

Booklet on Computer Training for Persons with Deafblindness



Resource and Information Unit

Booklet on Computer Training for Persons with Deafblindness

Print support:



Supported by:



© Sense International India, 2021 All Rights Reserved

Sense International India
2nd Floor, Admin Block,
Andhjan Mandal Campus
Vastrapur, Ahmedabad
India - 380015
Phone: +91 79 26301282

Email: info@senseintindia.org, Website: www.senseintindia.org

ISBN- 978-81-951593-7-6

Copyright© 2021

Title: Booklet on Computer Training for Persons with Deafblindness

Author: Mr. Sachin Rizal, Ms. Kalyani Jadhav, Mr. Ranchod Soni, Ms. Krupa Velani,
Mr. Srinivasan. P, Mr. Rashmikant Mishra, Ms. Mercy Chingnunmuang, Mr. Uttam
Kumar
and Mr. Akhil Paul

Layout & Design by Mr. Shivkumar Sharma

First published in India in 2021

This book is published, produced, and distributed by Sense International India.

Sense International India
2nd Floor, Admin Block
Andhajan Mandal Campus
Vastrapur, Ahmedabad 380 015
Tele: +91 79 26301282
Website: www.senseintindia.org
Email: info@senseintindia.org

All Rights Reserved

No part of this book may be reproduced or used in any form or by any means (graphics, electronic, mechanical, photocopying, recording, taping, web distribution, information storage and retrieval systems or otherwise) without prior written permission of the publisher.

Printed in India

Acknowledgement

We are grateful to the staff, management, and special educators at our partner organizations, as well as the students with deafblindness and their parents. We extend our gratitude to every individual who played a role in the success of this booklet. We would especially like to express our appreciation to Australian Aid and the Blind Peoples Association (BPA) Deafblind Regional Centre (DbRC West) for their significant contributions.

Australian Aid serves as the international aid organization of the Australian Government and operates under the Department of Foreign Affairs and Trade. Formerly known as the Australian Agency for International Development (AusAID), Australian Aid has generously supported BPA, DbRC West in the creation of this booklet. The West region, encompassing Ahmedabad, Porbandar, Sayla, and Surendranagar, has benefited from this collaboration.

Blind People's Association (BPA) stands as one of the esteemed partner organisations affiliated with Sense International India (also known as Sense India). BPA functions as the Deafblind Regional Centre (DbRC) in the Western region of the country. BPA, a non-profit organization, is dedicated to assisting individuals with Disabilities (PwDs) in achieving independence across educational, vocational, and financial domains. Their scope of work encompasses various disabilities such as visual impairment, hearing impairment, deafblindness, intellectual disability, orthopaedic impairment, and multiple disabilities.

Sense India stands as the sole national-level organization that provides essential services tailored to address the unique challenges faced by children and adults with deafblindness. Sense India's primary objective is to provide information, guidance, support, and training, all geared towards empowering Persons with Deafblindness (PwDBs) and those with Multiple Disabilities (Mds), along with their families. This empowerment approach includes raising awareness, advocating for their rights, opportunities, and comprehensive services across the nation.

Special mention goes to the contributions, creativity and diligence of Mr. Sachin Rizal, Ms. Kalyani Jadhav, Mr. Ranchod Soni, Ms. Krupa Velani, Mr. Srinivasan. P, Mr. Rashmikant Mishra, Ms. Mercy Chingnunmuang, Mr. Uttam Kumar and Mr. Akhil Paul. They have constantly reviewed the chapters or sections of chapters, by editing, adding compiling with never ending enthusiasm.

Once again, we extend our heartfelt gratitude to everyone who contributed to the creation of this booklet and the advancement of our shared mission.

Introduction

In the field of rehabilitation, a majority of people are embracing technologies like computers, mobiles, laptops, and various other gadgets to enhance the accessibility of daily life. Individuals with deafblindness are no exception to this trend. According to the Rights of Persons with Disabilities (RPwD) Act 2016, every person with a disability has the right to utilize technologies on par with those without disabilities. However, Persons with Deafblindness (PwDb) encounter numerous challenges when it comes to staying connected with people within and beyond their immediate circles and accessing quality education. Limited modes of communication and social isolation often isolate them from society, leading to restricted access to information and deficient social skills.

Various technologies and devices available in the market for PwDbs represent a step toward inclusivity. Nevertheless, despite the availability of resources, a significant gap remains in meeting the needs of PwDbs. To integrate PwDbs into society, providing training in the use of various technological devices becomes crucial as it enables them to overcome the limitations they typically face. Devices like refreshable braille displays, screen readers, and screen magnifiers are valuable tools that enhance accessibility. For instance, using computers equipped with refreshable braille devices can enable PwDbs to advance in their education and pursue diverse job opportunities. Many PwDbs express a strong desire for computer training to secure a better future, but their access to training centres or professionals well-versed in providing computer training to PwDbs is limited.

A PwDb who experiences hearing and vision impairment, resulting in communication challenges, requires training from professionals who possess expertise in deafblindness and computer operation. Recognizing the demand for teachers and special educators capable of providing computer training to PwDbs, this booklet on computer training has been created as a guide for teaching computers to individuals with deafblindness. To bring this booklet to fruition, we received invaluable support from Australian Aid, Australia, and BPA, Ahmedabad.

The creation of this booklet is guided by the aim of empowering PwDbs to achieve independence and proficiency in utilizing technology. It equips educators with a foundational understanding of deafblindness and outlines steps to effectively teach computer skills to individuals with deafblindness. The booklet encompasses a range of strategies employed in providing computer training to these learners.

Our Vision

Our Vision is of a world in which all children and adults with deafblindness and multiple disabilities can be full and active members of society.

Our Purpose

Our purpose is to work in partnership with others - people with deafblindness and multiple disabilities, their families, caregivers and professionals - to ensure that everyone facing challenges because of deafblindness and multiple disabilities has access to advice, opportunities and support.

Table of Contents

| | |
|--|----|
| 1. Unit One: Introduction to Deafblindness..... | 9 |
| 1.1. What is Deafblindness?..... | 9 |
| 2. Unit Two: Basics of Computer..... | 10 |
| 2.1. What is computer?..... | 10 |
| 2.2. What is an operating system?..... | 11 |
| 2.3. Memory..... | 11 |
| 2.4. File and folder..... | 11 |
| 2.5. Booting..... | 12 |
| 2.6. Desktop..... | 12 |
| 2.7. Taskbar..... | 12 |
| 2.8. Start menu..... | 12 |
| 2.9. Keyboard Orientation..... | 12 |
| 2.10. Evaluation..... | 13 |
| 2.11. Adaptation for Learners with Deafblindness..... | 13 |
| 3. Unit Three: Introduction to NVDA..... | 14 |
| 3.1. Insert key..... | 14 |
| 3.2. Keyboard input help on..... | 14 |
| 3.3. Settings..... | 15 |
| 3.4. Speech mode on/ off..... | 15 |
| 3.5. Frequently used key commands of NVDA..... | 15 |
| 3.6. Evaluation..... | 17 |
| 3.7. Adaptation for Learners with Deafblindness..... | 18 |
| 4. Unit Four: Orbit & Computer Introduction to Orbit 20..... | 19 |
| 4.1. Orientation of the device..... | 19 |
| 4.2. Key features of Orbit 20..... | 20 |
| 4.3. How to use Orbit 20..... | 20 |
| 4.4. Reading mode..... | 23 |
| 4.5. File manager..... | 24 |
| 4.6. System Menu..... | 24 |
| 4.7. Remote mode..... | 25 |
| 4.8. How to connect Orbit 20 with computer..... | 25 |
| 4.9. Evaluation..... | 27 |
| 4.10. Adaptation for Learners with Deafblindness..... | 28 |

| | |
|--|----|
| 5. Unit Five: Microsoft Word..... | 29 |
| 5.1. Creating a new document..... | 29 |
| 5.2. Opening an Existing Document..... | 29 |
| 5.3. How to Close a File..... | 30 |
| 5.4. How to Save a Document..... | 30 |
| 5.5. Understanding the Screen..... | 31 |
| 5.6. Quick Access Toolbar and Document Window..... | 31 |
| 5.7. Deleting, Reading, and Navigation Commands..... | 32 |
| 5.8. Evaluation..... | 37 |
| 5.9. Adaptation for Learners with Deafblindness..... | 37 |
| 6. Unit Six: Part 1- Internet..... | 38 |
| 6.1. How to search information..... | 39 |
| 6.2. Evaluation..... | 41 |
| 6.3. Adaptation for Learners with Deafblindness..... | 41 |
| 7. Unit Six :Part 2 - Email..... | 42 |
| 7.1. How is an email address formed?..... | 42 |
| 7.2. How to read your mails?..... | 43 |
| 7.3. Evaluation..... | 44 |
| 7.4. Adaptation for Learners with Deafblindness..... | 44 |
| 8. Closing Remark..... | 45 |
| 9. References..... | 46 |

1. UNIT ONE: INTRODUCTION TO DEAFBLINDNESS

1.1 What is Deafblindness?

Deafblindness" refers to a condition that involves a combination of hearing and visual impairments. This type of dual sensory loss does not always result in complete deafblindness; rather, it comprises varying degrees of hearing and vision impairments. These combined sensory challenges often contribute to delays in a person's overall development, affecting cognitive growth, social interactions, as well as the acquisition of language and communication skills

Classification of deafblindness:

- 1. Congenital Deafblindness:** Some children are born with deafblindness, often due to conditions such as Rubella Syndrome. In these instances, a pregnant mother contracts German Measles during her first trimester of pregnancy, exposing the developing foetus to the Rubella virus. This can result in a range of issues for the newborn, including vision, hearing, and heart problems.
- 2. Congenitally Deaf and Adventitious Blind:** There are children who are born with deafness and later experience vision loss over a period. This type of deafblindness is known as Usher Syndrome, characterized by varying degrees of deafness followed by progressive loss of sight due to Retinitis Pigmentosa (RP). However, individuals with Usher Syndrome may retain some level of sight through tunnel vision in certain cases, while others might experience complete blindness.
- 3. Congenitally Blind and Adventitious Deaf:** Another type of deafblindness involves children who are born with blindness, followed by hearing loss.
- 4. Adventitious Deafblindness:** The children are born with normal vision and hearing sensitivity, later in life, due to illness/infection/accident there might lose their vision and hearing and become deafblind. Deafblindness can also occur due to factors such as old age.



A student with deafblindness practicing letters on paint

- 5. Functional Deafblindness:** Children who face challenges in using their sense of vision and hearing is known as functional deafblindness. The anatomy of eyes and ears may not have any issues but, they may experience difficulties in perceiving the signals received from vision & hearing and find challenges in fulfilling their day today activities.



Student from BPA using computer

2. UNIT TWO: BASICS OF COMPUTER

Learning computer skills is crucial in today's world. When we consider the inclusion of people with deafblindness in society, focusing on their rights and education, it becomes essential for them to develop their capacity. By acquiring computer skills, individuals with deafblindness not only gain independence but also open doors to better job opportunities.

Computers have become integral to our lives, being used across various fields such as education, entertainment, business, finance, arts, and literature. The high level of accuracy, incredible speed, and ease of performing tasks make computers indispensable. Moreover, the rapid advancement in assistive technology has made computer operation equally efficient for individuals with disabilities. The invention of the refreshable braille display has empowered people with deafblindness to interact with computers. Acquiring computer literacy allows individuals to connect with the world and explore numerous career prospects.

This course aims to educate individuals with deafblindness about computer literacy, enabling them to engage with the world and seize new opportunities. Before delving into computer skills, it is essential to grasp some basic concepts and commonly used terms in the field of computers.

2.1. What is a Computer?

A computer is an electronic device that accepts data as input, processes the data into information, stores the information for future use, and produces output whenever necessary. In simpler terms, when we provide data to the computer, it is referred to as input. The computer then processes the data and generates results, which are known as output. The tools we utilize to provide input are known as input devices, and the equipment used to obtain output are called output devices. Commonly used input devices include keyboards, mice, scanners, and microphones, while monitors, printers, and speakers are typical output devices.

Another Common Pair: Hardware and Software We frequently encounter the terms "hardware" and "software." Hardware refers to physical entities that can be touched, such as keyboards, mice, monitors, and CPUs. On the other hand, software is abstract and represents the programs we install in the computer.

Every computer requires two types of software: *system software and application software*. Operating systems fall under system software, while programs used by users for various tasks are considered application software. For instance, Microsoft Word, Microsoft Excel, and Internet Explorer are examples of application software.

2.2. What is the Operating System?

An operating system stands as the most vital software that powers a computer. It efficiently manages both hardware and software components. It enables users to interact with the computer without needing to know complex computer languages. Often, we run multiple programs concurrently, and each program requires access to different software and hardware resources. An operating system ensures that each program obtains what it requires. Essentially, an operating system serves as a controller, supervisor, and resource allocator. Commonly used operating systems include Windows, Linux, and iOS. For this course, we will be using Windows as our operating system.

2.3. Memory

Just as we rely on our memory to remember things, computers require memory to process and store data. There are two main types of memory: **primary memory and secondary memory**. One important component of primary memory is RAM (Random Access Memory).

RAM is also referred to as volatile memory since it retains information only as long as the process is active or the computer is operational. The speed of a computer is significantly influenced by its RAM.

Another category is secondary memory, which is non-volatile or permanent memory. Examples of secondary memory include hard disk drives, compact discs, digital versatile discs, memory cards, and pen drives. The smallest unit of memory is called a byte, consisting of eight bits. A kilobyte comprises 1024 bytes, a megabyte contains 1024 kilobytes, a gigabyte consists of 1024 megabytes, and a terabyte is made up of 1024 gigabytes. So, when we mention a sixteen GB pen drive, we are indicating its storage capacity.

2.4. File and Folder

We encounter files and folders in office settings, using various files for distinct purposes and projects. Organizing these files in folders or drawers ensures easy accessibility when needed. Similarly, digital, or virtual files and folders are created in computers to store information. A file represents the fundamental unit of secondary data storage on a computer and is identified by its unique name. This means that identical names cannot exist for two files within the same folder, but they can in different folders. It means that there cannot be two files with the same name in the same folder. But there can be two files with the same name in different folders. We create different type of files depending on our needs and purposes. The file extension indicates its type. For instance, '.txt' designates a notepad file, '.doc' signifies a Word file, and '.brf/.brl' denotes various braille file formats.

We create folders to store files in them. We cannot enter any data in the folder but can store files only. We can create sub-folder in a folder. It is necessary to understand file folder system to store the information in such a way that we can get any file without wasting time when needed.

2.5. Booting

To start the computer, we press the power button. The computer takes a certain amount of time to begin its operations. This process of starting up the computer is referred to as booting.

2.6. Desktop

Upon computer startup, the primary screen that becomes visible is known as the desktop. This area displays various icons, which visually represent programs, files, and folders. It is recommended to avoid cluttering the desktop with excessive files and folders. You can quickly access the desktop by pressing the Windows key along with the "M" key or using the Windows key in combination with the "D" key.

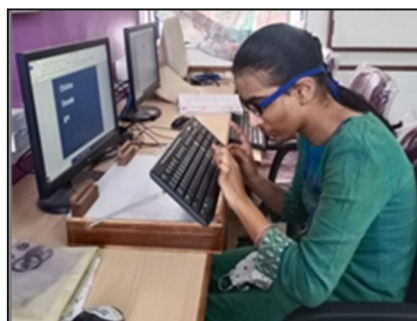
2.7. Taskbar

The taskbar is a horizontal line at the bottom of the screen. We can see all minimized files and applications in the taskbar. On the right side of the taskbar, you will find the notification bar, while the left side is the start menu. To access the taskbar, press the Windows key and "B" key. You can navigate through the items on the taskbar using the left and right arrow keys.

2.8. Start Menu

By pressing the Windows key or Control key plus the Escape key, you can open the start menu. This menu provides access to all installed programs on the computer. When the start menu is opened, the cursor is positioned in the search option. You can launch any program, file, or folder by typing its name in the search option.

2.9. Keyboard Orientation



Student from BPA using computer with adaption in keyboard position

Keyboards are divided into three types of keys: **character keys, action keys, and function keys.**

Character keys are letters, numbers, and symbols.

Action keys trigger specific actions, such as Control, Escape, and Insert.

The topmost row next to the Escape key contains **twelve function keys.**

These keys perform varied functions in different programs and in combination with other keys. On the keyboard's far right, there is a numeric keypad. It functions as a numeric pad when Num Lock is activated. When Num Lock is turned off, these keys assume different roles.

Now, you can begin typing practice, starting from the middle row, to typing the English alphabet, and then forming sentences that has all English letters. *An example sentence for practice is: "A quick brown fox jumps over the lazy dog."*

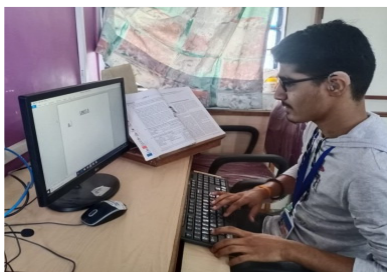
2.10. Evaluation

- What is a computer?
- What are two types of software?
- What is file and folder?
- What is the file extension of word file?
- What is desktop?
- What is taskbar?
- What is menu?

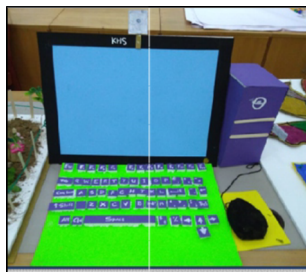
2.11. Adaptation for Learners with Deafblindness

The content can be provided in Braille for learners with total deafblindness, while learners with low vision can access the content in large print format. Teachers can demonstrate computer functions using sign language for learners with low vision and hearing loss, and provide tactile pictures or braille labels for learners with blindness. Including both pictures and descriptions on the same page can be beneficial for learners with low vision. A deafblind service user from BPA is typing study materials with font size increased for accessibility

The keyboard can be adapted by using large print alphabets for learners with low vision. For learners with low vision, the screen can be magnified, and screen readers can be utilized along with it for those with residual hearing. Additionally, a Refreshable Braille Device (as explained in Unit 3 on page 19) can be employed to demonstrate computer functions in Braille for learners with total deafblindness. Using a physical model of a computer can also enhance learners' exploration of the device. Practical teaching of keyboard usage and functions can further enhance their understanding. During evaluations, learners with deafblindness can perform demonstrations and point out different parts of the computer system. They can provide answers using Braille or through sign language.



A deafblind service user from BPA is typing study materials with font size increased for accessibility



Model of Computer

3. UNIT THREE: INTRODUCTION TO Non-Visual Desktop Access (NVDA)

Introduction:

People with visual impairments and deafblindness may require a screen reader (Refreshable Braille Display - Refer to Unit 3 on page 19 for details) to operate computers. A screen reader provides both audio and braille output of the text displayed on the screen, including input, output instructions, and more. Moreover, it eliminates the need for using a mouse by offering various key commands. Multiple screen readers are available, each catering to different user groups with varying advantages. One such screen reader we will explore is Non-Visual Desktop Access, commonly known as NVDA. There are several reasons for selecting NVDA as our screen reader:

1. It is an open-source screen reader, available free of cost.
2. It supports not only English and other foreign languages but also works with major Indian languages.
3. It is compatible with all Refreshable Braille Displays.

The website for installing this software is www.nvaccess.org

Usually, during installation, the "Automatically start NVDA" option is selected. This means that NVDA will start working when you start your computer. However, if this option is not selected or if NVDA stops working for any reason, you can follow these steps to start NVDA:

1. Press the Windows key. This will open the Start menu.
2. Type "NVDA".
3. Press Enter. NVDA will then start functioning.

3.1. Insert Key:

The key that plays a crucial role in using NVDA is the Insert key, also referred to as the NVDA key. On most desktop keyboards, you can locate it above the delete key and beside the home key. However, it is important to familiarize yourself with keyboard orientation before using the computer. In laptops, the caps lock key can also function as the insert key or NVDA key.

3.2. Keyboard Input Help On:

This is a valuable feature offered by screen readers. In NVDA, you can activate this feature by pressing Insert key plus the exclamation mark (!).

Please note that you need to press 1 on the number row and not on the numpad.

When you enable the Keyboard Input Help On feature, the keyboard's stops functioning. When you press any key, NVDA audibly identifies the key you pressed and announces the key and its function. This feature proves particularly beneficial for beginners in several ways:

1. To find out which key is where or to learn keyboard orientation.
2. Understanding the functions of different key combinations, for examples the purpose of Insert key plus N.
3. Practicing various key combinations, including those involving three or more keys. With this feature, learners can practice without the risk of unintended actions or wrong results.
4. Adapting to different keyboards when working on unfamiliar computers. This feature helps in quick familiarization to unknown keyboard and enhances efficiency.

3.3. Settings

Every software has a menu for changing its settings. In NVDA, you can access the settings by pressing "Insert" and "N" keys together. But let us learn an easier way to adjust some basic settings. If you want to change the speed, voice, or pitch of NVDA, follow these simple steps:

1. Press "Control," "Insert," and the "Left Arrow" keys together. You will hear options like speed, voice, pitch, and volume.
2. Use the "Control" and "Insert" keys while pressing the "Left" or "Right Arrow" keys to move to the option you want to change.
3. To adjust the setting, use "Control," "Insert," and the "Up" or "Down Arrow" keys. For instance, to change the speed of NVDA:
 - Press "Control," "Insert," and the "Left Arrow" keys to reach the speed option.
 - Increase or decrease the speed using "Control," "Insert," and the "Up" or "Down Arrow" keys.

By default, NVDA uses a Text-To-Speech (TTS) called E-speak. If you want to use a different TTS, follow these steps:

1. Press "Control," "Insert," and "S" keys together. This will open the synthesizer selection menu.
2. Use the "Up" and "Down" Arrow keys to choose your preferred TTS.
3. Press "Enter." Your chosen TTS will start working.

3.4. Speech Mode On/Off

NVDA offers a feature called Speech Mode On/Off. This lets you control how NVDA speaks to you. To switch the Speech Mode On/Off, press "Insert," "Shift," and "S" keys together.

Note: When you activate Sleep Mode, all NVDA commands and speech/braille output for the current application will be turned off. This is especially helpful in apps that already have their own speech or screen reading features. Press the same command again to turn off Sleep Mode. Keep in mind that NVDA will remember the Sleep Mode setting until you restart it.

Additionally, "Insert" and "S" keys together act as a toggle for Talk Mode, Beep Mode, and the speech of options. The Speech Mode Off option can be very useful for different reasons:

1. People with low vision who do not need Text-To-Speech (TTS) assistance will find this option helpful.
2. This option is also handy in applications like Google Meet or Zoom, where NVDA's Talk Mode can disrupt other participants.

3.5. Frequently Used NVDA Key Commands:

Here is a list of commonly used commands for NVDA:

1. Press "Insert" and "B" keys together - Reads all controls in the active window.
2. Press "Insert" and "F" keys together - Reads character formatting, like font size, type, colour, and more.
3. Press "Insert" and "N" keys together - Opens the NVDA menu.
4. Press "Insert" and "S" keys together - Toggles between Talk Mode, Beep Mode, and Speech Off Mode.
5. Press "Insert," "Shift," and "S" keys together - Toggles Sleep Mode on/off.
6. Press "Insert" and "T" keys together - Reads the title bar. Press twice to spell it, and thrice to copy it.
7. Press "Insert" and "Q" keys together - Quits or exits NVDA.
8. Press "Insert" and "C" keys together - Reads the text copied to the clipboard.
9. Press "Control" key - Mutes NVDA.
10. Press "Shift" key - Pauses NVDA; pressing Shift again resumes it.
11. Press "Insert" and space bar together - Toggles between Focus Mode and Browse Mode. Browse Mode is for reading, while Focus Mode allows editing text.
12. Press "Insert" and the "1" key on the number row - Toggles Keyboard Input Help on and off.
13. Press "Insert" and the "2" key on the number row - Speaks characters while typing, on and off.
14. Press "Insert" and the "3" key on the number row - Speaks words while typing, on and off.
15. Press "Insert" and "F12" - Announces the time.
16. Press "Insert" and "F12" twice - Announces the date.
17. Press "Insert" and the down arrow - Reads the entire text from the cursor position.
18. Press "Insert" and the up arrow - Reads the current line.
19. Press "Insert" and the up arrow twice - Spells the current line.
20. Press "Insert," "Shift," and the up arrow - Reads the selected text.
21. Press "Insert" and Page Down - Reads the status bar.

22. Press "Insert" and "P" - Helps you choose punctuation preferences while reading.
23. Press "Insert," "Control," and "K" - Opens the keyboard settings menu.
24. Press "Insert," "Control," and "V" - Opens the voice settings menu.
25. Press "Insert," "Control," and "S" - Opens the Synthesizer selection options.
26. Press "Insert," "Shift," and "B" - Announces the battery status.
27. Press "Insert" and "M" - Toggles mouse tracking on/off.

Exercise:

- Task 1: Start by turning on the Keyboard Input Help by pressing "Insert" and the "1" key on the number row. Now, practice the following key combinations:
 1. Press "Insert" and "T" keys.
 2. Press "Insert" and "S" keys.
 3. Press "Insert," "Control," and "S" keys.
 4. Press "Alt" and "F" keys.
 5. Press "Insert," "Control," and "K" keys.
 6. Press "Alt," "Control," and "Delete" keys.
- Task 2: Adjust the settings of NVDA as follows:
 1. Change the rate of NVDA to 10 percent.
 2. Change the pitch level to 30.
 3. Change the punctuation level to "all."

3.6. Evaluation

1. Which is NVDA key?
2. What is the function of screen reader?
3. Name screen readers?
4. Why to choose NVDA?
5. How to start NVDA?
6. Where can you find NVDA key on keyboard?
7. What happens after pressing 'Any key'?
8. Which NVDA command you will press to go to setting menu?
9. What will happen if you press 'control plus insert plus left arrow'?
10. How will you change the setting of respective option?
11. What will you do to change your Text-To-Speech (TTS)?
12. How will you do speech mode on/ off?
13. Mention or demonstrate at least 9 frequently used key commands.

3.7. Adaptation for Learners with Deafblindness

For learners with total deafblindness who read braille, the content can be transcribed into braille. For learners with low vision, key terms can be displayed visually, and demonstrations of how to use NVDA can be provided. To highlight frequently used keys like "Insert," "Control," and "Alt," you can use bright colours or different textures. Key commands can be taught through direct demonstrations, and learners can be given practical exposure to keyboards to become well-versed in their functions.

4. UNIT FOUR: ORBIT & COMPUTER -Introduction to Orbit 20

The invention of the electronic Braille Refreshable Display has marked a significant milestone in the resurgence of Braille and its integration with advanced technology. This innovation has enabled paperless Braille by displaying text using electronic Braille dots. When the command for the next line is given, a new line appears. This breakthrough empowers learners with deafblindness to use modern devices like computers and smartphones.

In this chapter, we will explore Orbit 20, an affordable Refreshable Braille Display equipped with 20 braille cells for reading Braille and a 6-dot keypad for writing in Braille. Additionally, we will delve into how effectively Orbit 20 serves as a Braille screen reader for smartphones and computers.



(Perkins Brailler, n.d.)



(Orbit Reader 20, n.d.)

4.1. Orientation to the device

This is a lightweight and portable device. Place it in a way that the Braille display is in front of you. The device has 20 Braille cells, and on the right and left of the Braille display, there are panning keys. You can move to the previous and next line by pressing these keys up and down.

Above the Braille display, there are three keys.

- The key on the left is dot 7, which functions as the backspace key.
- The long key in the middle is the space key,
- The key on the right is dot 8 or the enter key.
- The space key can also work as a function key when pressed with other keys.

On the top, there are six Braille input keys: dots 3, 2, and 1 on the left, and dots 4, 5, and 6 on the right. They work similarly to the Perkins Braille typewriter. Between these two sets of keys, there are navigation keys, including up arrow, down arrow, left arrow, right arrow, and a select key in the middle.

The power button, memory card slot, and charging slot are located on the left side of the back.

4.2. Key features of Orbit 20

Orbit 20 has two main modes of operation: Standalone mode and Remote mode.

1. **Standalone Mode:** In this mode, Orbit 20 can be used to read and write in braille.
2. **Remote Mode:** In this mode, it acts as a braille screen reader for smartphones, tablets, and computers.
3. It can connect to other devices using USB or Bluetooth.
4. When in Standalone mode, it allows writing in English grade I, English grade 2, and one chosen Indian language.
5. It can store many e-books in its memory card for reading in braille.
6. You can write text in notepad or braille dot format. Out of 5 profiles one of its profiles, Profile 3, creates .brf files, while the rest make notepad files.
7. The files made on Orbit 20 can be converted into text that anyone can read.
8. It helps people with deafblindness communicate with those without disabilities.

4.3. How to Use the Orbit 20 Device:

4.3.1. Starting the Orbit 20:

To turn on the device, press the power button for two seconds. Braille dots will appear. To turn it off, press the same button for two seconds. The braille dots will disappear. By default, when you start the device, you will be in the file manager. If you had not exited a file or folder before turning off, it will reopen the same file or folder when turned on again.

4.3.2. Creating a New File:

Press space plus n to make a new file. If you want it in a specific folder, open that folder first. When creating a new file, it is in edit mode by default, and the cursor is on the first cell. Remember to select the right profile before creating the file. Now you can type. Use dot 7 (backspace) to erase mistakes.

4.3.3. Creating a New Folder:

1. Press space plus O. You will hear 'new folder'.
2. Type the name you want.
3. Press dot 8. The new folder with the name you chose will be created. If you do not type a name and press dot 8, it will be named 'New Folder'.

4.3.4. Saving a File:

Files on the Orbit 20 are automatically saved. When done writing, press the select button twice to save. The first line becomes the filename, and the file switches to reading mode. It is good to type the filename in the first line. You can rename it later if needed.

Exercise:

Create two new files. The name of the first file should be myself and the name of the other file should be my town. Write two sentences in both files. The first file should be in English grade 1 and the Second file should be in English grade 2.

4.3.5. Editing Mode:

When you are editing or entering text, you are in edit mode. New files open in edit mode by default. If you are in a reading mode of an existing file, press space plus e to switch to edit mode. The cursor blinks in this mode.

Basic Editing Commands:

1. Press space plus E to go to the edit mode from reading mode in the file
2. Press back space to delete the previous character
3. Press right arrow to go to the next character
4. Press space plus right arrow to take the cursor to the next word.
5. Press left arrow to move to the previous character
6. Press space plus left arrow to move to the previous word.
7. Press up arrow to move to the previous paragraph.
8. Press down arrow to move to the next paragraph
9. Press and hold down the up arrow to move to the beginning of the document
10. Press and hold down the down arrow to move to the end of the document
11. Press space plus dot 7 plus up arrow to move to the previous page
12. Press space plus dot 7 plus down arrow to move to the next page
***Note:** Orbit reader considers 1000 characters as one page.
13. Press space plus dot 7 plus left arrow to take the cursor to the beginning of the current paragraph.
14. Press space plus dot 7 plus right arrow to take the cursor to the end of the current paragraph.

4.3.6. Context Menu:

While typing in edit mode, press select once for the context menu. It has 7 options, each with a shortcut.

Use these shortcuts after opening the context menu:

1. Exit: e
2. Save: s
3. Cut: x
4. Copy: c
5. Paste: v
6. Find: f
7. Mark: m

4.3.7. Cut, Copy, and Paste:

To cut or copy text:

1. Take your cursor to the first character of the text that you want to cut or copy.
2. Press select button once. The context menu will open
3. Press m. You will read 'mark is set'
4. Press back space and you will be back in your file
5. Take your cursor to the last character of the text that you want to cut or copy.
6. Open the context menu again
7. Press c if you want to copy, and x if you want to cut the text. You will read copied or cut as per your choice
8. Press back space and you will be in the file
9. Take your cursor to the location where you want to paste the text.
10. If it is the same file, open the context menu and press v. You will read Pasted
11. If it is a different file, press space plus e to bring the file in the edit mode. Then open the context menu and press v. You will read pasted text.

4.3.8. Copying a File or Folder:

1. Go to the file/folder to copy or cut.
2. Press space plus c (copy) or x (cut).
3. Move cursor to paste location.
4. Press space plus v to paste.

4.3.9. Renaming a File:

1. Position cursor on the file (do not open it).
2. Press space plus r; you will feel a line under the name.
3. Type the new name.
4. Press dot 8 to confirm the new name.

4.3.10. Deleting a File or Folder:

1. Go to the file you want to delete (do not open it).
2. Press space plus d; a confirmation message appears.
3. Press dot 8 to delete the file.
4. To delete multiple files, mark each with space plus m, then space plus d. *(**Note:** You cannot delete a folder with files inside. Empty the folder first.)

Exercise:

1. Rename the file "myself" to "lesson 1" and "my town" to "lesson 2".
2. Create a new file named "lesson 3" and copy the content from "lesson 1" and "lesson 2" into this file.

4.4. Reading Mode

Reading mode allows you to read files in Braille that you have created or copied from another source on your SD card, but you cannot edit them. If the file is lengthy, it might take a few seconds to open.

When a file is in reading mode, the following commands will be helpful:

1. Dot 1 or space plus dots 1 2 3 takes you to the beginning of the file.
2. Dot 4 or space plus dots 4 5 6 takes you to the end of the file.
3. Space plus m adds a bookmark at the current position; using the same command removes the bookmark.
4. Dot 2 takes you to the previous bookmark.
5. Dot 5 takes you to the next bookmark.
6. Dot 3 is used to move to the previous page.
7. Dot 6 is used to move to the next page.
***Note:** In Orbit, 1000 characters are considered as one page.
8. Space plus dot 3 or left arrow is the command for the previous character.
9. Space plus dot 6 or right arrow is the command for the next character.
10. Space plus dot 2 or space plus left arrow is the command for moving to the previous word.
11. Space plus dot 5 or space plus right arrow is the command for moving to the next word.
12. Up arrow is the command for moving to the previous paragraph.
13. Down arrow is the command for moving to the next paragraph.
14. Space plus up arrow decreases the auto scroll speed by one second.
15. Space plus down arrow increases the auto scroll speed by one second.
***Note:** Auto scroll is a feature that allows you to move to the next lines without using the panning keys. The display shows the next line after the set number of seconds. If you have chosen 5 seconds, the braille display will show the next line every five seconds. Pressing space again will stop the auto scroll option.
16. Space plus f opens the find option.
17. Dot 8 plus right arrow will display the next occurrence of the word you have typed in the find and search option.
18. Dot 8 plus left arrow will search and show the previous occurrence of the word typed in the find and search option.

19. Space plus t shows the current time.
20. Back space is the command for exiting the file.

4.5. File Manager

The file manager is a list of all the files and folders available on the SD card. By default, the file manager displays the list in ascending alphabetic order, starting from 'a' to 'z.' However, you have the flexibility to change this order. You can opt for descending order, files sorted by dates, or files sorted by size, and more.

The following commands are useful when working in the file manager:

1. Use the up and down arrow keys to navigate between different files.
2. Use the panning keys or the left and right arrow keys to access file details such as file format, file size, and the date it was last edited.
3. Press space plus dots 1 2 3 to quickly jump to the first file in the file manager.
4. Press space plus dots 4 5 6 to swiftly reach the last file in the file manager.
5. Press space plus m to mark a file for actions like cut, copy, or deletion.
6. Press the select button or dot 8 to open the selected file.
7. Type the first few characters of the file or folder you want to open, and you will be directed to the desired file. This method saves time and accelerates your search process.
***Note:** If your selected language is English, but your file name is in another language, you might encounter garbled text. Switching the profile will display the correct name of the file.
8. Press the select button plus dot 1 to open profile 1. This profile is set for English grade I.
9. Press the select button plus dot 2 to open profile 2. This profile is designed for English grade 2.
10. Press the select button plus dot 3 to open profile 3. This profile is configured for 6-dot Braille.
11. Press the select button plus dot 4 to open profile 4. This profile is suitable for any Indian language compatible with the device, excluding Hindi.
12. Press the select button plus dot 5 to open profile 5. This profile is intended for Hindi.
***Note:** You can change profiles according to your preferences and requirements.

4.6. System Menu

The system menu of Orbit 20 offers various options, including battery status, profile selection, USB connection options, time setting, Bluetooth connection options, word wrapping, and default settings.

To open the menu, press Select plus the Up Arrow. Navigate through different options using the Up Arrow or Down Arrow. Use the Left Arrow or Right Arrow to explore options within a submenu.

Example:

In USB connections, you will find USB hid orbit, USB media, USB serial, and USB hid braille. Similarly, under profiles, you will have system language, reading writing language, and encoding as additional options.

Here are some useful shortcuts:

1. Select Plus Up Arrow: Opens the Menu
2. Select Plus Right Arrow: Remote Mode
3. Select Plus Left Arrow: Standalone Mode
4. Space Plus Dot Seven Plus Dot Two: USB Hid orbit
5. Space Plus Dot Seven Plus Dot Six: USB Serial
6. Space Plus Dot Seven Plus Dot Four: Bluetooth
7. Space Plus Dot Seven Plus Dot Five: Media device or Mass storage
8. Select Plus Dot Seven Plus Dot Six: USB hid Braille
9. Select Plus One: Profile One
10. Select Plus Two: Profile Two
11. Select Plus Three: Profile Three
12. Select Plus Four: Profile Four
13. Select Plus Five: Profile Five
14. Space Plus T: Tells the time

4.7. Remote mode

As mentioned earlier, Orbit 20 operates in two modes: Standalone mode and Remote mode. We've already learned about Standalone mode. Now, let us explore Remote mode. In this mode, Orbit 20 functions as the Braille screen reader for the host device.

4.8. How to connect orbit 20 with a computer

Follow these steps to connect your computer with Orbit 20:

1. Insert the charging cable into the charging point of Orbit 20 and connect the USB cable to the USB port of the computer. Orbit 20 will indicate "charging plugged in."
2. Press Space plus Dot 7 plus Dot 2 on the Orbit reader. You will hear "USB hid Orbit."
3. Access the NVDA settings on your computer.
4. Navigate to the Braille settings.

5. Choose Orbit reader and press OK. If you do not find the name "Orbit reader," select the automatic option and press OK. Orbit 20 will now function as a Braille screen reader for the computer. Everything displayed on the computer screen will also appear in Braille on Orbit 20.

***Note:** When you open programs like Microsoft Word or Notepad, you can input data from both the QWERTY keyboard of the computer and the Braille keyboard of Orbit 20. This enables effective communication between individuals using different keyboards. Even if one person is not familiar with Braille, they can still communicate.

In summary, the USB connection between the computer and Orbit 20 allows you to use Orbit 20 as a Braille screen reader, enabling a deafblind person to efficiently use a computer. Moreover, communication between a deafblind person and a non-disabled person is facilitated. This mode is beneficial for non-disabled teachers to interact with and teach deafblind students. Orbit 20 can also be employed as a USB device for data transfer between Orbit 20 and the computer, both ways.

Follow these Steps to Connect Orbit 20 as a Mass Storage or USB Media Device:

1. Connect the charging cable to both the Orbit 20 and the computer. You will see "charging plugged in Orbit 20."
2. Press Space plus Dot 7 plus Dot 5 on Orbit 20. You will read "Media device" on Orbit 20, and your computer will produce a sound to indicate that the device has been connected.
3. Navigate to "This PC" on your computer and then access the USB device.
4. Press Enter to open the device.
5. You can now transfer files and folders between your computer and Orbit 20, similar to using any other external storage device.

Notes:

1. In this case, you will need to use the computer keyboard exclusively. The Braille keyboard will not work.
2. Before transferring any file from the computer to Orbit 20, ensure that you save it as a notepad file with Unicode UTF-8.
3. When transferring a file from Orbit 20 to the computer, prior to opening the file, right-click on the file and choose the "Open with" option. Then, select Notepad to open the file.

It is important to note that Orbit 20 exclusively supports notepad files as text files. Additionally, it also extends its support to BRF and OBI files. If you intend to open these files on your computer, you will require specialized Braille software like Duxbury or a Braille translator.

Orbit 20 can be connected to a smartphone through Bluetooth, transforming it into a Braille screen reader for the smartphone. This functionality empowers individuals with deafblindness to not only manage fundamental tasks such as dialling, answering calls, and sending messages but also facilitates their efficient usage of applications like WhatsApp, email, Google search, and other mobile apps.



BrailleBack

Note: To utilize this feature, you need to have Talkback and Braille Back applications installed on your mobile phone.

It is essential to learn the BrailleBack commands to effectively use Orbit 20 as a screen reader and utilize the Braille keypad to input data on the mobile phone.

Furthermore, you can access a list of BrailleBack commands by pressing the space key along with dots 1, 2, 3 when your mobile phone is connected and both Talkback and BrailleBack are activated. When utilizing Orbit 20 as a screen reader, or when it is connected to a mobile phone or computer, you can only input data in English grade 1 and English grade 2. Indian languages cannot be used in this context. (RBIT Research, 2020)

4.9. Evaluation:

- ⊖ Explain what Orbit 20 is - a Refreshable Braille Display?
- ⊖ Highlight at least 5 key features of Orbit 20.
- ⊖ Explain how you would utilize Orbit 20- (explain entire process as per below sub-questions)
 - How do you initiate Orbit 20?
 - How do you create a new file on Orbit 20?
 - How do you create a new folder?
 - What steps do you take to save a file?
 - Explain or demonstrate the editing mode.
 - List the shortcuts for opening the context menu.
 - Demonstrate the process of Cut, Copy, and Paste.
 - Detail the steps to copy a file or folder.
 - How would you rename a file?
 - If you wish to delete a file or folder, what is the procedure? (Explain in detail or demonstrate)
 - Can you edit documents in reading mode? (Yes or No)
 - Mention at least 3 commands for working in the file manager.
 - What is the first option in the system menu?

- Identify the two modes in which Orbit 20 operates.
- Outline the steps to connect Orbit 20 to a computer.

4.10. Adaptation for Learners with Deafblindness:

For individuals with total deafblindness, an initial exploration of the Orbit 20 device is recommended. Images of the Brallier and Orbit 20 can be enlarged for learners with low vision, and tactile outlines can be created using thread, wool, thermoform, or tactile graphics. Demonstrations of Orbit 20 can be conducted using regular or high-tone speech, sign language, Braille, or large print for learners with combined hearing and vision impairments.

The content can be simplified and adapted into Braille or large print as required by individuals with deafblindness. Teachers can explain the key functions to learners with deafblindness by allowing them to touch the device keys with hand-under-hand support and providing detailed explanations through signs, tactile sign language, or other modes of communication. Instructions outlined in the content can be directly demonstrated for better understanding.

5. UNIT FIVE: MICROSOFT WORD

Introduction:

Microsoft Word is a widely used word editing software and is a part of Microsoft Office. Every computer user is expected to be familiar with its basic functions. This program offers remarkable features for creating, editing, formatting, printing, and designing documents. Microsoft Word requires the Windows operating system. This unit is designed for beginners, focusing on the most frequently used features and tasks. Each task can be accomplished in various ways, but we have chosen the simplest and shortest methods for each one. We have broken down each function or task into small steps, presented in a step-by-step format to assist you in independently and accurately performing each task.

Let us get started.

5.1. Creating a New Document:

In this section, you will learn how to create a new Word document. The same steps can be applied to creating an Excel spreadsheet, a Notepad file, or a PowerPoint presentation.

Follow these steps to create a new Word document:

- **Step 1:** Press the Windows key. This will open the Start menu, and the cursor will be in the search option.
- **Step 2:** Type "word" in the search box. The screen reader will announce "Microsoft Word."
- **Step 3:** Press Enter. A new blank Word document will open, and the screen reader will announce "Microsoft Word document 1 edit. You have successfully opened a new blank Microsoft Word document."

Note:

- A. When you create a new document, it will be named "Document One" by default.
- B. If you are already in a Word document and want to create another new document, press Control + N. A new blank Word document will open.
- C. This feature works in various file types. For example, if you are in Notepad and press Control + N, another blank Notepad file will be created.

5.2. Opening an Existing Document

Follow these steps to open an existing document:

1. Press the Windows key to open the search option.
2. Type the name of the file or folder you want to open.
3. Use the up and down arrows to navigate and locate your desired file or folder.
4. Press Enter to open the chosen file or folder.

5.3. How to Close a File

1. Press **Ctrl + S** before closing your file.
2. Press **Alt + F4** to close the file.

5.4. How to Save a Document

When creating a new document, the computer assigns it the default name "Document 1". To properly save and easily search for the file in the future, it is important to give it a unique file name.

Follow these steps:

1. Press **Ctrl + S**. This opens the "Save As" dialog box. Note that the first time you use **Ctrl + S**, the "Save As" dialog box will open. Subsequent times you use **Ctrl + S**, the file will be saved with the latest changes without opening the dialog box.
2. Type the desired file name. If you enter a name that already exists, the computer will prompt you, "A file with this name already exists. Do you want to replace it?"
3. Press **Enter**. The file will be saved with the new name.

You can confirm the file's title by pressing **Insert + T**, which will read the title of the file.

Tips for Saving the File

Remember to start saving your file soon after opening it. Do not wait until you have finished working on it. For larger documents, consider using the save command every few sentences to avoid losing progress.

Understanding the 'Save As' Option

If you want to save the same file with a different name, at a different location, or in a different format, you need to use the 'Save As' option.

Here is how to use the 'Save As' option:

1. Press **F12**. This opens the "Save As" dialog box, with the cursor in the "File name" field.
2. Type a new file name.
3. Press **Tab** to hear the "File type".
4. Use the **Up** or **Down** arrow keys to select the desired file type.
5. Press **Tab** to navigate to the "Location" field. Use the arrow keys to choose where you want to save the file.
6. Press **Enter**. The file will now be saved with the new name, file type, and location.

5.5. Understanding the Screen

At the top of the window, you will find the title bar. To hear the title of the document, press Insert + T screen reader will announce the title. This bar displays the file name followed by the program name. There are 3 buttons on title bar--minimise, restore, and close button. Below the title bar is the ribbon tab. If you press alter key, you will go to upper ribbons. In the word, there are 8 menus or tabs.

The shortcuts for each menu of tab are as under.

1. Home tab -- **Alt + h**
 2. Insert tab -- **Alt + n**
 3. Design tab -- **Alt + g**
 4. Page layout tab -- **Alt + p**
 5. References -- **Alt + s**
 6. Mailing tab -- **Alt + m**
 7. Review tab -- **Alt + r**
 8. View tab -- **Alt + w**
- (Ribbon and Tabs, n.d.)

Most tasks can be accomplished using keyboard shortcuts for efficiency. For example, to access the spell check option, use the hotkey F7, eliminating the need to navigate through the ribbon tabs.

5.6. Quick Access Toolbar and Document Window

The Quick Access Toolbar is located below the ribbon tab.

- **Press Alt** to access the ribbon tab
- **Shift + Tab** to navigate to the Quick Access Toolbar.
- Press left arrow or right arrow to move within the quick access toolbar

The Document Window, where you input text, is just below the Quick Access Toolbar.

Now practice following tasks:

1. Create a Word file with your name and write five sentences about yourself.
2. Create a folder named "exercise" on the desktop.
3. Use the "Save As" command to move your file to this folder, and change the file name to "My First Lesson".

5.7 Deleting, Reading, and Navigation Commands

5.7.1. Deleting Text

- **Backspace Key:** The backspace key deletes the previous character. For example, if you intended to type the word 'move', but instead typed 'nove', you would need to delete the 'n'. Position your cursor after 'O', then press the backspace key to delete the 'n'. If you type 'm', using control plus the backspace key will delete the previous word. For instance, if you want to remove the word 'sad', move the cursor to the space after 'sad' and press control plus the backspace key. This will delete the word 'sad'. If your cursor is on the 'd' of 'sad', only 'sa' will be deleted.
- **Delete Key:** The delete key erases the character under the cursor. Control plus the delete key deletes the current word.

Reading and Navigation Commands:

1. **Right Arrow:** The cursor advances to the next character and reads it.
2. **Left Arrow:** The cursor moves to the previous character and reads it.
3. **Control plus Right Arrow:** Moves the cursor to the next word and reads that word.
4. **Control plus Left Arrow:** The cursor shifts to the previous word and reads that word.
5. **Control plus Up Arrow:** The cursor moves to the preceding paragraph and reads it.
6. **Control plus Down Arrow:** The cursor moves to the next paragraph and reads it.
7. **Control plus Home:** The cursor moves to the first character of the document and reads the first line.
8. **Control plus End:** The cursor moves to the last character of the document and reads the last line.
9. **Control plus Page Up:** The cursor moves to the first line of the previous page and reads the first line there.
10. **Control plus Page Down:** The cursor moves to the first character of the next page and reads the first line there.
11. **Up Arrow:** Reads the previous line.
12. **Down Arrow:** Reads the next line.
13. **Insert plus Up Arrow:** Reads the current line.
14. **Insert plus Up Arrow Twice:** Spells out the current line.
15. **Insert plus Down Arrow:** Reads the entire document from the cursor's position.

5.7.2. Selecting Text

Remember that you need to select the text before making any changes to it. Sometimes, you will need to select a single word, at other times a whole sentence, and occasionally even the entire document. The commands provided below will assist you in selecting the desired text.

1. **Control plus A:** Selects the entire document.
2. **Shift plus Right Arrow:** Selects the next character.
3. **Shift plus Left Arrow:** Selects the previous character.
4. **Control plus Shift plus Right Arrow:** Selects the next word.
5. **Control plus Shift plus Left Arrow:** Selects the previous word.
6. **Shift plus Down Arrow:** Selects the current line. Press "Home" before selecting the current line.
7. **Shift plus Home:** Selects the text of the current line from the beginning to the cursor position.
8. **Shift plus End:** Selects the text from the cursor position to the end of the current line.
9. **Control plus Shift plus Home:** Selects the text from the beginning of the document to the cursor position.
10. **Control plus Shift plus End:** Selects the text from the cursor position to the end of the document.
11. **Insert plus Shift plus E:** Reads the selected text.

Now let us Learn Some Tasks:

➤ **Bold, Underline, Italics:**

Select the text in which you want to make changes:

1. For bold, press Control plus B.
2. For underline, press Control plus U.
3. For italics, press Control plus I.

Note: *These are toggle commands. To remove the effect, follow the same procedure. For example, to remove the underline, select the underlined word or phrase, then press Control plus U again. The underline will be removed.*

Alignments:

1. For bringing text to the centre -centre alignment, select the text and then press Control plus E.
2. For right alignment, select the text and then press Control plus R. The text will be aligned to the right.
3. For left alignment, select the text and then press Control plus L. The text will be left-aligned.
4. For justifying the text, select the text and then press Control plus J.

➤ **Cut, Copy, and Paste:**

1. Select the text you want to copy or cut.
2. Press Control plus C to copy.
3. Press Control plus X to cut the text.
4. Go to the location where you want to paste the text.
5. Press Control plus V to paste the text.

Note: *If you copy the text, it will appear at both the original location and the new location. If you cut the text, it will be removed from the original location and only appear in the new location.*

If you want to cut paste or copy paste files, or folders, follow these steps:

1. If you want to select files from one folder, go to that folder. If you want to copy folders, go to the drive in which these folders exist.
2. Select the files or folders you want to paste elsewhere
3. Press control plus c for copying or control plus x for cutting these files or folders
4. Go to the folder or drive where you want to paste these folders
5. Press control plus v to paste files or folders there

➤ **Find and Replace:**

1. Press Control plus H to open the Find and Replace dialogue box. The cursor will be in the 'Find what' option.
2. Type the word or phrase you want to replace.
3. Press Tab to move to the 'Replace with' option.
4. Type the word or phrase you want to use as a replacement.
5. If you want to make this change throughout the document, press Tab to move to 'Replace All.'
6. Press Enter. The number of changes needed will be announced, and the cursor will be on the 'Yes' option. To apply all changes, press Enter.

➤ **Go To Command:**

If you have a lengthy document or a book, there are occasions when you need to navigate to a specific page. While using the shortcuts Control plus Page Up or Control plus Page Down will move the cursor to the next or previous page respectively, this method can be both lengthy and tedious. Instead, you can make use of the "Go To" command to simplify the process.

For navigating large documents or books, use the Go To command:

1. Press Control plus G to open the Go To dialogue box.
2. Press Tab and move to the 'Go to what' option.

3. Use the up or down arrow to select the page, line, section, or paragraph you want to move to. For example, to move to page number 111, select the 'Page' option, press Tab, and type 111.
4. Press Tab and move to the 'Go to' button.
5. Press Enter.
6. Press Tab and move to the 'Close' option.
7. Press Enter. You will be taken to the top of page 111.

➤ **Redo and Undo:**

Frequently, we may mistakenly execute a wrong command, leading the computer to carry out an unintended function. Correcting such errors becomes necessary. In such cases, the 'Undo' command becomes a valuable tool. The key combination Control plus Z serves as the shortcut for this function. By using this command, the effects of actions are reversed in the opposite order they were performed. For instance, if you have made five changes and wish to undo their effects, the last change will be undone first, followed by the subsequent ones in reverse order.

If you find the need to undo the effects of an 'Undo' action and reinstate a change, you can achieve this by pressing Control plus Y.

➤ **Creating a Table:**

Access the table option in the Insert tab.

1. Press Alt plus N to go to the Insert tab.
2. Press T to select the table option.
3. Use the down arrow to choose the number of rows, pressing it increases the count.
4. Press the right arrow to select the number of columns, pressing it increases the count.
5. Press Enter, and the table will be created.

For instance, to create a table with 4 columns and 5 rows:

1. Press Alt plus N.
2. Press T.
3. Press the down arrow 4 times.
4. Press the right arrow 3 times.
5. Press Enter. The table will be created.

Note: Use the Tab key to enter data in the table. After the last column of the first row, pressing Tab will take you to the first column of the second row. Similarly, pressing Tab after the last column of the last row adds another row.

➤ **Reading a Table:**

1. Control plus Alt plus Right Arrow: Moves to the next column and reads it.
2. Control plus Alt plus Left Arrow: Moves to the previous column and reads it.
3. Control plus Alt plus Up Arrow: Moves to the previous row and reads it.
4. Control plus Alt plus Down Arrow: Moves to the next row and reads it.

➤ **Spell Check**

A spell check dialog box provides the facility to identify incorrect or misspelled words and offers suggestions to assist us in avoiding errors. When a word is misspelled, the computer displays a red line to indicate the error. For individuals with visual impairment, a distinct sound is emitted shortly after pressing the spacebar following the misspelled word. This feature enables the selection of the word, allowing access to the application menu for viewing the correct spelling. However, this process can interrupt the flow of thought during writing. Often, the spell check dialog box is employed to verify spelling after completing the text. This dialog box typically provides multiple suggestions for a single misspelled word, which can be navigated using the up and down arrow keys.

In certain cases, the suggestions provided may not be relevant. An "ignore" option is available for dismissing these suggestions. By selecting this option, the computer preserves the words in question and removes the red underline denoting the misspelling. Frequently, the same misspelled words occur multiple times. To address this, options such as "change all" or "ignore all" are accessible. The computer can identify and modify or disregard all instances of the same mistake in a single command. This feature significantly enhances the efficiency of the spell-checking process. The spell check option is typically located in the "Review" tab, and the shortcut key for this task is F7.

A spell check dialog box helps identify misspelled words and suggests corrections:

1. Press F7 to open the Spell Check dialog box.
2. Press Tab to navigate the list of suggestions for the first misspelled word.
3. Use the up and down arrow keys to review suggestions.
4. Place the arrow key on the desired suggestion.
5. Press Tab and select the 'Change' option. Choose 'Change All' for recurring words.
6. Press Enter to apply the correction.
7. To retain the original word, use the 'Ignore' option. For recurring words, choose 'Ignore All.'

8. Repeat these steps for each correction.
9. When the spell check is complete, press Tab to select the 'OK' button and press Enter to exit the dialog box.
(Sandal, Kalra, Rana, & Taneja, 2013)

5.8. Evaluation

- How will you create new document in Microsoft word?
- Which key do you use to close the file?
- What are the steps to save the document? Mention the steps or demonstrate.
- What keyboard shortcut will you use to open the 'Save As' option?
- Name the 3 buttons on the title bar.
- Mention at least 4 shortcuts of menu on the tab.
- What will happen if you click the delete key? If you want to delete 'N' from 'Nove' and write 'move,' what will you do?
- Mention reading and navigation command for 'Control plus right arrow.
- Which key command will you use to select the entire document?
- Mention key command for 'Bold, Underline and Italics'.
- Mention the steps in justifying the text.
- What are shortcut keys for 'Cut, Copy and Paste'?
- Mention key command for 'Find and Replace'.
- What is the function of 'Undo Command'?
- Make a table of 5 columns and 3 rows (writes steps or demonstrate).
- What will you do if there is any spelling mistake in paragraph?
(Specify the process in steps).

5.9. Adaptation for Learners with Deafblindness

For learners with total deafblindness, Microsoft Word materials can be converted into Braille. For those with low vision and deafness, adaptation to large print can be made. Deafblind individuals with low vision can use magnifiers to read the text. Direct demonstrations using speech or sign language can be employed to teach Microsoft Word to learners with deafblindness. It is important to teach step by step, allowing learners to understand the workflow. For instance, to insert a column and row, learners can be guided to the "Table" tab, select the desired number of columns and rows, and click the respective button. Customized materials can be prepared to help learners identify and navigate the software. Adapted books with symbols representing functions can also aid in teaching.

6. UNIT SIX: PART ONE: INTERNET

Introduction:

Up to this point, you have acquired a foundational/basic understanding of computer usage and the Orbit 20 device. Now, let us explore internet usage.

We do many things on computers like making documents, printing, getting files, using different fonts, apps, and software. But not every computer has everything it needs. So, we sometimes need to use different computers for different tasks. For example, if we want to print something, we must take it to a computer that is connected to a printer. To avoid this problem, we can connect different computers in such a way that computer can communicate and perform the task. This is called networking.

There are various types of networks. In a single building or premises, we use LAN, known as a local area network. In larger cities, another type of network exists, called MAN, which stands for Metropolitan Area Network. The most widely utilized network is WAN, an abbreviation for Wide Area Network. This type of network allows the connection of two or more computers from anywhere around the world. It is an interconnected network commonly referred to as the internet.

The internet is a highly complex network. Firstly, we require an internet service provider to communicate with other computers. When two or more computers are linked, they adhere to specific rules or protocols for communication. These protocols include FTP (file transfer protocol), HTTP (hypertext transfer protocol), IP (internet protocol), TCP (transmission control protocol), and more.

Another key component is the modem, which modulates and demodulates signals to interpret messages. These days mostly computers integrated modems that is modems inside the computers.

Internet speed is measured in units such as KBPS (Kilobits per second) and MBPS (Megabits per second).

We use internet for various purposes from searching information to uploading and storing our data, downloading data from other sources and for financial transactions etc. When we access the internet, we open a website.

The World Wide Web (WWW) constitutes an intricate network of websites, each possessing a distinct web address. For instance, the website of Sense India is located at <https://www.senseindia.org/>.

Distinct domains signify specific purposes.

- '.org' signifies non-profit organizations,
- '.com' denotes business entities,
- '.gov.in' designates Indian government websites.

Each website has a homepage, it is the first page of the website. This page gives details about the organization, its mission, activities, and prominent individuals. Every website has a different link. Every link is like new page of a chapter. When you open a link, you open the page that carries the desired information. For instance, if you click on link of activities, you open a page detailing the organization's activities. Additionally, the term 'heading' is significant. Like how headings define topic or sub-topic changes in documents, webpages also feature distinct headings. Links and headings expedite navigation within websites. When you open a link, you open the page carrying the desired information.

One of the internet's most important functions is to help us search for information. Multiple search engines gather information on our behalf. Among them, the most effective and widely used search engine is Google.

6.1. How to Search for Information:

If you are looking to find information about the history of Ahmedabad, follow these steps:

1. Open the web browser installed on your computer.
2. Press Alt+D to navigate to the URL bar.
3. Enter the URL of the Google search engine: 'www.google.com'.
4. Use the hotkey E to access the search edit field.
5. Type the word or phrase you want to search and press Enter.
6. Press the hotkey H repeatedly to navigate through search results categorized under headings.
7. You'll see multiple headings displaying the search results.
8. Press Enter on the desired search result to open the page with relevant data.
9. Copy the text you find useful and relevant into a Word file.

#Practice searching for more topics

Here are some useful and commonly used commands or quick navigation keys:

1. H - Move to the next heading.
2. Shift + H - Go to the previous heading.
3. Tab - Move to the next link.
4. Shift + Tab - Go to the previous link.
5. K - Move to the next link.
6. Shift + K - Go to the previous link.

7. V - Visit a link.
8. U - Move to an unvisited link.
9. B - Move to the next button.
10. Shift + B - Go to the previous button.
11. X - Move to the next checkbox.
12. Shift + X - Go to the previous checkbox.
13. T - Move to the next table.
14. Shift + T - Go to the previous table.
15. R - Move to the next radio button.
16. Shift + R - Go to the previous radio button.
17. J - Jump to a specific line.
18. I - Move to the next list.
19. Shift + I - Go to the previous list.
20. E - Move to the next edit box.
21. Shift + E - Go to the previous edit box.

In addition, you should also know some common shortcuts used in browsers.

- **Step 1.** Alt plus D - This command takes the cursor to the address bar. You can type the website's address and then press Enter to open the desired website.
 - **Step 2.** Insert plus F7 - This command opens the element list view. Elements include links, buttons, headings, etc. Press Tab until you reach the element list. Use the up arrow and down arrow to navigate and position the cursor on the desired element. Press Tab, and you will be able to navigate using the first letter of the element. For instance, to go to the link named "training":
 - Press Insert plus F7. The Element view will open.
 - Press Tab and navigate to "Links."
 - Press Tab to access the link list view.
 - Press 'T' until you hear "training."
 - Press Enter to open the link about training.
 - **Step 3.** Control plus D - Opens the "Add Bookmark" option.
 - **Step 4.** Control plus D - Opens history.
 - **Step 5.** Control plus J - Opens the list of downloads.
 - **Step 6.** Control plus I - Provides information about the page.
 - **Step 7.** Alt plus F - Opens the menu.
 - **Step 8.** Control plus Shift plus Delete - Deletes recent history.
 - **Step 9.** Control plus T - Opens a new tab.
- (Gujarat Board Class 9 Computer Studies English Medium Textbooks, n.d.)

6.2. Evaluation

- Write full form of MAN.
- Write full form of WAN.
- What is the name of website, when we open internet?
- How will you find information about 'Gujarat' on internet? (Mention steps)
- Mention at least 5 quick navigation keys.
- 'Alter plus d' is a shortcut used in browser to search
- 'Insert plus F7' commands opens
- Which key shortcut will you use to open history of browser?
- Mention the shortcut key to open menu.
- 'Control plus T' is a key command to open

6.3. Adaptation for Learners with Deafblindness

For individuals with deafblindness, the content on the internet can be taught through direct demonstrations. It can be provided in Braille for those who are completely blind, in large print, or with the support of magnifiers for learners with deafblindness who have a combination of low vision and hearing impairment. Key words can be highlighted in different colours. Additionally, learners with deafblindness can benefit from direct demonstrations using tools like Orbit20 and NVDA, along with the assistance of special educators who can use speech, sign language, or flashcards to help them understand concepts and functions more effectively.

7. UNIT SIX: PART TWO: EMAIL

In the first half of this unit, you learned about the internet and how to use it. In this part, we will learn about email, its components, benefits, and how to write an email.

As you know, we write letters to individuals and organizations for various reasons. In every letter, we mention the recipient's name, address, and sometimes the subject. In the age of the internet, we no longer write physical letters. Instead, we send digital or electronic letters through computers or mobile devices. These are known as emails. Emails reach the recipient within seconds, and we often receive replies within minutes.

How does this work?

Similar to letters where we write address so that the post department can send it to the right person, we need an email address to send an email. Every email address is unique, and no two recipients can have the same address. Just as postal departments deliver letters, email service providers send emails to the intended addresses. Common email service providers include Gmail, Hotmail, Yahoo Mail, etc. Many organizations and government departments have email addresses based on their websites.

7.1. How is an email address formed?

An email address begins with a username, followed by the "@" symbol, and then the email service provider's name. For instance, if the email address is "abc@gmail.com," "ABC" is the username, and "Gmail" is the service provider. To understand this better, you can ask your friends, family members, and teachers for their email addresses.

In organizational email addresses, the username often refers to the department. For example, "info@saksham.org," "sales@saksham.org," "library@saksham.org," and "info@senseintindia.org." In these addresses, "info" represents general information, "sales" refers to the sales department, "library" signifies the library department, and "admin" stands for the administration department. In the last example, the person's name followed by their organization indicates an official email address.

Remember, when creating an email address, ensure it does not already exist. If the name is taken, you will receive suggestions for a unique email address. You can choose from these suggestions. The process of creating a new email address is called Sign Up. Once you successfully sign up, you need to sign in to send or receive emails. After signing in, you have various options. If you want to read received emails, go to the 'inbox.' For composing a new email, select the 'compose' option. To find old emails, use the 'search mail' option. You can search by email address, subject, date, or keywords. If you do not find an email in the inbox, check the spam mail folder.

Let us learn to compose an email. When you go to the compose option or press the compose button, the cursor usually lands in the 'To' edit field. Write the recipient's email address here. If you have written the same address before, suggestions will appear as you type a few characters. To send the same email to multiple people, use commas between each address. Avoid spaces in email addresses.

Press 'Tab,' and the cursor moves to 'CC' which stands for Carbon Copy. Use this field to send a copy of the email to additional recipients.

Next is the 'Subject' field, where you write a brief subject. This helps the recipient understand the email's purpose.

Then comes the 'message body' field, where you write the detailed message.

For attachments, use the 'attachment' field. If you want to attach one or more files, go to this field, and browse the files and press enter after selecting them to attach with the mail. To send the email, click the 'send' button. Upon pressing it, the email reaches the recipient within seconds, and you receive a confirmation message that the mail has been sent.

7.2. How to read your emails?

As mentioned earlier, go to the inbox to read your emails. The latest mail appears at the top. Information includes the sender's name, subject (if absent, it reads "no subject"), and the date. You typically hear "link" before the subject. If you press 'Enter' it will open the email. Use 'H' (hot key of heading) until you reach the subject line. Then read the email using reading commands. For attachments, press the "download attachment" button, and the attachment is downloaded to the default download folder. You can change this location.

For all these actions, you need to be 'online,' meaning your internet connection should be active/ON. Offline clients like Outlook or Thunderbird mail are also available. They allow you to write emails offline and send/receive them when you connect to the internet. Furthermore, you can manage multiple emails more efficiently without needing to open your email account online.

(Gujarat Board Class 9 Computer Studies English Medium Textbooks, n.d.)

7.3. Evaluation

- What are emails?
- Mention names of at least 3 popular service providers
- How is an email address usually formed?
- In the context of organizational email address, username refers to the department. (True/ False)
- What is the full form of CC?

7.4. Adaptation for Learners with Deafblindness

To teach how to send emails to another person, the person with deafblindness should first learn about emails, their purpose, content, etc. They will be given instructions in sequence in Braille or large print, based on their disability. Instructions can also be provided in sign language, speech, lip reading, or even through pictures for individuals with low vision.

Tactile pictures or models explaining the process in simple language can be used as well. The content can be adapted by reducing its size according to the needs of the person with deafblindness.

8. CLOSING REMARKS

In conclusion, individuals with deafblindness can acquire computer training just like anyone else without disabilities. As outlined in Chapter 19 of the RPwD Act 2016, which pertains to Skill Development and Employment, every person with deafblindness has the right to enhance their computer skills for better employment opportunities in the future. This booklet will guide learners with deafblindness in gaining a basic understanding of computers and their functions. They will also be able to perform other computer functions like creating documents and sharing them through email, which will enhance their social skills and expand their professional network. This booklet aims to reach as many individuals with deafblindness as possible, providing them with foundational computer training and opening doors to more job opportunities.

References

- American Printing House for the Blind. (2019, April 16). Orbit Reader 2 User Guide. Retrieved from <https://tech.aph.org/or20/>
- Australian Aid. (n.d.). Retrieved from Wikipedia: https://en.wikipedia.org/wiki/Australian_Aid
- Blind Peoples Association. (n.d.). Retrieved from Give India: https://www.giveindia.org/nonprofit/blind-peoples-association-india?https://www.giveindia.org/?utm_source=SEM&utm_campaign=brandindiadsa&utm_medium=Google&utm_term=Campaign&utm_content=donate&gclid=Cj0KCQjAj9iBBhCJARisAE9qRtD7lyPdzMnzG-ZeA2h7XX5XUO-5_MjIW
- Chapter 15 & 16 on Computer. (n.d.). In English Textbook- Gujarati Medium.
- Deafblindness. (n.d.). Retrieved from RCI Book: <http://www.rehabcouncil.nic.in/writereaddata/deafblind.pdf>
- Gujarat Board Class 9 Computer Studies English Medium Textbooks. (n.d.). Retrieved from <https://www.selfstudys.com/books/gujarat/state-books/class-9th/computer-studies/computer-studies-standard-9-english-medium-part-2/58390>
- Microsoft Word Step by Step. (n.d.). New Delhi: NAB Delhi.
- NV Access. (n.d.). User Guide Manual of NVDA. Retrieved from <https://www.nvaccess.org/>
- Orbit Reader 20. (n.d.). Retrieved from Orbit Research: <https://www.orbitresearch.com/product/orbit-reader-20/>
- Perkins Braille. (n.d.). Retrieved from Perkins: <https://braille.perkins.org/pages/perkins-braille>
- RBIT. (n.d.). Retrieved from Orbit Manual_Protect_2019: file:///C:/Users/Marina/Downloads/Orbit%20Manual_protect_2019.pdf
- RBIT Research. (2020, June 12). User Guide Manual of Orbit 20. Orbit Reader 2 User Guide - India Edition, Version 1.10.
- Ribbon and Tabs. (n.d.). Retrieved from JavaTpoint: <https://www.javatpoint.com/ribbon-and-tabs-in-ms-word>
- Sandal, A., Katra, B., Rana, R., & Taneja, Y. (2013, May). Microsoft Word Step by Step. New Delhi: National Association for The Blind, New Delhi.
- Sense International India. (n.d.). Retrieved from Sense International India: <https://www.senseindia.org/>
- Turbo SMTP. (n.d.). Retrieved from SMTP commands: <https://www.serversmtp.com/smtp-commands/>

Sense International India, also known as Sense India, was established in 1997 as the first and only non-governmental organisation to support the development of comprehensive services for people with deafblindness and multiple disabilities throughout India. Sense India works with local organisations to develop sustainable services for children and adults with deafblindness and collaborates with the government at centre and state levels. With our effort, children with deafblindness and multiple disabilities have been identified and are being prepared to attend mainstream schools. We are also partnering with leading organisations in Bangladesh, Nepal, Sri Lanka, Maldives and Malaysia to train educators and setup needs-based services for deafblind.



2nd floor, Andhjan Mandal Campus, Opp. IIM, Vastrapur, Ahmedabad 380015
Phone: +91-79-26301282 | Email : info@senseintindia.org

