of the paragraph

Firstly, you need to know what the main idea is that will organise this paragraph. You should already have a clear understanding of what each paragraph will attempt to accomplish if you have created a plan or outline for your paper's general structure.

Step 2: Show why the paragraph is relevant

Write one sentence that talks about the topic, which will feature in the rest of the paragraph. A good topic sentence should always contain a topic and a controlling idea.

Step 3: Support/Explanation

You can now provide examples and facts to back up your claim. Here, 'evidence' refers to more than just actual data; it can take many different forms, depending on your discipline, subject, and methodology. In academic writing, common types of evidence include:

- quotes taken from books, speeches, and other primary sources
- summaries, quotations, or paraphrases from secondary sources that offer data or analysis in support of your claim
- data, either qualitative or quantitative, that you have obtained or discovered through a previous study.
- qualitative or quantitative data that you have gathered or found in existing research

Step 4: Explain or interpret the evidence.

You must now demonstrate to the reader how this evidence supports your claim. The type of evidence you employ will determine how you proceed.

- If you used a paragraph as a quote, explain what you meant by it.



- If you used a statistic, explain to the reader what it means for your point of view.
- If you cited details from a secondary source, explain how they further the paragraph's main point.
- If you referred to information from a secondary source, show how it developed the idea of the paragraph.

Conclude the paragraph

Finally, wrap up the paragraph by returning to your main point and outlining the overall effects of the evidence you've examined before concluding the paragraph.

Word Finder

Writing Skills: The skills you use to write effectively.

Parts of Speech: A part of speech (also called a word class) is a category that describes the role a word plays in a sentence.

TRACK YOUR PROGRESS

1. What is your idea of an ideal teacher?
2. Give your views by completing the paragraph using the clues provided.

positive attitude	open-minded	flexible	an inspirer
disciplined	just and impartial	visionary	stern
progressive	motivator	understanding	

ANALYSE YOUR KNOWLEDGE

I. Choose the Correct Answer:

1. You cannot park your car anywhere _____ this building for security reasons. [CBSE 2019]

(a) from	(b) around	(c) like	(d) for
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2. Which of these can occur at any stage of the communication cycle?

(a) Noise	(b) Feedback	(c) Evaluation	(d) Idea
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3. Alice asked _____ students if they had seen her new orange bag. [CBSE 2018]

(a) some	(b) a little	(c) little	(d) any
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4. Which of the following is NOT an element of communication within the communication process cycle? [NCERT]

(a) Channel	(b) Receiver	(c) Sender	(d) Time
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5. Which of these is an imperative sentence? [NCERT]

(a) Switch off the fan	(b) Sheila has gone to the market
(c) Where are my Pen colours?	(d) Oh no! I missed my flight

6. Suppose you are trying to read a book in a room filled with loud noise, what kind of communication barrier to understanding the book content are you facing.
 - (a) personal
 - (b) intra-personal
 - (c) environmental
 - (d) inter-personal

7. When the sender's message is received differently from how it was intended, is known as _____.
 - (a) Organisational barrier
 - (b) interpersonal barrier
 - (c) Physical barrier
 - (d) Language barrier

8. Which of these does not pose a barrier to communication?
 - (a) planning
 - (b) noise
 - (c) physical disabilities
 - (d) lack of trust

II. Fill in the Blanks:

1. We really enjoyed _____ on the trip to Manali last month. [CBSE Question Paper 2021]
2. _____ are a group of words that work together to communicate an element of speech. [CBSE Question Paper 2021]
3. In _____ communication a channel carries a message from a sender and delivers it to the receiver.
4. Any disturbance or interference in the communication process is called _____.
5. The feedback that is given continuously throughout the year is called the _____ feedback.
6. If a message is communicated without proper _____ then it may not have the desired effect.
7. _____ communication take place between two individuals and thus a one-on-one conversation. [CBSE Question Paper 2022]
8. The _____ communication barriers are relatively out of the individual's control.
9. Anything that prevents dissemination or comprehension of a message is called a communication_____.
10. The communication barriers which are well within our control are the _____ barriers.

III. Short Answer type Questions:

1. Briefly explain the communication cycle.
2. Why is feedback so important in the process of communication?
3. What is the meaning of communication barriers?
4. List two best practices for effective communication. [CBSE Sample Paper 2024-25]

IV. Long Answer type Questions:

1. Explain four types of sentences in English. [CBSE 2019]
2. What do you mean by prepositions? Write any two examples of prepositions. [CBSE 2020]
3. Give one example each of the verbal and non-verbal feedback.

V. Direction: In the questions given below, there are two statements marked as: Assertion (A) and Reason (R). Choose the correct option given below for each question:



- (a) Both A and R are true, and R is the correct explanation of A.
 - (b) Both A and R are true, and R is not the correct explanation of A.
 - (c) A is true, but R is false.
 - (d) A is false, but R is true.
1. Assertion: Effective communication is crucial for personal and professional success. Reason: Good communication skills facilitate goal setting, task completion, persuasion, and relationship building. Whether in personal life or the workplace, effective communication helps in transmitting ideas, understanding others, and fostering a shared understanding, ensuring success in various endeavours.
 2. Assertion (A): Communication does not include all human behaviour for the exchange of information.
Reason (R): Communication involves the use of all five senses.
 3. Assertion (A): Verbal communication takes place in real time. Reason (R): Written communication is synchronous in character as it appears at different levels.
 4. Assertion (A): Timeliness is a key characteristic of effective feedback in communication.
Reason (R): Timely feedback enables individuals to relate feedback to specific situations, enhancing its usefulness.
 5. Assertion (A): Descriptive feedback in communication provides detailed analysis and suggestions for improvement. Reason
(R): Non-descriptive feedback lacks specific information and doesn't offer valuable insights for enhancing performance or communication.

For worksheet, scan the QR code.



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