

## CHAPTER 5

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## CHAPTER 5

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

India, with its vast population, hosts a substantial number of individuals with disabilities. According to Census 2011, approximately 26.8 million people, or 2.21% of India's total population, have some form of disability (Census of India, 2011). However, the World Bank data proposes a more expansive range, estimating that the actual number of persons with disabilities in India may be anywhere between 40 and 80 million (World Bank, n.d.). This discrepancy in figures is supported by disability rights activists and academicians dedicated to disability research, who contend that the census numbers significantly underrepresented the true figures (Various Disability Rights Activists and Academicians, n.d.). To put the magnitude of this population in perspective, the number of people with disabilities in India surpasses the combined populations of countries like Ireland, New Zealand, Austria, Uruguay, and Kuwait.

Furthermore, on a global scale, India stands out with one of the highest populations of people with disabilities. When breaking down the types of disabilities prevalent in the nation, movement, hearing, visual, and multiple disabilities emerge as the most common. The 2011 population census delineates that 20% of persons with disabilities in India have movement-related challenges, 19% face visual impairments, another 19% grapple with hearing loss, and 8% have multiple concurrent disabilities (Census of India, 2011). Notably, the age demographic most affected encompasses those aged 10-19 years, with 46.2 lakh individuals reported in this group.

According to the 2011 population census data it was found that 20% of individuals in India with disabilities face difficulties related to movement. Additionally, around 19% of them experience impairments, another 19% struggle with hearing loss and 8% have multiple disabilities simultaneously. Interestingly the age group most impacted by these challenges is between 10 and 19 years old with a number of about 46.2 lakh individuals, in this category.

The Indian education system, despite its vastness and diversity, exhibits significant shortfalls when it comes to inclusivity for candidates with disabilities. A critical

concern emerges from observations that the system may not be adequately equipped to prepare candidates with disabilities with the necessary educational qualifications required to sit for exams related to certain governmental posts or higher education pursuits (Narayan & Rao, 2019). Furthermore, a deeper systemic issue pertains to potential discrimination, where employers, perhaps influenced by societal biases, might be disinclined to recruit individuals with disabilities (Mishra & Gupta, 2016).

### **5.1.1 Advancements in Deaf Education in India**

Deaf education in India has undergone significant transformation over time. The inception of deaf education dates to 1884 with the establishment of the inaugural deaf school in Mazgaon, Bombay. Historically, the emphasis was placed on oralism, a method that prioritized speech over sign language, as pointed out by Erting (1996). Nevertheless, the advocacy for the incorporation of Indian Sign Language (ISL) in educational contexts has grown stronger in recent times. A pivotal development was the formal acknowledgment of ISL by the Indian Government in 2016, per The Rights of Persons with Disabilities Act, 2016.

Yet, the journey is far from smooth. Many institutions dedicated to deaf education adopt a hybrid methodology, intertwining oralism with facets of signing, which sometimes yields inconsistent outcomes (Moore & Panara, 2016). A primary obstacle remains the paucity of accredited ISL educators and inadequate resources, impeding the advancement of deaf education. Remarkably, the current number of certified ISL interpreters stands at around 250, serving a deaf demographic estimated between 1.8 to 7 million.

Moreover, India's diverse socio-economic and regional landscape further complicates the task of providing uniform, high-calibre education for all deaf learners. Prominent advocacy entities, like the National Association of the Deaf (NAD) in India, persistently champion more inclusive strategies, underscoring the crucial role of ISL in availing equitable academic opportunities (Kumar & Lata, 2020).

A notable step forward was the sanctioning of ISLRTC (Indian Sign Language Research & Training Centre) in 2015. In a progressive move in 2021, the Indian Prime Minister, Mr. Narendra Modi, in line with the New Education Policy 2020, introduced sign language as a formal academic discipline in schools. In the realm of

academic research, the investigator's publications such as "The Comprehension of Basic Mathematics among Children with Hearing Impairment using Multimedia in Accessible and Non-Accessible Format – A Comparative Study" featured in IEEE, and "Usage of Textbook and Accessible Electronic Multimedia Textbook for Children with Hearing Impairment in Terms of Information and Education – A Comparative Study" presented at the International Conference on Disability Communication, ICDC 2017, have been influential. Notably, the latter publication served as a foundational reference for NIOS in launching the Gyan Amrit channel 30 on the Swayam Digital platform, dedicated to offering education in sign language.

Given the context, the present study has chosen to focus on the deaf community for several compelling reasons:

**5.1.2 Discrimination among Disabilities:** Within the spectrum of disabilities, the deaf community often experiences a distinct form of discrimination compared to other disabled groups (Dhar, 2017).

**5.1.2.1 Invisible Disability:** Deafness, being a non-visible disability, brings its set of unique challenges, especially in an education system that might not recognize or accommodate its nuances (Chopra & Suresh, 2020).

**5.1.2.2 Visual Perception:** While the ability to see is often considered an advantage, for the deaf, it might become a limitation when the emphasis is on auditory learning methods.

**5.1.2.3 Visual Thinking:** Deaf individuals often think visually; however, traditional educational frameworks might not cater to this form of cognition (Smith, 2018).

**5.1.2.4 Cognitive Development:** Merely seeing does not ensure comprehensive cognitive development for deaf individuals. There's a need for specific interventions that cater to their unique learning needs (Johnson & Erting, 2019).

**5.1.2.5 Stereotyping:** A prevailing stereotype labels the deaf community as "deaf and dumb," further marginalizing them in educational and employment arenas.

**5.1.2.6 Memory Concerns:** Studies have indicated that some deaf individuals might exhibit shorter memory spans, a factor that can impact their learning process (Smith, 2018).

**5.1.2.7 Inner Sign vs. Inner Voice:** Deaf individuals often possess an 'inner sign' as opposed to an 'inner voice,' emphasizing the centrality of sign language in their cognitive processes (Liddell, 2019).

**5.1.3 Sign Language as Mother Tongue:** Sign language serves as the primary linguistic medium for many in the deaf community. Their cognitive development, therefore, is closely intertwined with the accessibility and quality of sign language education. Recognizing this, early childhood interventions that prioritize sign language can significantly boost cognitive development (Johnson & Erting, 2019).

In light of these reasons, it is important to introduce the sign language at play schools for deaf children, where the medium of instruction is sign language only, ensuring a foundational level of cognitive development and learning that is both inclusive and effective.

Entrepreneurship is a vital engine of growth in the global economy, and ensuring that all individuals, irrespective of their physical capabilities, have access to its basics is essential for inclusive economic progress. The Deaf community, representing a significant portion of the global population, often faces unique barriers to accessing information, especially in areas like entrepreneurship which may not traditionally cater to their specific needs. Digital media, with its multi-modal potential, can play an important role in bridging this accessibility gap.

This research seeks to understand the impact of accessible digital media in video format on enhancing the comprehension of the Basics of Entrepreneurship among the Deaf.

## **5.2 Justification of the Study:**

**5.2.1 Magnitude of the Issue:** According to the World Federation of the Deaf, there are approximately 70 million Deaf people worldwide. These individuals, like everyone else, deserve equal opportunities in all aspects of life, including education and business. However, the traditional educational resources related to

entrepreneurship are primarily auditory and verbally interactive, inherently excluding those who communicate through sign language or rely heavily on visual content.

**5.2.2 Digital Media as a Solution:** Digital media, especially videos, can incorporate a blend of visual, textual, and sign language elements. When correctly utilized, videos can provide comprehensive, multifaceted information to the viewer, making them an ideal medium for the Deaf community. With advancements in technology and the proliferation of online platforms, there is vast potential for creating accessible video content for Deaf learners.

**5.2.3 Empowering the Deaf Community:** Entrepreneurial knowledge empowers individuals to start their businesses, innovate, and contribute to their communities. By making the basics of entrepreneurship accessible to the Deaf, this research can potentially lead to a rise in Deaf entrepreneurs, which can consequently boost the overall socio-economic status of the Deaf community.

**5.2.4 Gap in Existing Literature:** While research exists on digital media's role in education and on methods of teaching entrepreneurship, there is limited literature specifically focused on creating entrepreneurship educational content for the Deaf. This research aims to fill this critical gap by investigating the efficacy of video-based digital media in conveying entrepreneurial concepts to the Deaf community.

**5.2.5 Potential for Wider Application:** This research, while primarily focused on the Deaf community, has implications for broader audiences. The principles of accessible design and inclusive teaching methodologies derived from this study can inform the creation of educational content for other groups with unique learning needs.

**5.2.6 Economic Implications:** By empowering the Deaf community with entrepreneurial skills, there is potential for economic growth, job creation, and community development. Every individual who gains the confidence and knowledge to launch a business or contribute to the workforce represents a step forward for inclusive economic progress.

The significance of this research is undeniable. It focuses on the crucial areas of accessibility, digital media, and entrepreneurial education, aiming to promote both social progress and economic development. By addressing the specific needs of the

Deaf community and harnessing the potential of digital media, this study seeks to make a meaningful contribution toward building a more inclusive environment for entrepreneurship.

### **5.3 Objectives of the Study:**

**5.3.1.** To prepare a profile of the Deaf Respondents **from the National Institute Speech & Hearing, Thiruvananthapuram, Kerala.**

**5.3.2.** To **Design & Develop** a **Module I** on "Interest" in accessible digital media in video format for Deaf Respondents.

**5.3.3.** To study the **Overall Effectiveness** of the **Developed Module I** on "Interest" in terms of comprehension of selected Deaf Respondents.

**5.3.4.** To study the **Differences in the Overall Effectiveness** of the **Developed Module I** on "Interest" in terms of comprehension of selected deaf in relation to the following **variables**:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.3.5.** To study the **Overall Accessibility** of the **Developed Module I** on "Interest" for selected Deaf Respondents.

**5.3.6.** To study the **Differences in the Overall Accessibility** of the **Developed Module I** on "Interest" for selected Deaf Respondents in relation to the following **variables**:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.3.7.** To study the **Accessibility** of the **Developed Module I** on "Interest" with reference to the following **features**:

- The Content
- The Sign Language
- The Visuals
- The Captions

**5.3.8.** To prepare a **Profile** of the Deaf Respondents from the **North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong-Meghalaya)**.

**5.3.9.** To **Design & Develop a Module II** on "Place/Convenience" for being an entrepreneur in accessible digital media in video format for the selected Deaf Respondents **North-East (Dimapur- Nagaland, Imphal-Manipur & Shillong -Meghalaya)**.

**5.3.10.** To **Study the Overall Effectiveness** of the **Developed Module II** on "Place/Convenience" in terms of comprehension of the selected Deaf Respondents **North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong -Meghalaya)**.

**5.3.11.** To study the **Differences in the Overall Effectiveness** of the **Developed Module II** on "Place/Convenience" in terms of comprehension of the selected deaf **North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong -Meghalaya)** in relation to the following **variables**:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.3.12.** To study the **Overall Accessibility** of the **Developed Module II** on "Place/Convenience" for the selected Deaf Respondents **North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong -Meghalaya)**.

**5.3.13.** To study the **Differences in the Overall Accessibility** of the Developed module II on "Place/Convenience" for the selected Deaf Respondents **North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong-Meghalaya)** in relation to the following **variables**:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.3.14.** To study the **Accessibility** of the developed module II on "Place/Convenience" with reference to the following **features**:

- The Content
- The Sign Language
- The Visuals
- The Captions

**5.3.15.** To prepare a **profile** of Deaf Respondents from the **Special Industrial Training Institute for PWDs, Jatni, Odisha.**

**5.3.16.** To **Design & Develop** a **Module III** on "Finance/Money: To start your own Business/Enterprise" for Deaf Respondents from the **Special Industrial Training Institute for PWDs, Jatni, Odisha.**

**5.3.17.** To **Study** the **Overall Effectiveness** of the **Developed Module III** on "Finance/Money: To start your own Business/Enterprise" in terms of comprehension of the selected Deaf Respondents from the **Special Industrial Training Institute for PWDs, Jatni, Odisha.**

**5.3.18.** To study the **Differences in the Overall Effectiveness** of the **Developed Module III** on "Finance/Money: To start your own Business/Enterprise" in terms of comprehension of the selected Deaf Respondents from the **Special Industrial Training Institute for PWDs, Jatni, Odisha** in relation to the following **variables**:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.3.19.** To study the **Overall Accessibility** of the **Developed Module III** on "Finance/Money: To start your own Business/Enterprise" for the selected Deaf Respondents from the **Special Industrial Training Institute for PWDs, Jatni, Odisha.**

**5.3.20.** To study the **Differences in the Overall Accessibility** of the **Developed Module III** on "Finance/Money: To start your own Business/Enterprise" for selected Deaf Respondents from the **Special Industrial Training Institute for PWDs, Jatni, Odisha** in relation to the following **variables**:

- Age

- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.3.21.** To study the **Accessibility** of the **Developed Module III** on "Finance/Money: To start your own Business/Enterprise" with reference to the following **features:**

- The Content
- The Sign Language
- The Visuals
- The Captions

**5.3.22.** To prepare a profile of Deaf Respondents from the **Government College for Deaf, Jaipur, Rajasthan.**

**5.3.23.** To **Design & Develop** a **Module IV** on "Resource Management: How to Manage Resources" for being an entrepreneur in accessible digital media in video format for Deaf Respondents from the **Government College for Deaf, Jaipur, Rajasthan.**

**5.3.24.** To **Study the Overall Effectiveness** of the **Developed Module IV** on "Resource Management: How to Manage Resources" in terms of comprehension of the selected Deaf Respondents from the **Government College for Deaf, Jaipur, Rajasthan.**

**5.3.25.** To study the **Differences in the Overall Effectiveness** of the **Developed Module IV** on "Resource Management: How to Manage Resources" in terms of comprehension of the selected Deaf Respondents from the **Government College for Deaf, Jaipur, Rajasthan** in relation to the following **variables:**

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.3.26.** To study the **Overall Accessibility** of the **Developed Module IV** on "Resource Management: How to Manage Resources" for the selected Deaf Respondents from the **Government College for Deaf, Jaipur, Rajasthan.**

**5.3.27.** To study the **Differences in the Overall Accessibility** of the Developed **Module IV** on "Resource Management: How to Manage Resources" for the selected Deaf Respondents from the **Government College for Deaf, Jaipur, Rajasthan** in relation to the following **variables**:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.3.28.** To **Study the Accessibility of the Developed Module IV** on "Resource Management: How to Manage Resources" with reference to the following **Features**:

- The Content
- The Sign Language
- The Visuals
- The Captions

**5.3.29.** To prepare a **profile** of the Deaf Respondents from the **Institute of Sign Language Research & Training Centre, New Delhi**.

**5.3.30.** To **Design & Develop a Module V** on "Concept of Marketing" in accessible digital media in video format for Deaf Respondents from the **Institute of Sign Language Research & Training Centre, New Delhi**.

**5.3.31.** To **Study the Overall Effectiveness** of the **Developed Module V** on "Concept of Marketing" in terms of comprehension of selected deaf respondent from the **Institute of Sign Language Research & Training Centre, New Delhi**.

**5.3.32.** To **Study the Differences in the Overall Effectiveness** of the **Developed Module V** on "Concept of Marketing" in terms of comprehension of the selected Deaf Respondents from the **Institute of Sign Language Research & Training Centre, New Delhi** in relation to the following **variables**:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

- 5.3.33.** To study the **Overall Accessibility** of the **Developed Module V** on "Concept of Marketing" for the selected deaf respondent from the **Institute of Sign Language Research & Training Centre, New Delhi**.
- 5.3.34.** To study the **Differences in the Overall Accessibility** of the **Developed Module V** on "Concept of Marketing" for selected Deaf Respondents from the **Institute of Sign Language Research & Training Centre, New Delhi** in relation to the following **variables**:
- Age
  - Gender
  - Education
  - Exposure to Social Media
  - Exposure to Accessible Media
- 5.3.35.** To study the **Accessibility** of the **Developed Module V** on "Concept of Marketing" with reference to the following **features**:
- The Content
  - The Sign Language
  - The Visuals
  - The Captions
- 5.3.36.** To prepare a **profile** of Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh**
- 5.3.37.** To study the **Overall Effectiveness** of the **Designed & Developed Module** on "Basics of Entrepreneurship" in terms of **comprehension** amongst the selected Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh**.
- 5.3.38.** To study the **Significant Differences in the Overall Effectiveness** of the **Developed Module** on "Basics of Entrepreneurship" in terms of the comprehension of the selected Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh** in relation to the following **variables**:
- Age
  - Gender
  - Education

- Exposure to Social Media
- Exposure to Accessible Media

**5.3.39.** To study **the Overall Accessibility** of the developed module on "Basics of Entrepreneurship" for the selected Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh.**

**5.3.40.** To study the **Differences in the Overall Accessibility** of the developed module on "Basics of Entrepreneurship" for the selected Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh** in relation to the following **variables:**

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.3.41.** To study the **Accessibility** of the developed module on "Basics of Entrepreneurship" with reference to the following **features:**

- The Content
- The Sign Language
- The Visuals
- The Captions

**5.3.42.** To study **the Module-Wise Overall Effectiveness** in terms of the comprehension amongst the selected Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh.**

**5.3.43.** To study the **Significant Differences in the Module-Wise Overall Effectiveness** in terms of comprehension of the selected Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh** in relation to the following **variables:**

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.3.44.** To study the **Module-Wise Overall Accessibility** for the selected Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh.**

**5.3.45.** To study the **Differences in the Module-Wise Overall Accessibility** of the developed module for the selected Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh** in relation to the following **variables:**

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.3.46.** To study the **Module-Wise Overall Accessibility** of the developed module with reference to the following **features:**

- The Content
- The Sign Language
- The Visuals
- The Captions

#### **5.4 Null Hypotheses of the Study:**

**5.4.1.** There will be no significant differences in the **overall effectiveness of the developed module I on "Interest "** in terms of comprehension of the selected Deaf Respondents **from the National Institute Speech & Hearing, Thiruvananthapuram, Kerala** in relation to the following variables:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.2.** There will be no significant differences in the **overall accessibility of the developed module I on "Interest"** for the selected Deaf Respondents **from the National Institute Speech & Hearing, Thiruvananthapuram, Kerala** in relation to the following variables:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.3.** There will be no significant differences in the **overall effectiveness of the developed module II on “Place/Convenience”** in terms of comprehension of the selected Deaf Respondents from the **North-East (Dimapur- Nagaland, Imphal-Manipur & Shillong -Meghalaya)** in relation to the following variables:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.4.** There will be **no significant differences in the overall accessibility of the developed module II on “Place/Convenience”** for the selected Deaf Respondents from the **North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong - Meghalaya)** in relation to the following **variables:**

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.5.** There will be **no significant differences in the overall effectiveness of the developed module III on "Finance/Money: To start your own Business Enterprise"** in terms of comprehension of the selected Deaf Respondents from the **Special Industrial Training Institute for PWDs, Jatni, Odisha** in relation to the following variables:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.6.** There will be **no significant differences in the overall accessibility of the developed module III on "Finance/Money: To start your own Business Enterprise"** for the selected Deaf Respondents from the **Special Industrial Training Institute for PWDs, Jatni, Odisha** in relation to the following variables:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.7.** There will be **no significant differences in the overall effectiveness of the developed module IV on "Resource Management: How to Manage Resource"** for being an entrepreneur in terms of comprehension of the selected Deaf Respondents from the **Government College for Deaf, Jaipur, Rajasthan** in relation to the following variables:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.8.** There will be **no significant differences in the overall accessibility of the developed module IV on "Resource Management: How to Manage Resource"** for being an entrepreneur for the selected Deaf Respondents from the **Government College for Deaf, Jaipur, Rajasthan** in relation to the following variables:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.9.** There will be **no significant differences in the overall effectiveness of the developed module V on "Concept of Marketing"** in terms of comprehension of the selected deaf from the **Institute of Sign Language Research & Training Centre, New Delhi** in relation to the following variables:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.10.** There will be **no significant** in the **overall accessibility of the developed module V on "Concept of Marketing"** for the selected Deaf Respondents from the **Institute of Sign Language Research & Training Centre, New Delhi** in relation to the following **variables**:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.11.** There will be **no significant differences in the overall effectiveness of the developed module on "Basics of Entrepreneurship"** between the pre & post comprehension of the selected Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh** in relation to the following **variables**:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.12.** There will be **no significant differences** in the **overall accessibility of the developed module on "Basics of Entrepreneurship"** for the selected Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh** in relation to the following **variables**

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.13.** There will be **no significant differences in the module-wise overall effectiveness** in terms of the comprehension of the selected Deaf respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh** in relation to the following **variables**:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

**5.4.14.** There will be **no significant differences in the module-wise overall accessibility** for the selected Deaf Respondents from the **Indore Deaf Bilingual Academy, Indore, Madhya Pradesh** in relation to the following **variables**:

- Age
- Gender
- Education
- Exposure to Social Media
- Exposure to Accessible Media

### **5.5 Assumptions of the Study:**

**5.5.1.** It is possible to develop & design modules in accessible digital media in video format on ‘Basics of Entrepreneurship’ for Deaf.

**5.5.2.** The modules in accessible digital media in video format on ‘Basics of Entrepreneurship’ for Deaf will be effective for comprehension of the Deaf.

**5.5.3** The respondents for the study will vary with reference to:

- Age
- Gender
- Education level
- Exposure to Social Media
- Exposure to Accessible Video Format

**5.5.4.** Respondents will take interest in the designed and developed **“Accessible Digital Media in Video format on ‘Basics of Entrepreneurship’ for Deaf”**.

### **5.6 Delimitations of the study:**

**5.6.1.** The study is delimited to the selected deaf of Kerala, North East, Odisha, Rajasthan, Delhi & Madhya Pradesh.

**5.6.2.** The study is delimited to check the overall effectiveness of the modules in accessible digital media in video format on Basics of Entrepreneurship in terms of the comprehension level of the selected Deaf Respondents.

**5.6.3.** The study is delimited to check the overall accessibility of the modules in accessible digital media in video format on Basics of Entrepreneurship with reference to the following features:

- The Content
- The Sign Language
- The Visuals
- The Captions

**5.6.4.** The study is delimited to study the following variables:

- Age
- Gender
- Education level
- Exposure to Social Media
- Exposure to Accessible Video Format

## **5.7 Operational Definition**

### **5.7.1 Accessibility of Modules Developed**

In this current study, "Module Accessibility" pertains to the ease of comprehension related to:

- The content presented
- The sign language used
- The captions provided
- The visuals shown in the video format

### **5.7.2 Digital Media**

In the current study, "digital media" specifically pertains to video content only.

### **5.7.3 Modules**

In this study, "modules" pertain to the organized educational units on "Basics of Entrepreneurship" arranged sequentially and tailored to enhance its comprehension for the deaf.

### **5.7.4 Comprehension of a module for the deaf**

Comprehension of a module for the deaf refers to the clear understanding and grasping of the content, concepts, and objectives of a specific instructional unit,

adapted or designed to cater to the unique learning needs and communication methods of deaf individuals.

### **5.7.5 Deaf**

In this study, "deaf" describes individuals with significant to profound hearing impairments who primarily communicate through sign language and are of employable age, starting from 16 years old.

### **5.7.6 Basics of Entrepreneurship**

**"Basics of Entrepreneurship" refers to the fundamental concepts of starting and managing a business. This includes understanding the:**

- Entrepreneurship: Concept & Functions
- Concept of Market
- Business Finance
- Entrepreneurship as Innovation & Problem Solving
- Resource Mobilization

## **5.8 Methodology of the Study**

The present study aimed at **“Designing and Developing Accessible Digital Media in Video-Format on Comprehension of Basics of Entrepreneurship for the Deaf”**. The study was conducted using an experimental design in the academic year 2021-24. Pre-post experimental research design was used to conduct the research. The present chapter describes the methodology used in the study. These were as follows:

### **5.8.1 Part 1: Feasibility Study**

### **5.8.2 Part 2: Designing & Development of the Modules on “Basics of Entrepreneurship” for Deaf**

### **5.8.3 Part 3: Experiment of Modules on Accessible Digital Media in Video Format on “Basics of Entrepreneurship for Deaf”**

- Construction of the Research Tool
- Validation of the Research Tool
- Ethical Clearance
- Experimental Phase
- Scoring and Categorization of the Data
- Plan of Statistical Analysis

### **5.8.1 Part 1: Feasibility Study**

A feasibility study refers to checking the possibility, viability, practicability, and probability of the research subject. The present feasibility study adopted a certain direction and willingness to carry out the lengthy and arduous research work process. In addition, it provided an insight into practical and ethical aspects, i.e., administrative structure, seeking permissions, sample availability and willingness, relevancy and effectiveness of the tools executed, methodology, etc.

#### **5.8.1.2 Phase I – Objectives of the Feasibility Study**

**5.8.1.2.1** To understand the means of livelihood of the selected deaf respondents.

**5.8.1.2.2** To understand the employment status of the selected deaf respondents.

**5.9.1.2.3** To study the awareness level of the selected deaf respondents about special employment exchange under RPWD Act.

**5.8.1.2.4** To study the Deaf person's expectations from government agencies regarding their livelihood.

**5.8.1.3 Population of the Feasibility Study:** The population studied were eligible employable deaf persons of the Vadodara District.

**5.8.1.3.1 Sample & Sampling Technique used for the Feasibility Study:** Sample is the total quantity of the things or cases and were the subject of this research. Sample is part of the universe or population (Tailor, 2005). The study of comprehension of sign language by the deaf was undertaken based on nonprobability sampling, as randomization is unimportant in selecting a sample from the population of interest, while the study was about the deaf and their comprehension. Hence, non-probability sampling techniques were appropriated for this study, where the population was clearly defined, i.e., the deaf population. This study attempted to understand the subject matter's awareness and comprehension in sign language of the special employment exchange under the RPWD Act regarding employment and livelihood, therefore a sample of 96 deaf respondents were selected through the convenient sampling technique. The study required denoting the population eligible for employment, readily accessible, in close geographical proximity, available at any given time, with a willingness to participate; included in the purpose of the study.

### **5.8.1.4 Procedure of Feasibility Study**

To understand the issues faced by the deaf community regarding employment, and to gauge their awareness about the RPWD Act and its comprehension in sign language, the following procedure was adopted:

**5.8.1.4.1 Partnership with Local NGO:** Partnered with the Vadodara-based NGO, Astitva Foundation, to initiate interactions with the deaf community about employment issues.

**5.8.1.4.2 Questionnaire Development:** A nine-question survey was designed to gather personal information, disability details, awareness of special employment exchanges, and livelihood insights. To ensure accessibility, the questionnaire was recorded in sign language on video for easy distribution. An English script was developed, and a native deaf individual was chosen to present the questions on camera. The video was then edited using the mobile app "In Shot" for final production.

**5.8.1.4.3 Validation:** Before distribution, the video underwent validation by experts including Mr. Sunil Saharabudhe, President of the All India Federation of the Deaf; two well-known interpreters, Ms. Kinjal Shah from Mumbai and Ms. Trushna from Vadodara; along with Ms. Rashmi Mehta, Principal of GD Patel Senior and Secondary Deaf School under the Mook Dhvani Trust. Their feedback, especially regarding regional variations in sign language, was incorporated.

**5.8.1.4.4 Distribution:** The video was sent to 96 deaf individuals through WhatsApp, but no responses were received. Several factors contributed to this outcome, such as the way deaf individuals primarily process information visually, challenges in retaining content, the absence of an internal voice, and difficulties in seeking assistance from family members due to communication barriers.

**5.8.1.4.5 Personal Interaction:** It was determined that face-to-face interactions were necessary to gather responses. A livelihood fair, specifically for the deaf was planned to draw the respondents to a single location for the study.

### **5.8.1.5 Challenges Faced in Feasibility Study**

**5.8.1.5.1** The study faced hurdles due to COVID-19 restrictions.

**5.8.1.5.2** Deaf community mobility issues during the pandemic made participation challenging.

Thus, the feasibility study, though impeded due to unforeseen circumstances, continued to aim to understand the unique challenges and awareness levels of the deaf community in Vadodara regarding employment.

- It was noted that deaf persons primarily process information visually and often struggle with memorization.
- Instead of an inner voice, the deaf rely on sign language, their first language, and tend to think in signs, having what might be termed an “inner sign”.
- Upon receiving a video message on their phone, the deaf individuals were unable to respond due to difficulty in memorization
- Seeking assistance from family was not always effective, since family members only grasp some basics of sign language, primarily using gestures to communicate with the deaf.
- The most effective responses were through direct face-to-face interviews conducted with them.
- The deaf community spread throughout the city made individual visits challenging, further complicated by their schedules.
- Gathering all deaf individuals at a single location was considered the best resolution.

**Consequently, a livelihood fair was set-up to ensure their presence at a designated location and time.**

#### **5.8.1.6 Phase II – Organization of the Livelihood Fair for the Deaf in Vadodara**

**5.8.1.6.1 Objective: To Facilitate employment opportunities for the deaf community in Vadodara and gather insights for a feasibility study (Phase - I).**

#### **5.8.1.6.2 Steps Involved:**

**5.8.1.6.2.1 Collaboration Initiatives:** Collaborated with the Vadodara-based NGO Astitva Foundation, along with Youth For Jobs and Piramal Glass Products, to offer 100 job opportunities. Additionally, I partnered with 10 local organizations in

Vadodara, spanning industries like manufacturing, retail, and food & beverages. I also facilitated five self-employment ventures in areas such as scent-stick production, pizza outlets, bakeries, and multi-level marketing.

**5.8.1.6.2.2 Venue Selection:** The fair was hosted at Mook Dhvani Trust's GD Patel Senior Secondary Deaf School.

**5.8.1.6.2.3 Support and Logistics:** Sign language interpreters were engaged to ensure effective communication during the interviews. Refreshments were made available for all participants, and the press was invited for coverage. Prominent local newspapers, including Sandesh Press, Gujarat Samachar, and Divya Bhaskar, featured the event in their publications.

**5.8.1.6.2.4 Team Formation and Training:** A volunteer team of 13 members, made up of graduate and post-graduate students from The Maharaja Sayajirao University of Baroda, had been formed. The group received orientation at the Department of Extension & Communication to equip them with the skills necessary for effectively coordinating with the deaf participants during the interviews.

**5.8.1.6.2.5 Participation:** 92 job seekers from Vadodara and its surrounding regions attended the fair.

### **5.8.1.7 Outcomes of Livelihood Fair**

**5.8.1.7.1 Employment Achieved:** Of the 92 job seekers who attended the fair, 27 (or 29.34%) were successful in securing job opportunities.

**5.8.1.7.2 Feasibility Study Insights:** The livelihood fair primarily aimed to conduct a feasibility study, selecting a sample of 72 participants from a total of 92 to collect sufficient responses. However, a troubling finding emerged when only 4 out of the 72 participants responded accurately. This highlighted the significant challenges faced by the deaf community in reading comprehension, revealing deeper issues within deaf education in Vadodara and the nearby regions.

**5.8.1.7.3 Educational Status of Participants:** A total of 34% of the individuals had finished their 12th class, while 38% had completed the 10th class. Meanwhile, 28% had not successfully passed the 8th standard.

**5.8.1.7.4 Adjustments Made Post Feasibility Study:** In light of the challenges encountered during the feasibility study, the approach was adjusted to improve its

effectiveness. The revised methodology focused on conducting individual interviews to enhance communication clarity. A sign language-proficient interviewer was engaged with the deaf participants, aiming to gain a more thorough understanding of their viewpoints. This adjustment highlighted both the importance of the study and the obstacles faced.

### 5.8.1.8 Modified Study:

#### 5.8.1.8.1 Procedure Adopted for the Modified Study:

- **Reassessment Due to Unmet Outcomes:** The study was re-evaluated and modified after the initial outcomes did not align with expectations.
- **Challenges in Gathering Respondents:** Securing the participation of deaf respondents proved to be a challenge, leading to a reduction in the number of interviewees. Initially planned to interview 72 individuals, the number was scaled down to 30 due to the difficulties in re-interviewing all the participants.
- **Venue for the Modified Study:** An opportunistic approach was taken by utilizing a deaf cricket tournament hosted by the Deaf Cricket Club of Baroda. This event provided access to 13 participants who had been interviewed earlier during the Livelihood Fair.
- **Further Data Collection:** The remaining 17 participants needed personal interviews. Following the Livelihood Fair, various methods were employed, such as home and workplace visits, along with collecting video interviews through WhatsApp. This process proved to be time-consuming, lasting over two months, primarily due to challenges with non-responsiveness and participants' availability. Persistent efforts were made, which included engaging the respondents' family and friends and maintaining contact with them even during travels to successfully gather the interviews.
- **Data Conversion and Verification:** Initially, all data presented in sign language was transcribed into text. A certified sign language interpreter subsequently verified the transcription to ensure its accuracy.
- **Maintaining the Deaf Perspective:** In the study, authenticity and true

representation were prioritized by focusing on the perspective of the deaf community. The questions were developed by deaf individuals themselves, and both signing and interpretation from sign language to text were carried out by native deaf individuals from Gujarat, which ensured a genuine reflection of their experiences and viewpoints. The investigator demonstrated a meticulous approach by making necessary modifications to the study procedures, addressing the challenges encountered and taking measures to ensure a comprehensive understanding from the deaf community's perspective in Gujarat.

### **5.8.1.9 Phase III- Findings of The Feasibility Study**

#### **5.8.1.9.1 Feasibility Study Findings: A Summary**

The feasibility study explored various dimensions of the deaf community's comprehension and awareness levels about their personal information, employment, and rights. Following findings emerged:

- **Reading and Comprehension Abilities:** Approximately 20% of respondents, despite completing the 8th grade, were unable to read or write basic information about themselves. This concerning statistic can be attributed to the educational approaches in special schools for the deaf, where sign language was not given priority. Instead, these schools adopted a method known as total communication, which emphasized a combination of oral speech, lip reading, and visual aids, rather than focusing on sign language as a primary mode of instruction. The emphasis in these schools seemed to be more on increasing enrollment numbers rather than ensuring that deaf students received a comprehensive education that catered to their unique needs. As a result, many students struggled with fundamental literacy skills. This highlights the urgent need to introduce sign language at the elementary level, as it could significantly enhance the comprehension and educational outcomes for deaf students, helping them better understand and engage with the curriculum.
- **Employment and Expense Management:** A significant 43.3% of respondents were able to share information about their employment status and how they manage their expenses. However, this percentage reflects a deeper issue rooted in the lack of comprehension of Gujarati and English language materials. Many deaf individuals struggle to fully understand these languages,

which limits their ability to navigate important aspects of life, including employment. This language barrier has contributed to the underachievement of initiatives like the 'Accessible India Campaign 2015,' which, despite its intentions, has not delivered the expected positive outcomes for the deaf community. Without materials and resources in formats that are accessible and comprehensible to the deaf, such campaigns fail to meet their full potential, leaving many in the community without the support they need to thrive.

- **Awareness about Rights:** None of the respondents were aware of the RPWD Act 2016 or the special employment exchange for persons with disabilities (PWD), highlighting a significant gap in their access to vital information. This lack of awareness underscores the urgent need to improve how essential information is communicated to the deaf community. The absence of knowledge about such important policies and opportunities is largely due to the failure to deliver information in a format they can easily understand, such as sign language. This communication gap has motivated further study, emphasizing the critical importance of providing information in sign language to ensure the deaf community is informed and empowered to access the rights and services available to them.

#### **5.8.1.10 Outcomes of the Modified Study after Using Sign Language:**

- **Personal Information Comprehension:** When asked in sign language, all respondents were able to answer basic questions about their name, education, and disability. Of the respondents, 26% were employed and managed their expenses independently, while the remaining 74% relied on family and relatives for financial support. Despite this, all respondents, when questioned in sign language, expressed significant challenges in finding employment, highlighting the barriers they face in accessing job opportunities. This outcome stressed the need for more comprehensive communication methods, such as sign language, to improve the deaf community's access to employment information.
- **RPWD Act Awareness:** Only one respondent was aware of the RPWD ACT 2016. This implied the necessity of communicating crucial rights and provisions in sign language to ensure that the deaf community is informed and empowered.

After finishing the feasibility study, it became evident that gathering the deaf community in one location without an event is challenging. A follow-up revealed that several deaf individuals who found employment through the Livelihood Fair left their jobs within a few months. The reasons for their leaving their jobs as follows:

- The respondents shared that they often felt excluded from daily organizational communications, which led to feelings of demotivation and invisibility within the workplace. They also experienced job discrimination, with many being assigned tasks that were outside of their job profiles.
- Additionally, they were compensated unfairly compared to their peers, further deepening their sense of inequity. These combined factors ultimately caused them to resign from their positions.

This cycle affected their performance and perpetuated negative stereotypes, rendering them financially vulnerable and reliant on their families. They often settled for lower-paying, less dignified jobs, reinforcing the stereotype that deaf individuals are inferior and deserve less. This cycle needs urgent interruption, especially given the global emphasis on inclusivity.

Although the RPWD Act 2016 and SDGs Goal 8 promote equal opportunities for all disabled individuals, their implementation seems symbolic rather than sincere, shifting from a rights-based approach to charity-driven efforts.

#### **5.8.1.11 Phase IV: The Centre of Empowerment of the Differently Abled (CEDA)**

In Phase IV, the researcher visited the Centre of Empowerment of the Differently Abled (CEDA) at the Entrepreneurship Development Institute of India (EDII) in Gandhinagar. Sponsored by the Social Justice of Empowerment Department and the Gujarat State Handicapped (Divyang) Finance & Development Corporation, the center primarily catered to individuals with physical disabilities and the visually impaired, while the deaf community remained largely overlooked. This exclusion was attributed to the absence of accessible training modules personalized for the deaf.

- **The Findings Emphasized Two Immediate Needs:** There is a pressing need to emphasize entrepreneurial opportunities tailored for the deaf community. This includes the development of educational modules on entrepreneurship that incorporate sign language, ensuring better comprehension. Additionally,

integrating digital captioning will enhance accessibility and affordability, making these resources more inclusive and effective for deaf individuals looking to pursue entrepreneurial ventures.

Addressing the above needs may rectify the challenges identified during the feasibility study. The proposed accessible educational modules aim for genuine inclusion, promoting dignity and independence for the deaf community in society's mainstream.

Therefore, a comprehensive study of the deaf population throughout selected states of India not only will provide insight into the complexities and challenges faced by the deaf community but also may present a roadmap for progress in the socioeconomic inclusion agenda. The investigator, with over a decade of expertise in deaf studies, spearheaded this nationwide research. Given India's extensive diversity, these in-depth findings are of immense importance. Vadodara is home to thousands within the deaf community. While they maintain their distinct culture, they also grapple with issues related to healthcare, education, and economic engagement. Despite the unique challenges they face, one standout observation was the minimal entrepreneurial participation of the deaf. Hence, the study seeks to address this area of concern.

It facilitated the investigator to **“Design & Develop modules for the Deaf on the Basics of Entrepreneurship using the investigator's experience in creating digital educational content tailored for the deaf in today's tech-driven classroom setting”**.

### **5.8.2 Part 2: Designing & Development of the Modules on “Basics of Entrepreneurship” for Deaf**

**5.8.2.1 Criteria for selection of the Institutes:** Higher education for the deaf in India has progressed at a slower pace due to a combination of factors. Predominantly, a lack of accessible relevantly skilled persons and infrastructure, such as sign language interpreters in educational institutions, which hinders effective learning. Additionally, societal attitudes and misconceptions about the abilities of deaf individuals lead to reduced opportunities and support. The scarcity of specialized training for educators catering to deaf students and limited resources dedicated to the creation of an inclusive curriculum further exacerbated the challenges. Many deaf students in India faced barriers that prevented access and growth in higher education environments due

to scarce specialized higher educational institutes. A targeted initiative was then launched across India to delve into higher educational aspirations and entrepreneurial inclinations of the deaf community. Thus, the following Institutes of Deaf were selected for the present study:

**Table 139: Institutes Selected for Conducting Research Study on Modules of Basics of Entrepreneurship for Deaf**

NAME OF THE INSTITUTE	PLACE OF DESIGNING & TESTING THE MODULE
NISH The National Institute of Speech & Hearing	Kerala
School & Centre of Hearing Handicapped Children Deaf Biblical Ministry in Dimapur Govt Deaf and Mute School & Manipur Deaf Association Imphal	North East
Special Industrial Training Institute for PWDs, Jatni	Odisha
Government Deaf College	Rajasthan
Indian Sign Language Research & Training Centre	New Delhi

It was planned to develop the modules on ‘Basics of Entrepreneurship’, for the above-mentioned various prestigious institutions for Deaf across the selected states of country.

#### **5.8.2.1.1 NISH: The National Institute of Speech & Hearing, Kerala**

The National Institute of Speech & Hearing situated in Thiruvananthapuram, Kerala, is a pioneer in providing higher education programs in Indian Sign Language. This institute was approached to explore post-graduate aspirations. NISH's past endeavors significantly improved the lives of those with disabilities, particularly the hearing impaired. Their commitment to impactful research in the disability and rehabilitation sectors made them an apt choice for collaboration.

The investigator applied for an internship at NISH, which, after a successful telephonic interview, entailed a range of daily tasks. These varied from observing teaching methodologies to early childhood interventions and skill training programs.

A daily log was maintained, culminating in a presentation on choosing between conventional employment and entrepreneurship.

Post-internship, the investigator sought permission for a more in-depth study from NISH's Review Authority for Research (RAR). Adherence to strict ethical guidelines and a standardized format, aligning with the American Psychological Association's seventh edition, was mandatory. Research proposals had to include various components, from title and objective to methodology and results, and even informed consent forms in multiple languages. A thorough review process ensued, requiring the investigator's patience and perseverance. Following several rounds of evaluations and an ethical clearance, the green light was given for the study at NISH.

While the internship phase fostered rapport-building, the research phase transformed the investigator's role. Upon receiving research permission, the investigator worked independently, supervised remotely by a guide from MSU Vadodara. The investigator would engage with students during specific times, and all interactions within NISH demanded prior approval. Despite initial administrative hurdles, the investigator's commitment remained unwavering. The study was executed at NISH with the cooperation of students, faculty, and staff, ensuring its content's validation and relevance.

#### **5.8.2.1.1.1 Designing and Development of Module**

Therefore, the design and development of an accessible digital media in video-format on entrepreneurship was planned, based on the Central Board of Secondary Education Class XI Book “Entrepreneurship” and Philip Kotler's 4P’s of marketing (Product, Price, Place, & Promotion) for the deaf.

**Table 140: Reference for the Design and Development of Modules on “Basics of Entrepreneurship” for Deaf**

REFERENCE	TITLE OF THE MODULES
CBSE Book “Entrepreneurship” 1 <sup>st</sup> unit “Entrepreneurship: Concept & Functions	1 <sup>st</sup> module Entitled “Interest”
CBSE Book “Entrepreneurship” 5 <sup>th</sup> unit “Concept of Market	2 <sup>nd</sup> module Entitled “Convenience/Place”

CBSE Book “Entrepreneurship” 6 <sup>th</sup> unit “Business Finance & Arithmetic	3 <sup>rd</sup> module Entitled “Finance/Money – To start your own Business/Enterprise”
CBSE Book “Entrepreneurship” 4 <sup>th</sup> unit “Entrepreneurship as Innovation & Problem Solving” & 7 <sup>th</sup> unit “Resource Mobilization”	4 <sup>th</sup> module Entitled “Resource Management: How to Manage Resource”.
CBSE Book “Entrepreneurship” 5 <sup>th</sup> unit “Concept of Market” & Philip Kotler 4P’s “Promotion”	5 <sup>th</sup> module Entitled “Concept of Marketing’

#### 5.8.2.1.1.2 Steps for Designing of a Module

**The designing of a module in an accessible digital video-format for the Deaf involved a comprehensive process that prioritized the needs and experiences of the deaf.**

- **Needs Analysis:** To study ideas and interests of students at National Institute of Speech & Hearing (NISH), Thiruvananthapuram, for becoming an entrepreneur. At NISH, it was learned that deaf students were preparing to join the industry for jobs. Though there was no 100% placement guarantee, there were students without any jobs that led us to find other options for jobs. It was decided to study their interest or ideas about self-employment.
- **Learning Objectives:** By the end of the module, students would have a fair idea about their interest or about what they want to do as an entrepreneur.
- **Content Development:** For developing the content of the Module, as described previously, the main source was the Central Board of Secondary Education for Class XI Book on “Entrepreneurship” and Philip Kotler 4ps of marketing (Product, Price, Place, & Promotion). From the CBSE Book on “Entrepreneurship”, the 1st unit “Entrepreneurship: Concept & Functions” was referred to and considered as the base to develop the 1st module entitled “Interest”. Deaf experts and educators were shown the content selected for module I to ensure its clarity, concision, and relevance with the comprehension level of the Deaf.

- **Scripting:** The scripting was framed in consultation with the subject matter and subject experts, in a way that flowed smoothly when translated into sign language.
- **Validation of the script from Experts:** The script was sent to deaf experts well-versed in sign language, viz., the President of Deaf Association, an academican of deaf studies primarily on sign language from Ali Yavar Jung National Institute of Speech & Hearing Disabilities (AYJNISHD), Mumbai, and NISH, in addition to prominent sign language interpreters, namely, General Secretary and Secretary of Indian Sign Language Interpreter Association (ISLIA) and NISH, for validation with reference to content, format and clarity.
- **Designing for Accessibility:** The following elements were considered to ensure the accessibility of the module:
  - **Sign Language:** The mother tongue of the deaf is sign language and also their learning comfort is in sign language, therefore, the sign language was used to ensure accessibility. Simple and straightforward language minus unnecessary jargon was used.
  - **A Story Format:** This technique was used to deliver the developed content to facilitate learning for deaf persons with short memory and slow grasping characteristics.
  - **Captions:** The reverse captioning technique was used for the Deaf to easily comprehend. Using this technique, captions were written the way sign language is used; conversion of sign into text. With sign language incorporated, captions further support understanding. Captions were synchronized with the content, were easy to read, sharply contrasted against the background.
  - **Consistent Layout:** A consistent layout throughout the video was maintained to make it easier to follow. This helped in reinforcing the information communicated, therefore only the location of the Tea Stall was used.

### 5.8.2.1.1.3 Development of learning module on “Basics of Entrepreneurship”- Module-I “Interest”

#### A. Pre-production

- **Storyboarding:** The script was broken down into shots, then sketched or the shot was outlined scene by scene. This helped the deaf to visualize the final video and guide the shooting process, as deaf people mainly think in visuals.
- **Select the cast/audition:** The modules were crafted to be infomercial/infotainment in nature. Therefore, the deaf well-versed in sign language, inclined towards filmmaking and a creative bent of mind were considered for the audition. A sign language interpreter was required to finish the shoot of the module per schedule effectively and smoothly,
- **Crew/Team Selection:** The entire production team comprised Deaf from pre-production: assisting in script to production, actors, actresses, and camera person to postproduction: editing, and graphics, all were executed by a deaf team with the help of sign language interpreters. This ensured accurate translation of content, so the perspective of the Deaf remained in the forefront.
- **Reece/Choose a location:** A tea stall was considered, per the requirement of the script for module-I “interest”, as well as for assessing lighting, background noise, and visual aesthetics.
- **Equipment:** Camera, microphones, lights, editing software, etc.
- **Scheduler/Shooting dates:** A rehearsal schedule with shooting dates, along with a post-production time plan helped the researcher to finish the module in the anticipated time frame.
- **Rehearsal:** At NISH the only time to rehearse was after classes, for which permission was sought to conduct rehearsals in one of the classes. During recess, a plan was formed for rehearsal after class. To monitor and gain confidence a rehearsal was conducted on the location to check time and logistics.

### **B. Production (Shooting the Video)**

A production manager ensured the availability of the cast and crew on time at location. As it was an outdoor shoot and no alternatives were planned for rainy-day scenarios, the shoot had to stop during rains, delaying the shoot. Subsequently, the time-plan was reworked as some cast had to leave earlier than expected, obligating a rework of their shoot schedule to accommodate their early exits. Furthermore, time consumed in equipment set-up was pushed through, using the storyboard and script as guides. Long signlogues obligated multiple shoots to capture the perfect shot.

### **C. Post-production**

- **Video Editing:** A team of sign language interpreters and deaf editors was formed to edit the module for okay shots, and verify sign language content on software, such as Adobe Premiere for trim, splice, and arrange video clips, insert transitions, effects, and graphics.
- **Audio Editing: Booked an audio studio at NISH on prior permission for recording voice overs,** adjusting volume levels, ensuring audio and video synchronization.
- **Color Correction/Grading:** Adjusted video colors for consistency and desired tone.
- **Add Text and Titles:** Used legible fonts for captions and ensured they fit the video's style.
- **Usability Testing:** Conducted tests with members of the Deaf community to get feedback on the clarity, pacing, and effectiveness of the module. Adjusted content and design based on feedback. Then only was the final cut presented for screening.

#### **5.9.2.1.1.4 Validation of the Developed Module:**

The developed module was screened at the Centre for Communication and Media Development (CCMD) at NISH for its validation by selected academicians of deaf studies primarily on sign language and sign language interpretation.

#### **5.8.2.1.1.5 Construction of the Research Tool:**

The research tool was developed based on the developed module considering the following parameters:

**Table 141: Description of the Research Tool for the Selected Deaf Respondents from National Institutes of Speech and Hearing (NISH), Kerala**

SECTIONS	TOOLS
Background information including variables of selected respondents	Checklist (Profile)
Comprehension of module	Checklist (Knowledge test)
Features & Aspects of module	Checklist (Accessibility test)

The first section was a checklist meant to collect specific demographic details in terms of age, gender, education level, exposure to social media and experience with accessible video formats.

The second section aimed to evaluate knowledge about the basics of entrepreneurship, focusing on “Interest”.

The third section included into module features, aspects, and problems faced in comprehending Accessible Digital Media and suggestions.

The construction of the tool was framed in simple English with multiple choices for easy comprehension for the deaf.

#### **5.8.2.1.1.6 Validation of the Research Tool:**

The research tool was validated by an academician of Deaf studies, primarily on sign language at the Centre for Communication and Media Development (CCMD), and a sign language interpreter from NISH.

#### **5.8.2.1.1.7 Screening of the Module:**

The module was projected in a classroom setting using a projector National Institutes of Speech and Hearing (NISH), Kerala.

#### **5.8.2.1.1.8 Administration of the Knowledge Test & Accessibility Scale:**

Immediately after the module screening, participants were given a test, which included knowledge and an accessibility test.

#### **5.8.2.1.1.9 Scoring & Categorization of the Independent Variables:**

The following tables describe the scoring and categorizing of the selected variables under the study.

**Table 142: Scoring and Categorization of the Independent Variables of Selected Deaf Respondents from Kerala**

VARIABLE	BASIS	CATEGORIES
Age	16-20 Years	Teenagers
	21-25 Years	Young Adults Early Adults
	26-30 Years	
Education	Males	Males
	Undergraduates	Undergraduates
Gender	Females	Females
Exposure to Social Media	Below Mean	Low Exposure High Exposure
	Mean & Above	
Exposure to Accessible Media	Below Mean	Low Exposure High Exposure
	Mean & Above	

#### 5.8.2.1.1.10 Scoring & Categorization of the Dependent Variable:

A knowledge test was prepared to measure the comprehension level of the deaf respondents regarding the content of the module screened. There were a total of 14 questions asked. A correct answer scored 1 and an incorrect answer scored 0. Thus, the maximum possible score of this test was 14, and minimum possible score was 0.

**Table 143: Scoring and Categorization of the Dependent Variable in Knowledge Test of Selected Deaf Respondents from Kerala**

VARIABLES	BASIS	CATEGORIES
Comprehension regarding the Module I	Below Mean	Low Comprehension
	Mean & Above	High Comprehension

An accessibility scale prepared to measure the reactions of the respondents regarding the accessibility of the module screened. There were a total of nine questions asked in the research tool. The correct answer scored 1 and an incorrect answer scored 0. Thus, the maximum possible score of this test was 9, and the minimum possible score was 0.

**Table 144: Scoring and Categorization of Dependent Variable in Accessibility Test of Selected Deaf Respondents from Kerala**

VARIABLES	BASIS	CATEGORIES
Accessibility of the Module I	Below Mean	Low Accessibility
	Mean & above	High Accessibility

#### **5.8.2.1.1.11 Learning from Module I:**

Signlogue must be short and an introduction of each character must be indicated in the beginning for easy relation and identification of each character to easily differentiate which is which.

#### **5.8.2.1.2 Criteria for Selection of the Institutes in the North-East:**

The North-East states of India have historically faced challenges related to geographical isolation, limited infrastructure, socio-political issues, and lack of awareness about the needs of differently abled populations. As a result, the development of specialized higher education facilities for the deaf remains inadequate. While there are institutions that offer support for the differently abled in other parts of India, the North-East has not experienced equivalent growth. This can be attributed to a combination of limited resources, other pressing regional priorities, perhaps a lack of advocacy for the deaf community, and/or lack of representation in these areas. The overarching issue is a complex interplay of regional challenges and the specific needs of the deaf community, leading to a lack of dedicated institutions and programs in the North-East.

#### **5.8.2.1.2.1 Designing of module on “Basics of Entrepreneurship”- Module-II “Place/ Convenience” for Selected Deaf of North East (Meghalaya, Nagaland, Manipur)**

The investigator delved into the research of Dr. Melissa Wallang, an Associate Professor of Linguistics at NERIE, NCERT Umiam, Meghalaya. Her examination of ‘Deafness and a Village Sign Language Community in Meghalaya’ inspired the present study at the School & Centre of Hearing Handicapped Children (SCHHC), Shillong, Meghalaya. Before liaising with Dr. Wallang, a comprehensive review was undertaken. Upon seeking advice from experts and professionals in the deaf studies

domain, the investigator connected with Dr. Wallang. She graciously deputed a PhD student to aid the present research in Meghalaya. The assigned scholar provided with crucial contacts within Shillong's Deaf community. Following these leads, eventually coordinated with an educator at Bethany's society, who directed to the Principal of SCHHC. The principal outlined specific research prerequisites concerning the safety and protection of special needs children, including obtaining various permissions and certificates. To satisfy these requirements, the investigator engaged with the Director of Health Services (MI), Meghalaya, and other significant authorities. Upon securing the necessary approvals, the SCHHC, Principal, facilitated our research.

- **Content Development:** For developing the content of the Module, as mentioned earlier, the main source was the Central Board of Secondary Education for Class XI Book on "Entrepreneurship" and Philip Kotler 4ps of marketing (Product, Price, Place, & Promotion).

From the CBSE Book on "Entrepreneurship", the 5<sup>th</sup> unit "Concept of Market" was referred to and considered as the base for developing the 2<sup>nd</sup> module entitled "Convenience/Place".

Deaf experts and educators were shown the content selected for module II to ensure its clarity, concision and relevance with the comprehension level of the Deaf.

- **Scripting:** The scripting was framed in consultation with the subject matter and subject experts, in a way that flowed smoothly when translated into sign language.

**5.8.2.1.2.2 Validation of the script from Experts:** The script was sent to deaf experts, well-versed in sign language like the president and some selected deaf members of the Meghalaya Deaf Association; academician of deaf studies primarily on sign language Dr. Wallang; and the SCHHC's Principal and faculty for validation with reference to content, format and clarity.

Casting for this fictional module was challenging, but after extensive scouting, investigator managed to enlist participants. The module's shooting, split into indoor and outdoor sessions was successfully concluded with the support of sign language interpreters. Subsequently, the module was showcased for feedback from Deaf experts – State Education Mission Authority of Meghalaya (SEMAM) officials, and the

Meghalaya Deaf Association members. Interestingly, the administrative engagements during this process aided a local resident in obtaining crucial resources for her differently abled daughter, revealing a skewed focus on rural areas over urban ones.

In Nagaland, Dr. Wallang and her scholar suggested to explore the Deaf Biblical Ministry in Dimapur. Founded in 1987, this institution educates deaf students from grades 1-10, using English & American Sign Language (ASL). The second module, primarily in ISL, posed a linguistic challenge, but the school's principal, proficient in both sign languages, bridged the gap.

In Manipur, post validation of the module, investigator journeyed to Imphal. Recognizing that the Deaf often knew multiple languages, the team was eager to extend its research there. Given that higher education opportunities for the deaf are limited in Manipur investigator collaborated with a former General Secretary of the Manipur Deaf Association. Though, the research endeavour to assemble the adult deaf community in Imphal faced hurdles. Though, undeterred, investigator aspired to extend the present research to other regions. The second module validation in Imphal concluded right before the Christmas break. The experiences in Imphal emphasized that many individuals with disabilities remain unaware of their rights, particularly concerning their UDID.

#### **5.8.2.1.2.3 Development of learning module on “Basics of Entrepreneurship”- Module-II “Place/ Convenience” for Selected Deaf of North East (Meghalaya, Nagaland, Manipur)**

The second module, which is based on CBSE Book “Entrepreneurship” 5th unit “Concept of Market” led to the development of the 2nd module “Place/ Convenience” and was scheduled for development in Shillong Meghalaya. All the parameters in the design and development of 1st module were also implemented in the second module. However, unlike module I, a story of 5 friends, and one set-up at an outdoor tea stall, Module II was framed with three stories divided in three chapters and two set-ups. In Module II, one was an indoor home set-up, and the second was a set-up outside a girl’s college. All the three stories had different casts. The first story/chapter included a father and daughter and the daughter’s aspirations. The second story/chapter was about three college-going girls and their aspirations. The third story/chapter was about

two brothers, their mother and a friend and their struggle. This module's signlogues of all three chapters were short and easy to sign. In this instance, each character's introduction was in the beginning of the story, so it was easier to relate.

**5.8.2.1.2.4 Validation of the Developed Module:** The developed module was screened at the hall in the School & Centre of Hearing Handicapped Children (SCHHC) for its validation from selected academicians of deaf studies primarily on sign language, namely, the Principal, faculty staff of SCHHC, an official of the state's Education Ministry of Meghalaya, and a sign language interpreter from Shillong based on a developed

**5.8.2.1.2.5 Construction of the Research Tool:** The research tool was developed module with following sections:

The first section includes a checklist meant to collect specific demographic details in terms of age, gender, education level, exposure to social media and experience with accessible video-format.

The second section aimed to evaluate knowledge about the basics of entrepreneurship, focused on the "Convenience/Place".

The third section delved into module features, aspects, problems faced in comprehending Accessible Digital Media, and suggestions.

The construction of the tool was in simple English with multiple choices for easy comprehension for the deaf.

**Table 145: Description of the Research Tool of Selected Deaf Respondents from North East**

SECTIONS	TOOLS
Background information including variables of selected respondents	Checklist (Profile)
Comprehension of module	Checklist (Knowledge test)
Features & Aspects of module	Checklist (Accessibility test)

**5.8.2.1.2.6 Validation of the research Tool:** The research tool was validated by an academician of Deaf studies primarily on sign language, the principal, faculty staff at SCHHC, and a sign language interpreter from Shillong.

**5.8.2.1.2.7 Screening of the Module:** The module was showcased in a classroom setting using a projector.

**5.8.2.1.2.8 Administration of the Knowledge Test & Accessibility Scale:** After module screening, participants were immediately given a test, which included knowledge and an accessibility test.

**5.8.2.1.2.9 Scoring & Categorization of the Independent Variables:** The following Tables describe scoring & categorizing of the selected variables under the study.

**Table 146: Scoring and Categorization of the Independent Variables of Selected Deaf Respondents from North East**

VARIABLE	BASIS	CATEGORIES
Age	16-20 Years	Teenagers
	21-25 Years	Young Adults
	26-30 Years	Early Adults
Education	8 <sup>th</sup> Pass	Middle
	10 <sup>th</sup> Pass	Secondary
	12 <sup>th</sup> Pass	Senior Secondary
	Undergraduates	Undergraduates
Gender	Females	Females
	Males	Males
Exposure to Social Media	Below Mean Mean & Above	Low Exposure High Exposure
Exposure to Accessible Media	Below Mean Mean & Above	Low Exposure High Exposure

**5.8.2.1.2.10 Scoring & Categorization of the Dependent Variables:** A knowledge test prepared, measured the respondent’s comprehension-level regarding the content of the module screened. There was a total of 14 questions asked. The correct answer scored 1 and an incorrect answer scored 0.

Thus, the maximum possible score for this test was 14, and the minimum possible score was 0.

**Table 147: Scoring and Categorization of the Dependent Variables in Knowledge Test of Selected Deaf Respondents from North East.**

VARIABLES	BASIS	CATEGORIES
Comprehension regarding the Module II	Below Mean	Low Comprehension
	Mean & above	

An accessibility scale prepared, measured the reactions of the respondents regarding the accessibility of the module screened. There was a total of 9 questions asked. The

correct answer scored 1 and an incorrect answer scored 0. Thus, the maximum possible score for this test was 9, and the minimum possible score was 0.

**Table 148: Scoring and Categorization of the Dependent Variables in Accessibility Test of Selected Deaf Respondents from North East**

VARIABLES	BASIS	CATEGORIES
Accessibility of the Module II	Below Mean	Low Accessibility
	Mean & Above	High Accessibility

#### 5.8.2.1.2.11 Learning from Module II

In the three stories, all the cast consisted of native Deaf, except two characters/roles, one of a father and the other a mother in chapter 1 and chapter 3 respectively. Though both, mother & father, were in fact the actual mother and father of the Deaf kids, yet multiple takes were taken, delaying the shoot.

#### 5.8.2.1.3 Criteria for Selection of the Institutes in Odisha

Module III, based on the CBSE Book “Entrepreneurship”, 6th unit “Business Finance & Arithmetic”, led the development of the 3rd module “Finance/Money: To start your own Business/Enterprise”. All the parameters in the design and development implemented in I & II module were also implemented in this module. Except this module was non-fiction based and interview based. This module focused on Finance Schemes to start businesses, therefore interviews of officials at the State Government of Odisha, Swabhiman NGO, and S.NO.M Group CSR, were featured with the service of sign language interpreters.

Mr. Sibaji Panda of Odisha, a renowned researcher in Deaf sign language and the founder of Happy Hand School, motivated us to undertake validation at the Bhubaneswar-based Satyabhama Devi College for the Deaf. When planning to execute research at this college, which receives support from the Department of Social Security & Empowerment of Person with Disability (SSEPD) — a division dedicated to individuals with disabilities under the Odisha government — permissions were to sought from the Secretary and Commissioner of SSEPD. Meeting the Commissioner proved challenging, as he was available only on Mondays between 3 and 5 pm. Due to holidays and absences, it took a month to finally appoint a

scheduled meeting. However, investigator's request was initially declined. Persistence led to case being referred to a senior department director, an IAS officer, which added another month of waiting due to bureaucratic delays.

After a two-month-long effort, finally secured the necessary permission to conduct the research.

#### **5.8.2.1.3.1 Designing of learning module on “Basics of Entrepreneurship”- Module-III “Finance/Money: To start your own Business/Enterprise” for Selected Deaf of Odisha**

- **Content Development:** For developing the content of the Module, as described previously, the main source was the Central Board of Secondary Education for Class XI Book on “Entrepreneurship” and Philip Kotler 4ps of marketing (Product, Price, Place, & Promotion).

From the CBSE Book on “Entrepreneurship”, 5<sup>th</sup> unit 6th unit “Business Finance & Arithmetic”, led the development of the 3rd module “Finance/Money: To start your own Business/Enterprise”.

Deaf experts and educators were shown the content selected for module III to ensure its clarity, concision and relevance with the comprehension level of the Deaf.

- **Scripting:** The scripting was framed in consultation with the subject matter and subject experts, in a way that flowed smoothly when translated into sign language.

**5.8.2.1.3.2 Validation of the script from Experts:** The script was sent to Deaf experts, well-versed in sign language, to mention a few, the President and some selected Deaf members at the Odisha Deaf Association; academician of Deaf studies, primarily on sign language from regional centre of AYJNISHD; and a sign language interpreter for validation with reference to content, format and clarity.

Yet, another challenge arose: a student raised concerns about the food quality at Satyabhama Devi College. As a result, the SSEPD launched an investigation, and the research was put on hold until the inquiry concluded.

#### **5.8.2.1.3.3 Development of Module III “Finance/ Money: To start your own Business/ Enterprise”**

This module delved into financial programs designed for individuals with disabilities looking to start a business. Initially intended to craft a fictional narrative for this module, but a lack of student’s participation from Satyabhama College made it unfeasible. Consequently, transitioned to a nonfictional approach, centring on financial aspects. We reached out to the National Handicapped Financial Development Corporation (NHFDC), learning about their collaboration with the Punjab National Bank (PNB) and IDBI Bank. Investigators exploration led to interview the Under-Secretary of SSEPD, Government of Odisha, who, being visually impaired, necessitated the assistance of a sign language interpreter. The under-secretary provided insights into both state and NHFDC/PNB financial programs for the disabled community. An interview with the chairman of S.NO.M Group was also scheduled to understand their Corporate Social Responsibility (CSR) initiatives, which again involved the services of a sign language interpreter. Third interview featured the Project Officer from the Swabhiman NGO in Bhubaneswar, who was hearing-abled. Therefore, her discussion about their livelihood projects for the disabled community was translated by a sign language interpreter. This module primarily centred on financial opportunities for businesses owned by those with disabilities. In the course of the investigation, a critical gap was identified in the Odisha Government's support system: the lack of sign language interpreters in educational institutions for the deaf, including schools and specialized ITIs. This finding underscored a pervasive issue in India's Deaf education system, motivating us to broaden our inquiry across the country.

**5.8.2.1.3.4 Validation of the Developed Module:** The developed module was screened at the Odisha Deaf Association Hall for its validation from selected deaf official and members of Odisha, including the Deaf Association, academicians of deaf studies primarily on sign language from the regional center AYJNISHD, and sign language interpreters from Bhubaneswar.

**5.8.2.1.3.5 Construction of the Research Tool:** The research tool was developed based on developed module with following section:

**Table 149: Description of the Research Tool for the Selected Deaf Respondents from Odisha**

SECTIONS	TOOLS
Background information including variables of selected respondents	Checklist (Profile)
Comprehension of module	Checklist (Knowledge test)
Features & Aspects of module	Checklist (Accessibility test)

The first section is a checklist meant to collect specific demographic details in terms of age, gender, education-level, exposure to social media and experience with accessible video-format.

The second section aims to evaluate knowledge about the basics of entrepreneurship, focusing on “Finance/ Money – To Start your Own Business/ Enterprise”.

The third section delves into module features, aspects, problems faced in comprehending Accessible Digital Media and suggestions.

The construction of the tool implemented simple English with multiple choices for easy comprehension for deaf.

**5.8.2.1.3.6 Validation of the research Tool:** The research tool was validated by selected deaf official and members of the Odisha Deaf Association; academicians of deaf studies, primarily on sign language from the regional centre AYJNISHD; Deaf College; an NGO working for the Deaf; and a sign language interpreter from Bhubaneswar.

**5.8.2.1.3.7 Screening of the Module:** The module was showcased in a classroom setting using a projector.

**5.8.2.1.3.8 Administration of the knowledge test & Reaction Scale:** After module screening, participants were immediately given a test, which included a knowledge and an accessibility test.

**5.8.2.1.3.9 Scoring & Categorization of the Independent Variables:** The Following Table describe scoring and Categorizing of the selected variables under the study.

**Table 150: Scoring and Categorization of the Independent Variables of Deaf Respondents from Odisha**

VARIABLE	BASIS	CATEGORIES
Age	16-20 Years	Teenagers
	21-25 Years	Young Adults
	26-30 Years	Early Adults
Education	8 <sup>th</sup> Pass	Middle
	10 <sup>th</sup> Pass	Secondary
	12 <sup>th</sup> Pass	Senior Secondary
	Undergraduates	Undergraduates
Gender	Males	Males
	Females	Females
Exposure to Social Media	Below Mean	Low Exposure
	Mean & Above	High Exposure
Exposure to Accessible Media	Below Mean	Low Exposure
	Mean & Above	High Exposure

**5.8.2.1.3.10 Scoring & Categorization of the Dependent Variables:** A knowledge test prepared, measured the comprehension level of the respondents regarding the content of the module screened. There was a total of 14 questions asked. The correct answer scored 1 and an incorrect answer scored 0. Thus, the maximum possible score for this test was 14 and the minimum possible score 0.

**Table 151: Scoring and Categorization of Scores in Knowledge Test of Selected Deaf Respondents from Odisha.**

VARIABLES	BASIS	CATEGORIES
Comprehension regarding the Module III	Below Mean	Low Comprehension
	Mean & Above	High Comprehension

An Accessibility scale prepared, measured the reactions of the respondents regarding the accessibility of the module screened. There was a total of 9 questions asked. The correct answer scored 1, and an incorrect answer scored 0. Thus, the maximum possible score of this test was 9, and the minimum possible score 0.

**Table 152: Scoring and Categorization of Scores in Accessibility Test of Selected Deaf Respondents from Odisha**

VARIABLES	BASIS	CATEGORIES
Accessibility of the Module III	Below Mean	Low Accessibility
	Mean & Above	High Accessibility

#### **5.8.2.1.3.11 Learning from Module –III**

Though the interpreter was a qualified interpreter and teaching deaf students in a government aided Deaf school run by the Odisha Deaf Association, they still could not match signs with the native deaf. Learning from this module was to only use/employ the Deaf when involved in policies or issues related to the Deaf community. Also, there was no Deaf working in the Department of SSEPD, Odisha Government; in the NGO, Swabhiman and S.NO.M Group, CSR, or otherwise a well-versed sign language interpreter.

#### **5.8.2.1.4 Criteria for Selection of the Institutes in Rajasthan**

Having spent over a decade studying the deaf community, the researcher is familiar with the Jaipur Government Deaf College – the sole co-educational institution in Rajasthan catering to the deaf. Established in 2016, the college offers a Bachelor of Arts program in various disciplines, including Hindi, English, Political Science, Sociology, Public Administration, and Drawing. For the present study, which focused on resource management, the researcher sought to identify self-employed deaf individuals.

##### **5.8.2.1.4.1 Designing of learning module on “Basics of Entrepreneurship”- Module-IV “Resource Management: How to Manage Resource” for Selected Deaf of Rajasthan**

- **Content Development:** For developing the content of the Module, as described previously, the main source was the Central Board of Secondary Education for Class XI Book on “Entrepreneurship” and Philip Kotler 4ps of marketing (Product, Price, Place, & Promotion).

From the CBSE Book on “Entrepreneurship”, 4<sup>th</sup> unit “Entrepreneurship as Innovation & Problem Solving” & 7<sup>th</sup> unit “Resource Mobilization”.

Deaf experts and educators were shown the content selected for module IV to ensure its clarity, concision and relevance with the comprehension level of the Deaf.

- **Scripting:** The scripting was framed in consultation with the subject matter and subject experts, in a way that flowed smoothly when translated into sign language.

**5.8.2.1.4.2 Validation of the Script from Experts:** The script was sent to Deaf experts, well-versed in sign language, such as, an academician of Deaf studies primarily on sign language from the Jaipur Government Deaf College, and a sign language interpreter for validation with reference to content, format and clarity.

Subsequently, an opportunity arose to hold a workshop on entrepreneurship. Given the tight timeline – as the college was soon closing for exam preparations – the researcher had to swiftly shoot and edit the workshop's footage. This content was then presented to the faculty, staff, and students at the Jaipur Government Deaf College for validation.

**5.8.2.1.4.3 Development of Module IV: “Resource Management: How to Manage Resource”**

While conducting research, investigator received help from a college alumna skilled in sign-language interpretation. Her expertise enabled us to coordinate interviews with Deaf entrepreneurs, though finding participants was initially difficult. Thus sought assistance from the Deaf Association, parents and children of Deaf adults (CODA), siblings of Deaf adults (SODA), and educators with ties to the Deaf community, which helped to arrange the interviews. However, unexpected obligations led to the cancellation of some interviews at the last minute.

The module's script followed a non-fiction format, with interviews taking place at business locations of the participants. This setup necessitated detailed planning to conduct interviews throughout Jaipur City. Thus, a list of Deaf entrepreneurs was compiled and sought their agreement to participate. During the first interview, a Deaf entrepreneur was uncomfortable discussing his earnings and reluctant to be filmed. Then after persuasion the investigator was allowed filming at their respective business sites. Since all participants were Deaf entrepreneurs, their interviews were filmed

directly with prior approval, accommodating their schedules. For instance, interview of a stationary owner was scheduled in the morning because his shop was near a school. Investigator also spoke with a Deaf female entrepreneur who operated a boutique from her house, another running a parlour from her home, and a confectionery owner. Each one was interviewed at their business premises about managing their operations. Once the shooting was completed the task of editing was done for three days, & the module was completed.

**5.8.2.1.4.4 Validation of the Developed Module:** The developed module was screened to Deaf experts, well-versed in sign language, such as academicians of deaf studies primarily on sign language from Government Deaf College Jaipur, and a sign language interpreter for validation with reference to content, format and clarity.

**5.8.2.1.4.5 Construction of the Research Tool:** The research tool was developed based on developed modules considering the following parameters:

**Table 153: Description of the Research Tool for the Selected Deaf Respondents from Rajasthan**

SECTIONS	TOOLS
Background information including variables of selected respondents	Checklist (Profile)
Comprehension of module	Checklist (Knowledge test)
Features & Aspects of module	Checklist (Accessibility test)

The first section is a checklist meant to collect specific demographic details in terms of age, gender, education-level, exposure to social media and experience with accessible video-format.

The second section aims to evaluate knowledge about the basics of entrepreneurship focusing on “Resource Management: How to Manage Resource”.

The third section delves into module features, aspects, problems faced in comprehending Accessible Digital Media and suggestions.

The construction of the tool was in simple English with multiple choices for easy comprehension for deaf.

**5.8.2.1.4.6 Validation of the research Tool:** The research tool was validated by an academican of Deaf studies primarily on sign language, Principal, faculty staff of Govt. Deaf College, and a sign language interpreter from Jaipur.

**5.8.2.1.4.7 Screening of the Module:** The module was showcased in a classroom setting using a projector.

**5.8.2.1.4.8 Administration of the Knowledge Test & Reaction Scale:** After module screening, participants were immediately given a test, which included a knowledge and an accessibility test.

**5.8.2.1.4.9 Scoring & Categorization of the Independent Variables:** The following Tables describe scoring and Categorizing of the selected variables under the study.

**Table 154: Scoring and Categorization of the Independent Variables of Selected Deaf Respondents from Rajasthan**

VARIABLE	BASIS	CATEGORIES
Age	16-20 Years	Teenagers
	21-25 Years	Young Adults Early Adults
	26-30 Years	
Education	10 <sup>th</sup> Pass	Secondary
	12 <sup>th</sup> Pass	Senior Secondary
	Undergraduates	Undergraduates
Gender	Males	Males
	Females	Females
Exposure to Social Media	Below Mean	Low Exposure
	Mean & Above	High Exposure
Exposure to Accessible Media	Below Mean	Low Exposure
	Mean & Above	High Exposure

**5.8.2.1.4.10 Scoring & Categorization of the Dependent Variables:** A knowledge test prepared, measured the comprehension level of the respondents regarding the content of the module screened. There was a total of 14 questions asked. The correct answer scored 1 and an incorrect answer scored 0. Thus, the maximum possible score of this test was 14, and the minimum possible score was 0.

**Table 155: Scoring and Categorization of Scores in Knowledge Test of Selected Deaf Respondents from Rajasthan**

VARIABLES	BASIS	CATEGORIES
Comprehension regarding the Module IV	Below Mean	Low Comprehension
	Mean & Above	High Comprehension

An Accessibility scale prepared, measured the reactions of the respondents regarding the accessibility of the module screened. There was a total of 9 questions asked. A correct answer scored 1 and an incorrect answer scored 0. Thus, the maximum possible score on the test was 9, and the minimum possible score was 0.

**Table 156: Categorization and Scoring of Scores in Accessibility Test of Selected Deaf Respondents from Rajasthan**

VARIABLES	BASIS	CATEGORIES
Accessibility of the Module IV	Below Mean	Low Accessibility
	Mean & Above	High Accessibility

#### 5.8.2.1.4.11 Learning from Module IV

The fourth module, based on the CBSE Book “Entrepreneurship”, 4th unit “Entrepreneurship as Innovation & Problem Solving”, and 7th unit “Resource Mobilization”, led the development of the 4th module “Resource Management: How to Manage Resource”. All the parameters of design and development of the module implemented in the 1st & 2nd modules were implemented in this module. Similar to the 3rd module, this module was also non-fiction and interview-based of deaf entrepreneurs.

#### 5.8.2.1.5 Criteria for Selection of the Institutes in Delhi

The final module focused on Marketing and was developed at the Indian Sign Language Research & Training Centre (ISLRTC), which was established in New Delhi on September 28, 2015. The researcher, having studied at the AYJ National Institute of Speech and Hearing Disabilities (AYJNISHD), utilized contacts from the institute who currently work at ISLRTC. Due to ISLRTC's governmental affiliation, obtaining permission to conduct research there required adherence to established protocols.

#### **5.8.2.1.5.1 Designing of learning module on “Basics of Entrepreneurship”- Module-V “Concept of Market” for Selected Deaf of Delhi**

- **Content Development:** For developing the content of the Module, as described previously, the main source was the Central Board of Secondary Education for Class XI Book on “Entrepreneurship” and Philip Kotler 4ps of marketing (Product, Price, Place, & Promotion).

From the CBSE Book on “Entrepreneurship”, 5<sup>th</sup> unit “Concept of Market” was referred to and considered as the base to develop the 5<sup>th</sup> module entitled “Concept of Market” Deaf experts and educators were shown the content selected for module V to ensure its clarity, concision and relevance with the comprehension level of the Deaf.

- **Development of Script:** After securing permission from the ISLRTC's Director, logistical challenges arose, particularly concerning student schedules. Students were tasked with drafting a script as an assignment.

**5.8.2.1.5.2 Validation of the script from Experts:** This script underwent consultation with deaf teachers and sign language interpreters before being implemented in the shoot. The script was sent to Deaf experts, well-versed in sign language, such, an academician of Deaf studies, primarily on sign language from the Indian Sign language Research & Training Centre (ISLRTC), and a sign language interpreter for validation with reference to content, format and clarity.

#### **5.8.2.1.5.3 Development of Module V: “Concept of Marketing”**

Due to class commitments, students would miss their sessions for filming, restricting the shooting opportunities during the alumna's class timings. However, several students with prior experience in filmmaking stepped up and played a significant role in developing the module. Rehearsals were planned & arranged during their regular classes to familiarize them with their roles. Once roles and scenes were finalized, the students were provided flexibility to help in production and post-production of the module based on their availability.

**5.8.2.1.5.4 Validation of the Developed Module:** The developed module was screened for Deaf experts, well-versed in sign language, such as, an academician of Deaf studies primarily on sign language from the Indian Sign language Research & Training Centre (ISLRTC), and sign language interpreters for validation with reference to content, format and clarity.

**5.8.2.1.5.5 Construction of the Research Tool:** The research tool was developed based on developed modules with following sections:

**Table 157: Description of the Research Tool of Selected Deaf Respondents from Delhi**

SECTIONS	TOOLS
Background information including variables of selected respondents	Checklist (Profile)
Comprehension of module	Checklist (Comprehension test)
Features & Aspects of module	Checklist (Accessibility test)

The first section is a checklist meant to collect specific demographic details in terms of age, gender, education-level, exposure to social media and experience with accessible video-formats.

The second section aims to evaluate knowledge about the basics of entrepreneurship focusing on “Concept of Marketing”.

The third section delves into module features, aspects, problems faced in comprehending Accessible Digital Media and suggestions.

The construction of the tool was made in simple English with multiple choices for easy comprehension for deaf.

**5.8.2.1.5.6 Validation of the research Tool:** The research tool was validated by academicians of Deaf studies primarily on sign language from the Indian Sign language Research & Training Centre (ISLRTC), and sign language interpreters, New Delhi.

**5.8.2.1.5.7 Screening of the Module:** The module was showcased in a classroom setting using a projector.

**5.8.2.1.5.9 Administration of the Knowledge Test & Reaction Scale:** After module screening, participants were immediately given a test, which included knowledge and an accessibility test.

**5.8.2.1.5.9 Scoring & Categorization of the Independent Variables:** The following Tables describe scoring and categorizing of the selected variables under the study.

**Table 158: Scoring and Categorization of the Independent Variables of Selected Deaf Respondents from Delhi**

VARIABLE	BASIS	CATEGORIES
Age	16-20 Years	Teenagers
	21-25 Years	Young Adults Early
	26-30 Years	Adults
Education	12 <sup>th</sup> Pass	Senior Secondary
	Undergraduates	Undergraduates
Gender	Males	Males
	Females	Females
Exposure to Social Media	Below Mean	Low Exposure
	Mean & above	High Exposure
Exposure to Accessible Media	Below Mean	Low Exposure
	Mean & above	High Exposure

#### 5.8.2.1.5.10 Scoring & Categorization of the Dependent Variables:

A knowledge test prepared, measured the comprehension-level of the respondents regarding the content of the module screened. There was a total of 14 questions asked. A correct answer scored 1 and an incorrect answer scored 0. Thus, the maximum possible score of this test was 14, and the minimum possible score was 0.

**Table 159: Scoring and Categorization of Scores in Knowledge Test of Selected Deaf Respondents from Delhi**

VARIABLES	BASIS	CATEGORIES
Comprehension regarding the Module V	Below Mean	Low Comprehension
	Mean & Above	High Comprehension

An Accessibility scale prepared, measured the reactions of the respondents regarding the accessibility of the module screened. There was a total of 9 questions asked. A correct answer scored 1 and an incorrect answer scored 0. Thus, the maximum possible score of this test was 9, and the minimum possible score was 0.

**Table 160: Scoring and Categorization of Scores in Accessibility Test of Selected Deaf Respondents from Delhi**

VARIABLES	BASIS	CATEGORIES
Accessibility of the Module V	Below Mean	Low Accessibility
	Mean & Above	High Accessibility

#### 5.8.2.1.5.11 Learning from Module V

The fifth module, based on the CBSE Book “Entrepreneurship”, 5th unit “Concept of Market”, & Philip Kotler 4ps “Promotion”, led to the development of the 5th module “Concept of Marketing”. All the parameters of design and development implemented in the I & II modules were implemented in this module. The script of the 5th module on “Concept of Marketing” was fiction and in a story form with 5 characters, 3 females and two males as the lead.

**Part 3: Experiment of Modules on Accessible Digital Media in Video Format on “Basics of Entrepreneurship” for Deaf**

**5.8.3 Planning for the Final Experiment**

The Feasibility Study was conducted in Vadodara, the city housing the investigator's university, which also served as the planned location for the final pre-post evaluation. Due to observed challenges in gathering deaf individuals initially in Vadodara for a single event, it was deemed necessary to create an event to accomplish this. A workshop was proposed in collaboration with the Vadodara Municipal Corporation (VMC) and Mook Badhir Mandal (MBM), under the auspices of the Department of Extension & Communication, Faculty of Family & Community Sciences at The Maharaja Sayajirao University of Baroda (MSUB). The researcher obtained a support letter for the workshop, where all modules on entrepreneurship for the Deaf would be presented. While VMC was hesitant to participate under the MSUB banner, MBM endorsed the event. After VMC's withdrawal, United Way of Baroda, a Vadodara-based NGO, was approached but subsequently declined participation.

Consequently, Indore was selected due to existing connections with the Indore Deaf Bilingual Academy (IDBA). Managed by Mook Badhir Sangathan, IDBA offers a comprehensive educational program, from nursery to post-graduation levels, including various vocational training courses. Central to IDBA's ethos is Educational Bilingualism, which emphasizes teaching through Indian Sign Language (ISL), ensuring fluency in ISL among both teachers and students.

### 5.8.3.1 Research Instrument Development

A research instrument was devised that employed questionnaires in both sign language and English. This tool mainly utilized objective-type questions in a yes/no format and multiple choices.

The investigator designed the following sections to gather data:

**Table 161: Description of the Research Tool for the Selected Deaf Respondents from Madhya Pradesh**

SECTIONS	TOOLS
Background information including variables of selected respondents	Checklist (Profile)
Comprehension of module	Checklist (Comprehension test)
Features & Aspects of module	Checklist (Accessibility test)

The first section was to collect specific demographic details in terms of age, gender, education level, exposure to social media and experience with accessible video format.

The second section aimed to evaluate knowledge about the basics of entrepreneurship, focusing on Interest, Convenience/Place, Finance/Money: To Start Your Own Business/Enterprise, Concept of Marketing and Resource Management: How to Manage Resources.

The third section delved into module features, aspects, problems faced in comprehending Accessible Digital Media and suggestions.

### 5.8.3.2 Research Tool Validation

The research tools were validated by the experts in the field of Deaf Disability. The validators were requested to review the tools and give their expert critical remarks about the content, framing of the questions/statements, clarity of the language, ease in comprehension, and the time required to complete the tool. The researcher invited suggestions to include in the research tool. However no major suggestions were received.

### 5.8.3.3 Ethical Considerations

During the research study, the investigator considered and followed the necessary ethical measures. First and foremost, important permissions were sought from the administrative authorities of various institutes/organisations for the designing and development of the modules, as well as administering the experiments. For this, the

Ministry of Health & Ministry of State Education at Shillong, Meghalaya, Ministry of Social Justice & Empowerment, Orissa, and Ministry of Social Justice & Empowerment, New Delhi, were approached.

The investigation required to get the written scripts of the modules validated by the experts from the field of Deaf Disability as well as Media Experts.

Once the experts validated the scripts, five modules were developed. Further, the modules were validated by experts.

Moreover, the tools constructed by the investigator were validated by the experts in the field of Deaf Disability.

The investigator also had gained written consent from all the participants before the execution of the experiment in all the six states namely: Kerala, North-East, Odisha, Rajasthan, New Delhi, and Madhya Pradesh.

#### **5.8.3.4 Planning for the Final Execution of the Experimental Study**

The experimental treatments were assigned to first and third year graduate students assembled in one class. The target segment was above 16 and pursuing higher education, in place of individuals, due to constraints of administration. Thus, the nature of the study was experimental, taking into consideration heterogeneity with reference to gender and education-level. Permission was taken from the Founder & Principal of Indore Deaf Bilingual Academy (IDBA) for screening and conducting the experiment from Director of Higher Education, for availability of faculty and students, from the Indian Sign Language Cell for the availability of sign language interpreters, as well as from the faculty of FY, SY and TY. The class was secured in advance to conduct the experiment. A time-plan was prepared, and classes were fixed accordingly.

##### **5.8.3.4.1 Experiment Execution**

The experiment was executed in April 2023, incorporating both pre and post-test designs. Therefore, the execution involved three distinct stages:

- Administering the Pre-test.
- Screening of Modules.
- Administering the Post-test.

##### **❖ Administering The Pre-Test**

The pre-test was conducted with the selected Deaf before the actual screening. It included the administration of the first and second section of the research tool.

- An orientation was given regarding the experiment by the investigator, followed by the sign language interpreter.
- Their consent was sought for participation by filling-in a consent form.
- The pre-test form was distributed to all the selected Deaf respondents.
- The consent form and each question with their multiple choices were explained through a sign language interpreter.

❖ **Pre-Test Challenges**

- Participants, due to limited vocabulary, frequently sought clarifications.
- Even with 5ing in the research tool.
- Due to extensive queries, multiple sign language interpreters were required, with six interpreters ultimately assisting 78 participants.

❖ **Screening of the Modules:** Modules were projected in a classroom setting using a projector.

❖ **Administering The Post-Test**

After module screening, participants were immediately given a post-test, which included knowledge and an accessibility test.

The concluding pre-post study was conducted in Indore. Notably, IDBA boasts some of India's most proficient sign language interpreters. Through this experience, the importance of sign language interpreters in enhancing the comprehension of the Deaf became evident to the researcher.

**5.8.3.5 Scoring & Categorization of the Independent Variable:** The following Table describe scoring & categorizing of the selected variables under the study.

**Table 162: Scoring and Categorization of the Independent Variables of the Selected Deaf Respondents from Madhya Pradesh**

VARIABLE	BASIS	CATEGORIES
Age	16-20 Years	Teenagers
	21-25 Years	Young Adults
	26-30 Years	Early Adults
Education	10 <sup>th</sup> Pass	Secondary
	12 <sup>th</sup> Pass	Senior secondary
	Undergraduates	Undergraduates
Gender	Males	Males
	Females	Females
Exposure to Social Media	Below Mean	Low Exposure
	Mean & Above	High Exposure
Exposure to Accessible Media	Below Mean	Low Exposure
	Mean & Above	High Exposure

**5.8.3.6 Scoring & Categorization of the Dependent Variable:** A knowledge test prepared, measured the comprehension-level of the respondents regarding the content of the module screened. There was a total of 14 questions asked. A correct answer scored 1 and an incorrect answer scored 0. Thus, the maximum possible score for this test was 14, and the minimum 0.

**Table 163: Scoring and Categorization of Scores in Knowledge Test for the Selected Deaf Respondents from Madhya Pradesh**

VARIABLES	BASIS	CATEGORIES
Comprehension regarding the Modules on Basics of Entrepreneurship	Below Mean	Low Comprehension
	Mean & Above	High Comprehension

An Accessibility scale prepared, measured the reactions of the respondents regarding the accessibility of the module screened. There was a total of 9 questions asked. A correct answer scored 1, and an incorrect answer 0. Thus, the maximum possible score for this test was 9, and the minimum 0.

**Table 164: Scoring and Categorization of Scores in Accessibility Test for the Selected Deaf Respondents from Madhya Pradesh**

VARIABLES	BASIS	CATEGORIES
Accessibility of the Modules Basics of Entrepreneurship	Below Mean	Low Accessibility
	Mean & Above	High Accessibility

**5.8.3.7 Plan of Statistical Analyses**

**Table 165: Different Statistical Measures Used for Analysis of Data**

PURPOSE	STATISTICAL MEASURES USED
Background information of the respondents	Percentages
Overall Effectiveness of the module on ‘Basics of Entrepreneurship’ in terms of Comprehension amongst the selected Deaf	Wilcoxon Sign Rank Test (Non-parametric Statistics)
Significant differences in the effectiveness of the module on ‘ Basics of Entrepreneurship’ in terms of comprehension amongst the selected Deaf in relation to the following variables: Age Education	Mann-Whitney U Test (Non-parametric Statistics)

Gender Exposure to Social Media Exposure to Accessible Media	
Overall Accessibility of the Designed & Developed Modules on the Basics of Entrepreneurship	Wilcoxon Sign Rank Test (Non-parametric Statistics)
Variable Wise Significant Differences in the Accessibility of the Designed & Developed Modules on the 'Basics of Entrepreneurship'	Mann-Whitney U Test (Non-parametric Statistics)
Accessibility of the Designed & Developed Modules on the 'Basics of Entrepreneurship' with Reference to the Selected Features	Percentage

### 5.9 Findings of the Study:

#### **SECTION I**

#### **5.9.1 The Designed & Developed Module I on “Interest” for the Selected Deaf Respondents from National Institute of Speech & Hearing, Thiruvananthapuram, Kerala.**

##### **5.9.1.1 Profile of the Deaf Respondents from National Institute of Speech & Hearing, Thiruvananthapuram, Kerala.**

- The majority, i.e. 81% of the respondents belonged to the 21-25 age group.
- 100% of the respondents in Kerala were studying for a bachelor's degree (FY-TY).
- There's a significantly higher number of male respondents i.e., 65% compared to female Deaf Respondents i.e., only 34%.
- A little less than the majority i.e, 58% of the participants had low exposure to social media.
- The respondents were almost equally divided in terms of exposure to accessible media, with a slight inclination towards high accessibility i.e., 53%.

##### **5.9.1.2 Overall Effectiveness of the Designed & Developed Module I on “Interest” in terms of Comprehension of the Selected Deaf Respondents from National Institute of Speech & Hearing, Thiruvananthapuram, Kerala.**

A majority i.e. 63% of the Deaf Respondents found the developed Module I to be highly effective. However, 36.2% of respondents from Kerala found the accessible digital media in video-format to be of low effectiveness.

**5.9.1.3 Variable-Wise Effectiveness of the Designed & Developed Module I on “Interest” in terms of Comprehension of the Selected Deaf Respondents from National Institute of Speech & Hearing, Thiruvananthapuram, Kerala.**

- The majority of the students across all variables like age, gender, and social media access, found Accessible Digital Media to be highly effective in comprehending the Basics of Entrepreneurship.
- 100% of the mature students i.e., belonging to the age group of 26-30 years, expressed the module entitled “Interest” as highly effective, followed by 64.3% of the students belonging to the age group of 21-25 years. 58% of the students from the age group of 16-20 years found the module to be highly effective.
- With respect to the variable education, 63.8% of the Deaf students of a bachelor’s degree (FY-TY) found the module highly effective. However, their counterparts, i.e. 36.2% found it to be not so effective.
- Male and female Deaf students were fairly similar in percentage i.e. 64.4% and 62.5%, respectively, who found the module to be highly effective.
- 69% of the respondents with high exposure to social media found the module to be highly effective compared to their counterparts.
- Almost 57% of respondents with high exposure to accessible media reported that the module was highly effective, compared to 71.9% of students with low exposure to Accessible Media found the module highly effective.

**5.9.1.4 Differences in the Variable-Wise Effectiveness of the Designed and Developed Module I on “Interest” in terms of Comprehension of the Selected Deaf Respondents from National Institute of Speech & Hearing, Thiruvananthapuram, Kerala.**

- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module I on “Interest” in relation to the variable **Age**. Therefore, the null hypothesis, stating no significant differences in the effectiveness of the designed & developed module I on "Interest" in terms of comprehension of the selected Deaf Respondents in relation to the variable **Age** was **accepted**.

- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module I on “Interest” in relation to the variable **Education**. Therefore, the null hypothesis, stating no significant differences in the effectiveness of the developed module I on "Interest" in terms of comprehension of the selected Deaf Respondents in relation to the variable **Education** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf concerning the designed & developed module I on “Interest” in relation to the variable **Gender**. Therefore, the null hypothesis, stating no significant differences in the effectiveness of the designed & developed module I on "Interest", in terms of comprehension of the selected Deaf Respondents in relation to the variable **Gender** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module I on “Interest” in relation to the variable **Exposure to Social Media**. Therefore, the null hypothesis, stating no significant differences in the effectiveness of the designed & developed module I on "Interest " in terms of comprehension of the selected Deaf Respondents, in relation to the variable **Exposure to Social Media** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module I on “Interest” in relation to the variable **Exposure to Accessible Media**. Therefore, the null hypothesis stating no significant differences in the effectiveness of the developed module I on "Interest for being an entrepreneur" in terms of comprehension of selected Deaf Respondents in relation to the variable **Exposure to Accessible Media** was **accepted**.

**5.9.1.5 Accessibility of the Designed & Developed Module I on “Interest” for the Selected Deaf Respondents from National Institute of Speech & Hearing, Thiruvananthapuram, Kerala.**

**5.9.1.5.1 Overall accessibility of the Designed & Developed Module I on “Interest” for the Selected Deaf Respondents from National Institute of Speech & Hearing, Thiruvananthapuram, Kerala.**

A significant majority of Deaf students in the BA, FY-TY program i.e. 66.7%, found Accessible Digital Media to be of high accessibility. This indicated its suitability and effectiveness in addressing their learning needs in entrepreneurship basics. Though, one-third i.e. 33.3% of the students experienced difficulties, pointing to existing barriers or unmet needs in accessibility of the digital media developed.

**5.9.1.5.2 Variable-Wise Accessibility of the Designed & Developed Module I on “Interest” for Selected Deaf Respondents from National Institute of Speech & Hearing, Thiruvananthapuram, Kerala.**

- Youngest and oldest age groups reported higher accessibility.
- All participants held a bachelor’s degree, with about one-third reporting low accessibility.
- Females perceived higher accessibility (75%) compared to males (62.2%).
- Students with low exposure to social media perceived higher accessibility (72.5%) compared to those with high exposure (58.6%).
- High accessibility is perceived more by those with high exposure to accessible media (70.3%) compared to those with low media access (62.5%).

**5.9.1.5.3 Differences in the Variable-Wise Accessibility of the Designed & Developed Module I on “Interest” for Selected Deaf Respondents from National Institute of Speech & Hearing, Thiruvananthapuram, Kerala.**

- There was no significant difference in the accessibility of the designed & developed module I on “Interest” of the selected Deaf in relation to the variable **Age**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module I on “Interest” of the selected Deaf in relation to the variable **Age** was **accepted**.
- There was no significant difference in the accessibility of the designed & developed module I on “Interest” of the selected Deaf in relation to the variable **Education**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module I on “Interest” of the selected Deaf in relation to the variable **Education** was **accepted**.
- There was no significant difference in the accessibility of the designed & developed module I on “Interest” of the selected Deaf in relation to the variable **Gender**. Therefore, the null hypothesis stating no significant differences in the

accessibility of the designed & developed module I on “Interest” of the selected Deaf in relation to the variable **Gender** was **accepted**.

- There was no significant difference in the accessibility of the designed & developed module I on “Interest” of the selected Deaf in relation to the variable **Exposure to Social Media**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module I on “Interest” of the selected Deaf in relation to the variable **Exposure to Social Media** was **accepted**.
- There was no significant difference in the accessibility of the Designed & Developed module I on “Interest” of the selected Deaf in relation to the variable **Exposure to Accessible Media**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module I on “Interest” of the selected Deaf in relation to the variable **Exposure to Accessible Media** was **accepted**.

**5.9.1.5.4 Accessibility of the Designed & Developed Module I on “Interest” for selected Deaf Respondents from National Institute of Speech & Hearing, Thiruvananthapuram Kerala with Reference to the Selected Features:**

- 34.6% of the respondents reported low accessibility of content, while 65.4% reported high accessibility.
- Approximately 39.7% of respondents indicated low accessibility of sign language, and 60.3% reported high accessibility.
- A small proportion (15.4%) found visuals to have low accessibility, whereas the majority (84.6%) reported high accessibility.
- Similar to language accessibility, 39.7% of respondents reported low accessibility of text, while 60.3% reported high accessibility.
- All respondents (100.0%) indicated short-time duration, with none reporting long-time duration.
- About 23.1% of respondents reported low accessibility of captions, while the majority (76.9%) reported high accessibility.
- Almost all respondents (98.5%) indicated the presence of accessibility formats, while only a small proportion (1.5%) reported no accessibility format.

**5.9.2 Designed & Developed Module II on “Place/Convenience” the Selected Deaf from the North-East (Dimapur- Nagaland, Imphal-Manipur & Shillong - Meghalaya).**

**5.9.2.1 Profile of the Selected Deaf Respondents from the North-East (Dimapur- Nagaland, Imphal-Manipur & Shillong-Meghalaya).**

- 64.6% belonged to the 16-25 age group and 35.4% belonged to the 26- 35 age group.
- 70.8% of the respondents in NE had completed 10<sup>th</sup> class, 17.7% had finished 12<sup>th</sup> class, and 11.5% had a bachelor’s degree.
- The gender distribution was somewhat balanced, with 41.6% female participants and 58.4% male participants.
- A substantial 83.2% of the respondents reported low exposure to social media, while only 16.8% reported high exposure.
- The respondents were almost equally divided in terms of Exposure to Accessible Media, with a slight majority towards low accessibility i.e., 57%.

**5.9.2.2 Overall Effectiveness of the Designed & Developed Module II on “Place/Convenience” in terms of Comprehension of the Selected Deaf Respondents from the North-East (Dimapur- Nagaland, Imphal-Manipur & Shillong - Meghalaya).**

A majority i.e. 52% of the Deaf Respondents found the developed module II to be highly effective. However, 48% of respondents from North-East found the accessible digital media in video format to be of low effectiveness in comprehension of the basics of entrepreneurship.

**5.9.2.3 Variable-Wise Effectiveness of the Designed & Developed Module II on “Place/Convenience” in terms of Comprehension of the Selected Deaf Respondents from the North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong, Meghalaya).**

- Particularly the 26-30 years group showed high effectiveness at 88.9%, while the 31-35 years group showed significantly lower high effectiveness (32.3%) in comprehension compared to other age groups.

- Those with 12<sup>th</sup> pass education-level reported a higher high effectiveness (65.0%) compared to 8<sup>th</sup> pass (46.7%) and 10<sup>th</sup> Pass (51.4%) education-levels.
- Females have a slightly higher high effectiveness (55.3%) compared to males (50.0%) in comprehension.
- Those with high exposure to social media have substantially higher high effectiveness (73.7%) compared to those with low exposure (47.9%).
- Participants with high accessibility to media show greater high effectiveness (60.4%) in comprehension compared to those with low accessibility (46.2%).

#### **5.9.2.4 Differences in the Variable-Wise Effectiveness of the Designed & Developed Module II on “Place/Convenience” in terms of Comprehension of the Selected Deaf Respondents North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong- Meghalaya).**

- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module II on “**Place/Convenience**” in relation to the variable **Age**. Therefore, the null hypothesis, stating that there will be no significant differences in the effectiveness of the developed module II on “**Place/Convenience**” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Age** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module II on “**Place/Convenience**” in relation to the variable **Education**. Therefore, the null hypothesis, stating that there will be no significant differences in the effectiveness of the developed module II on “**Place/Convenience**” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Education** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module II on “**Place/Convenience**” in relation to the variable **Gender**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the developed module II on “**Place/Convenience**” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Gender** was **accepted**.
- There was a significant difference in the comprehension of the selected Deaf regarding the designed & developed module II on “**Place/Convenience**” in

relation to the variable **Exposure to Social Media**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the developed module II on "**Place/Convenience**" in terms of comprehension of the selected Deaf Respondents in relation to the variable **Exposure to Social Media** was rejected.

- There was a significant difference in the comprehension of the selected Deaf regarding the designed & developed module II on "**Place/Convenience**" in relation to the variable **Exposure to Accessible Media**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the developed module II on "**Place/Convenience**" in terms of comprehension of selected Deaf Respondents in relation to the variable **Exposure to Accessible Media** was rejected.

**5.9.2.5 Accessibility of the Designed & Developed Module II on "Place/Convenience" for the Selected Deaf Respondents from the North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong - Meghalaya).**

**5.9.2.5.1 Overall accessibility of the Designed & Developed Module II on "Place/Convenience" for the Selected Deaf Respondents from the North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong - Meghalaya).**

A significant majority of Deaf in the North East region i.e. 66.4% found Accessible Digital Media to be high in accessibility, indicating its suitability and effectiveness in addressing their learning needs in entrepreneurship basics. Though, one-third i.e. 33.3% of the deaf experienced difficulties, pointing to existing barriers or unmet needs in accessing the digital media developed

**5.9.2.5.2 Variable-Wise Accessibility of the Designed & Developed Module II on "Place/Convenience" for the Selected Deaf Respondents from the North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong-Meghalaya).**

- The 21 to 25 years age group reported the highest high accessibility at 80.0% while the 31 to 35 years age group experienced significantly lower high accessibility (45.2%) compared to other age groups.

- Bachelor's degree holders reported substantially higher accessibility (76.9%) than other education levels.
- Females experienced higher accessibility (78.7%) in comparison to males (57.6%).
- Respondents with high exposure to social media reported overwhelmingly high accessibility (89.5%), compared to those with low exposure (61.7%).
- Participants with high media accessibility experienced considerably higher accessibility (75.0%) to the content, compared to those with low media accessibility (60.0%).

#### **5.9.2.5.3 Differences in the Variable-Wise Accessibility of the Designed & Developed Module II on "Place/Convenience" for Selected Deaf Respondents from the North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong -Meghalaya).**

- There was no significant difference in the accessibility of the designed & developed module II on "**Place/Convenience**" of the selected Deaf in relation to the variable **Age**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module II on "**Place/Convenience**" of the selected Deaf in relation to the variable **Age**, **was accepted**.
- There was no significant difference in the accessibility of the designed & developed module II on "**Place/Convenience**" of the selected Deaf in relation to the variable **Education**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module II on "**Place/Convenience**" of the selected Deaf in relation to the variable **Education** was **accepted**.
- There was a significant difference in the accessibility of the designed & developed module II on "**Place/Convenience**" of the selected Deaf in relation to the variable **Gender**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module II on "**Place/Convenience**" of the selected Deaf in relation to the variable **Gender** was **rejected**.

- There was a significant difference in the accessibility of the designed & developed module II on “**Place/Convenience**” of the selected Deaf in relation to the variable **Exposure to Social Media**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module on “**Place/Convenience**” of the selected Deaf in relation to the **variable Exposure to Social Media** was **rejected**.
- There was no significant difference in the accessibility of the designed & developed module II on “**Place/Convenience**” of the selected Deaf in relation to the variable **Exposure to Accessible Media**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module II on “**Place/Convenience**” of the selected Deaf in relation to the variable **Exposure to Accessible Media** was **accepted**.

**5.9.2.5.4 Accessibility of the Designed & Developed Module II on “Place/Convenience” for Selected Deaf Respondents from the North-East (Dimapur-Nagaland, Imphal-Manipur & Shillong -Meghalaya) with reference to the Selected Features.**

- A small proportion, 37.2% of the respondents reported low accessibility of content, while 62.8% reported high accessibility.
- Approximately 29.5% of respondents indicated low accessibility of sign language, and 70.5% reported high accessibility.
- A small proportion, 32.1% found visuals to have low accessibility, whereas the majority at 67.9% reported high accessibility.
- Similar to language accessibility, 46.2% of respondents reported low accessibility of text, while 53.8% reported high accessibility.
- All respondents (100.0%) indicated short-time duration, with none reporting long-time duration.
- About 44.9% of respondents reported low accessibility of captions, while the majority 55.1% reported high accessibility.
- All respondents (100%) indicated the presence of accessibility formats.

**5.9.3. Designed & Developed Module III on “Finance/ Money: To start your own Business/ Enterprise” for the Selected Deaf Respondents from the Special Industrial Training Institute for PWDs, Jatni, Odisha**

### **5.9.3.1 Profile of the Respondents from the Special Industrial Training Institute for PWDs, Jatni, Odisha.**

#### **Profile of the Deaf Respondents from the Special Industrial Training Institute for PWDs, Jatni, Odisha.**

- The majority of participants were clustered in the 16-25 age range, with both 16-20 and 21-25 years representing 48.1% each, of the total, and only 3.8% were between 26-30 years.
- The most represented educational level is 10th Pass at 53.2%, followed by 2nd Intermediate at 38%, and a bachelor's degree at 7.6%. Very few have an 8th Pass, constituting only 1.3%.
- There was a higher representation of males at 70.9%, compared to females at 29.1%.
- They were almost equally divided between Low Exposure (49.4%) and High Exposure (50.6%) to social media.
- A significant 64.6% of the participants reported Low Accessibility to media, with only 35.4% having High Accessibility.

### **5.9.3.2 Overall Effectiveness of the Designed & Developed Module III on “Finance/ Money: To start your own Business/ Enterprise” for the Selected Deaf Respondents from the Special Industrial Training Institute for PWDs, Jatni, Odisha.**

A majority i.e. 55.7% of the Deaf Respondents found the developed module III to be highly effective. However, 44.3% of respondents from Odisha found the accessible digital media in video format to be of low effectiveness in comprehension of the basics of entrepreneurship.

### **5.9.3.3 Variable-Wise Effectiveness of the Designed & Developed Module III on “Finance/ Money: To start your own Business/ Enterprise” for the Selected Deaf Respondents from the Special Industrial Training Institute for PWDs, Jatni, Odisha.**

- The 16-20 age group showed 47.4% High Effectiveness, while the 21-25 group had 57.9% High Effectiveness.

- The 8th Pass education-level stood out with 100% High Effectiveness, while other education levels showed varying percentages.
- Males had a slightly higher percentage (57.1%) of High Effectiveness compared to females (54.5%).
- High Exposure to social media correlated with 67.5% High Effectiveness, whereas Low Exposure had 56.4%.
- High Accessibility to Media was associated with 67.9% High Effectiveness, while Low Accessibility was at 51.0%.

**5.9.3.4 Differences in the Variable-Wise Effectiveness of the Designed & Developed Module III on “Finance/ Money: To start your own Business/ Enterprise” for the Selected Deaf Respondents Special Industrial Training Institute for PWDs, Jatni, Odisha.**

- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” in relation to the variable **Age**. Therefore, the null hypothesis, stating that there will be no significant differences in the effectiveness of the developed module III on “Finance/ Money: To start your own Business/ Enterprise” in terms of comprehension of selected Deaf Respondents in relation to the variable **Age** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” in relation to the variable **Education**. Therefore, the null hypothesis, stating that there will be no significant differences in the effectiveness of the developed module III on “Finance/ Money: To start your own Business/ Enterprise” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Education** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” in relation to the variable **Gender**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the developed module III on “Finance/ Money: To start your

own Business/ Enterprise” in terms of comprehension of selected Deaf Respondents in relation to the variable **Gender** was **accepted**.

- There was a significant difference in the comprehension of the selected Deaf regarding the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” in relation to the variable **Exposure to Social Media**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the developed module III on “Finance/ Money: To start your own Business/ Enterprise” in terms of comprehension of selected Deaf Respondents in relation to the variable **Exposure to Social Media** was **rejected**.
- There was a significant difference in the comprehension of the selected Deaf regarding the designed & developed module III on “Finance” in relation to the variable **Exposure to Accessible Media**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the developed module III on “Finance/ Money: To start your own Business/ Enterprise” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Exposure to Accessible Media** was **rejected**.

### **5.9.3.5 Accessibility of the Designed & Developed Module III on “Finance/ Money: To start your own Business/ Enterprise” for the Selected Deaf Respondents from the Special Industrial Training Institute for PWDs, Jatni, Odisha.**

#### **5.9.3.5.1 Overall Accessibility of the Designed & Developed Module III on “Finance/ Money: To start your own Business/ Enterprise” for the Selected Deaf Respondents from the Special Industrial Training Institute for PWDs, Jatni, Odisha.**

In Odisha, regarding the feedback on accessible digital media content, 54.4% of participants reported low accessibility, and 45.6% experienced high accessibility, indicative of varied experiences with the content's accessibility.

#### **5.9.3.5.2 Variable Wise Accessibility of the Designed & Developed Module III on “Finance/ Money: To start your own Business/ Enterprise” for the Selected Deaf Respondents from the Special Industrial Training Institute for PWDs, Jatni, Odisha**

The 21 to 25 age group had the highest Low Accessibility feedback at 68.4% and the 16-20 age group followed with 39.5% Low Accessibility.

- The 10th Pass and 12th Pass groups showed significant percentages of Low Accessibility at 57.1% and 53.3%, respectively and 8th Pass respondents expressed 100% Low Accessibility feedback.
- Females responded with 77.3% Low Accessibility feedback compared to males at 67.9%.
- The Low Exposure to social media group had 48.7% Low Accessibility feedback, while the High Exposure to social media group had 60.0%.
- High accessibility was perceived more by those who already had high access to media, the Low Accessibility group had 56.9% Low Accessibility feedback, while the High Accessibility group had 50.0%.

**5.9.3.5.3 Differences in the Variable-Wise Accessibility of the Designed & Developed Module III on “Finance/ Money: To start your own Business/ Enterprise” for the Selected Deaf Respondents from the Special Industrial Training Institute for PWDs, Jatni, Odisha**

- There was no significant difference in the accessibility of the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” of the selected Deaf in relation to the variable **Age**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module III on “Finance” of the selected Deaf in relation to the variable **Age, was accepted**.
- There was no significant difference in the accessibility of the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” of the selected Deaf in relation to the variable **Education**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” of the selected Deaf in relation to the variable **Education was accepted**
- There was a significant difference in the accessibility of the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” of the selected Deaf in relation to the variable **Gender**. Therefore,

the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” of the selected Deaf in relation to the variable **Gender** was **rejected**.

- There was no significant difference in the accessibility of the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” of the selected Deaf in relation to the variable **Exposure to Social Media**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” of the selected Deaf in relation to the variable **Exposure to Social Media** was **accepted**.
- There was no significant difference in the accessibility of the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” of the selected Deaf in relation to the variable **Exposure to Accessible Media**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module III on “Finance/ Money: To start your own Business/ Enterprise” of the selected Deaf in relation to the variable **Exposure to Accessible Media** was **accepted**.

**5.9.3.5.4 Accessibility of the Designed & Developed Module III on “Finance/ Money: To start your own Business/ Enterprise” for the Selected Deaf Respondents from the Special Industrial Training Institute for PWDs, Jatni, Odisha with Reference to the Selected Features:**

- 65.4% of respondents find the content to be highly accessible, while 34.6% find it to have low accessibility.
- 57.7% of respondents perceive high accessibility in sign language, while 42.3% find it to be less accessible.
- Visuals are considered highly accessible by 59.0% of respondents, while 41.0% find them less accessible.
- Similar to language accessibility, text used for caption is perceived as less accessible by 52.6% of respondents, while 47.4% find it highly accessible.

- All respondents (100.0%) indicated short time duration, with none reporting long time duration.
- Captions are considered highly accessible by 59.0% of respondents, while 41.0% find them less accessible.
- All respondents (100%) find the format accessible.

**5.9.4 Designed & Developed Module IV on "Resource Management: How to Manage Resources" for the Selected Deaf Respondents from the Government College for Deaf, Jaipur, Rajasthan**

**5.9.4.1 Profile of the Deaf Respondents from the Government College for Deaf, Jaipur, Rajasthan.**

- A substantial portion (45.2%), of the respondents between 21-25 years old hold Bachelor's Degrees.
- The majority (68.5%) of participants were males.
- Exposure to social media was evenly distributed between low and high.
- A substantial majority (71.2%) report low accessibility to media.
- The majority (76.7%) falls within the 21-25 age group, indicating a focus on young adults in pivotal stages of career planning and higher education.

**5.9.4.2 Overall Effectiveness of the Designed & Developed Module IV on "Resource Management: How to Manage Resources" in terms of Comprehension of the Selected Deaf from the Government College for Deaf, Jaipur, Rajasthan.**

In Rajasthan, the comprehension levels of the participants were almost evenly split, with 52.1% of the participants showcasing high effectiveness in comprehension and 47.9% showcasing low effectiveness.

**5.9.4.3 Variable Wise Effectiveness of the Designed & Developed Module IV on "Resource Management: How to Manage Resources" in terms of Comprehension of the Selected Deaf from the Government College for Deaf, Jaipur, Rajasthan.**

- The age group 26-30 exhibits the highest low effectiveness at 80%, suggesting that older participants may find the material less comprehensible.
- Participants with a Bachelor's degree show the highest low effectiveness in comprehension (60.6%), indicating potential discrepancies in the content's alignment with their educational level or learning needs.

- Males exhibit higher low effectiveness (54%) compared to females, implying possible gender-related preferences or needs in learning materials.
- Those with low exposure to social media have a slightly higher rate of low effectiveness in comprehension, hinting at a potential correlation between digital exposure and comprehension levels.
- Participants with high accessibility demonstrate more balanced comprehension levels compared to those with low accessibility, highlighting the significance of accessibility in comprehension.

**5.9.4.4 Differences in the Effectiveness of the Designed & Developed Module IV on "Resource Management: How to Manage Resources" in terms of Comprehension of the Selected Deaf from the Government College for Deaf, Jaipur, Rajasthan.**

- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module IV on "Resource Management: How to Manage Resources" in relation to the variable **Age**. Therefore, the null hypotheses stating that there will be no significant differences in the effectiveness of the developed module IV on "Resource Management: How to Manage Resources" in terms of comprehension of selected Deaf Respondents in relation to the variable **Age** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module IV on "Resource Management: How to Manage Resources" in relation to the variable **Education**. Therefore, the null hypotheses stating that there will be no significant differences in the effectiveness of the developed module IV on "Resource Management: How to Manage Resources" in terms of comprehension of selected Deaf Respondents in relation to the variable **Education** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module IV on "Resource Management: How to Manage Resources" in relation to the variable **Gender**. Therefore, the null hypotheses stating that there will be no significant differences in the effectiveness of the developed module IV on "Resource Management: How to Manage Resources" in terms of comprehension of selected Deaf Respondents in relation to the variable **Gender** was **accepted**.

- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module IV on "Resource Management: How to Manage Resources" in relation to the variable **Exposure to Social Media**. Therefore, the null hypotheses stating that there will be no significant differences in the effectiveness of the developed module IV on "Resource Management: How to Manage Resources" in terms of comprehension of selected Deaf Respondents in relation to the variable **Exposure to Social Media** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module IV on "Resource Management: How to Manage Resources" in relation to the variable **Exposure to Accessible Media**. Therefore, the null hypotheses stating that there will be no significant differences in the effectiveness of the developed module IV on "Resource Management: How to Manage Resources" in terms of comprehension of selected Deaf Respondents in relation to the variable **Exposure to Accessible Media** was **accepted**.

#### **5.9.4.5 Accessibility of the Designed & Developed Module IV on "Resource Management: How to Manage Resources" for the Selected Deaf Respondents from the Government College for Deaf, Jaipur, Rajasthan**

##### **5.9.4.5.1 Overall Accessibility of the Designed & Developed Module IV on "Resource Management: How to Manage Resources" for the Selected Deaf Respondents from the Government College for Deaf, Jaipur, Rajasthan**

In Rajasthan, the feedback on accessibility to the provided digital media is balanced, with 52.1% reporting high accessibility and 47.9% reporting low accessibility. This near-corresponding distribution between high and low accessibility suggests that while accessible digital media is available to approximately half of the participants, there is an almost equal proportion facing difficulties in accessing the content.

##### **5.9.4.5.2 Variable Wise Accessibility of the Designed & Developed Module IV on "Resource Management: How to Manage Resources" for the Selected Deaf Respondents from the Government College for Deaf, Jaipur, Rajasthan**

The table is divided into four age groups: 16-20 years, 21-25 years, 26-30 years, and 31-35 years, in the age group of 16-20 years, 33.3% reported low accessibility, while 66.7% reported high accessibility.

- Education levels include 8th pass, 10th pass, 12th pass, 2nd intermediate, and Bachelor's degree. Similar to age range, the counts and percentages represent feedback responses categorized by low and high accessibility.
- The table separates accessibility based on gender, with counts and percentages for female and male respondents. 8.7% of females reported low accessibility, while 91.3% reported high accessibility.
- Social Media Exposure: Divided into low exposure and high exposure, this section shows counts and percentages of feedback responses. 29.7% of respondents with low social media exposure reported low accessibility.
- Media Accessibility: For the low accessibility category, 25.0% reported low accessibility, while 75.0% reported high accessibility.

**5.9.4.5.3 Differences in the Variable Wise Accessibility of the Designed & Developed Module IV on "Resource Management: How to Manage Resources" for the Selected Deaf Respondents from the Government College for Deaf, Jaipur, Rajasthan.**

- There was no significant difference in the accessibility of the designed & developed module IV on "Resource Management: How to Manage Resources" for selected deaf. in relation to the variable **Age**. Therefore, the null hypotheses stating that there will be significant differences in the accessibility of the designed & developed module IV on "Resource Management: How to Manage Resources" of the selected Deaf in relation to the variable **Age** was **accepted**.
- There was no significant difference in the accessibility of the designed & developed module IV on "Resource Management: How to Manage Resources" for selected deaf. in relation to the variable education. Therefore, the null hypotheses stating that there will be significant differences in the accessibility of the designed & developed module IV on "Resource Management: How to Manage Resources" of the selected Deaf in relation to the variable **Education** was **accepted**.

- There was no significant difference in the accessibility of the designed & developed module IV on "Resource Management: How to Manage Resources" for selected deaf in relation to the variable **Gender**. Therefore, the null hypotheses stating that there will be significant differences in the accessibility of the designed & developed module IV on "Resource Management: How to Manage Resources" of the selected Deaf in relation to the variable **Gender** was **accepted**.
- There was no significant difference in the accessibility of the designed & developed module IV on "Resource Management: How to Manage Resources" for selected deaf in relation to the variable **Exposure to Social Media**. Therefore, the null hypotheses stating that there will be significant differences in the accessibility of the designed & developed module IV on "Resource Management: How to Manage Resources" of the selected Deaf in relation to the variable **Exposure to Social Media**, was **accepted**.
- There was no significant difference in the accessibility of the designed & developed module IV on "Resource Management: How to Manage Resources" for selected deaf in relation to the variable **Exposure to Accessible Media**. Therefore, the null hypotheses stating that there will be significant differences in the accessibility of the designed & developed module IV on "Resource Management: How to Manage Resources" of the selected Deaf in relation to the variable **Exposure to Accessible Media** was **accepted**.

**5.9.4.5.4 Accessibility of the Designed & Developed Module IV on "Resource Management: How to Manage Resources" for the Selected Deaf Respondents from the Government College for Deaf, Jaipur, Rajasthan with Reference to the Selected Features:**

- Content Accessibility: A somewhat balanced view emerged, with 43.6% of participants expressing low accessibility to content, while 56.4% found it highly accessible.
- Sign Language Accessibility: While the majority (63.2%) perceived sign language in the content as highly accessible, 36.8% faced challenges, indicating a significant proportion with difficulties.

- **Visual Accessibility:** Participants reported challenges in visual accessibility, with 38.5% finding it low and 61.5% high, suggesting a substantial portion encountering issues.
- **Text Accessibility:** A considerable challenge exists in text accessibility, as 60.3% reported low accessibility, while only 39.7% found text highly accessible.
- **Time Duration of Modules:** Interestingly, all participants (100.0%) favoured short module durations unanimously, indicating a strong preference for concise content delivery.
- **Caption Accessibility:** The perception of caption accessibility was relatively balanced, with 51.3% reporting low accessibility and 48.7% finding captions highly accessible.
- **Accessibility of the Format:** All participants (100.0%) reported the overall format as accessible, showing a positive perception and no reported inaccessibility.

### **5.9.5 Designed & Developed Module V on “Concept of Marketing” for the Selected Deaf Respondents from the Institute of Sign Language Research & Training Centre (ISLRTC), New Delhi**

#### **5.9.5.1 Profile of the Deaf Respondents from the Institute of Sign Language Research & Training Centre (ISLRTC), New Delhi.**

- In Delhi, the majority of participants were in the 21-25 years age group, representing 63% of the total.
- The majority of participants had intermediate education-level, making up nearly 70% of participants, while the remaining 30% had a bachelor’s degree.
- There was a relatively balanced gender distribution with females approximately 47% and males 53% of the total.
- Considering social media access, 64.1% of participants had high exposure, and 35.9% had low exposure.
- Regarding media access with an almost even split, 52.2% reported low accessibility and 47.8% reported high accessibility.

#### **5.9.5.2. Overall Effectiveness of the Designed & Developed Module V on “Concept of Marketing” in terms of Comprehension of the Selected**

**Deaf Respondents from the Institute of Sign Language Research & Training Centre (ISLRTC), New Delhi.**

In Delhi the participant-group data revealed a nearly even distribution in comprehension levels, where 47.8% demonstrated Low Effectiveness and 52.2% reflected High Effectiveness.

**5.9.5.3 Variable-Wise Effectiveness of the Designed & Developed Module V on “Concept of Marketing” in terms of Comprehension of the Selected Deaf Respondents from the Institute of Sign Language Research & Training Centre (ISLRTC), New Delhi.**

- The 26-30 years age group exhibited the highest Low Effectiveness at 61.5%, while the 21-25 years group demonstrated a more balanced comprehension level.
- There was a relatively even distribution of High and Low Effectiveness comprehension across education levels. Both bachelor’s degree holders and those with a 2nd Intermediate-level displayed almost equal proportions in both comprehension categories.
- Males demonstrated a slightly higher Low Effectiveness at 51.0% compared to Females at 44.2%.
- Participants with High Exposure to Social Media displayed higher Low Effectiveness in comprehension at 54.2%.
- Respondents with High Accessibility to Media exhibited higher levels of Low Effectiveness in comprehension at 56.8%.

**5.9.5.4 Differences in the Variable-Wise Effectiveness of the Designed & Developed Module V on “Concept of Marketing” in terms of Comprehension of the Selected Deaf Respondents from the Institute of Sign Language Research & Training Centre (ISLRTC), New Delhi.**

- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module V on “Concept of Marketing” in relation to the variable **Age**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the designed & developed module V on "Marketing-for being an entrepreneur", in terms of comprehension of the selected Deaf Respondents in relation to the variable **Age** was **accepted**.

- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module V on “Concept of Marketing” in relation to the variable **Education**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the designed & developed module V on "Marketing-for being an entrepreneur", in terms of comprehension of the selected Deaf Respondents in relation to the variable **Education** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module V on “Marketing” in relation to the variable **Gender**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the designed & developed module V on “Concept of Marketing” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Gender** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module V on “Concept of Marketing” in relation to the variable **Exposure to Social Media**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the designed & developed module V on “Concept of Marketing” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Exposure to Social Media** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed module V on “Concept of Marketing” in relation to the variable **Exposure to Accessible Media**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the designed & developed module V on “Concept of Marketing” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Exposure to Accessible Media** was **accepted**.

**5.9.5.5 Accessibility of the Designed & Developed Module V on “Concept of Marketing” in terms of Comprehension of the Selected Deaf Respondents from the Institute of Sign Language Research & Training Centre (ISLRTC), New Delhi.**

**5.9.5.5.1 Overall Accessibility of the Designed & Developed Module V on “Concept of Marketing” in terms of Comprehension of the Selected**

**Deaf Respondents from the Institute of Sign Language Research & Training Centre (ISLRTC), New Delhi.**

In Delhi, 40.2% of the participants experienced Low Accessibility while 59.8% found High Accessibility. The majority of participants in Delhi found the entrepreneurship content to be highly accessible, however, a significant minority faced challenges in accessibility.

**5.9.5.5.2 Variable-Wise Accessibility of the Designed & Developed Module V on “Concept of Marketing” in terms of Comprehension of the Selected Deaf Respondents from the Institute of Sign Language Research & Training Centre (ISLRTC), New Delhi.**

- Respondents aged 16-20 years showed a split preference, with 37.5% indicating Low Accessibility and 62.5% favouring High Accessibility. Similarly, the 21-25 age group demonstrated a slight majority with 56.9% in favour of High Accessibility. Notably, respondents aged 26-30 years inclined towards High Accessibility, constituting 65.4% of the group.
- The majority of respondents with an intermediate education background (59.4%) expressed a preference for High Accessibility. A similar trend was observed amongst those with a bachelor’s degree, where 60.7% favoured High Accessibility.
- Females exhibited a higher inclination towards High Accessibility (55.9%) compared to males (63.3%), who showed a preference for Low Accessibility at 36.7%. The low exposure to social media group had 48.7% Low Accessibility feedback, while the High Exposure to social media group had 60.0%.
- Respondents with low exposure to social media were highly inclined towards Low Accessibility (36.4%), while those with high exposure to social media leaned towards high accessibility (57.6%).
- 35.4% of respondents with Low Accessibility reported a preference for Low Accessibility, and 45.5% of those with High Accessibility indicated a preference for High Accessibility.

**5.9.5.5.3 Differences in the Variable-Wise Accessibility of the Designed & Developed Module V on “Concept of Marketing” in terms of**

**Comprehension of the Selected Deaf Respondents from the Institute of Sign Language Research & Training Centre (ISLRTC), New Delhi.**

- There was no significant difference in the accessibility of the designed & developed module V on “Concept of Marketing” of the selected Deaf in relation to the variable **Age**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module V on “Concept of Marketing” of the selected Deaf in relation to the variable **Age** was **accepted**.
- There was no significant difference in the accessibility of the designed & developed module V on “Marketing” of the selected Deaf in relation to the variable Education. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module V on “Concept of Marketing” of the selected Deaf in relation to the variable **Education** was **accepted**.
- There was no significant difference in the accessibility of the designed & developed module V on “Marketing” of the selected Deaf in relation to the variable **Gender**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module V on “Concept of Marketing” of the selected Deaf in relation to the variable **Gender** was **accepted**.
- There was no significant difference in the accessibility of the designed & developed module V on “Concept of Marketing” of the selected Deaf in relation to the variable **Exposure to Social Media**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module V on “Concept of Marketing” of the selected Deaf in relation to the variable **Exposure to Social Media** was **accepted**.
- There was no significant difference in the accessibility of the designed & developed module V on “Concept of Marketing” of the selected Deaf in relation to the variable **Exposure to Accessible Media**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed module V on “Concept of

Marketing” of the selected Deaf in relation to the **variable Exposure to Accessible Media** was accepted.

**5.9.5.5.4 Accessibility of the Designed & Developed Module V on “Concept of Marketing” in terms of Comprehension of the Selected Deaf Respondents from the Institute of Sign Language Research & Training Centre (ISLRTC), New Delhi with Reference to the Selected Features:**

- In terms of content accessibility, the majority, constituting 66.7%, reported High Accessibility, while 33.3% experienced Low Accessibility.
- Sign language accessibility showed a notable positive trend, with 79.5% reporting High Accessibility, compared to 20.5% reporting Low Accessibility.
- Visual accessibility demonstrated a similar pattern, with 61.5% reporting High Accessibility and 38.5% reporting Low Accessibility.
- For text accessibility, 55.1% reported High Accessibility, while 44.9% reported Low Accessibility.
- All respondents (100.0%) indicated short-time duration, with none reporting long-time duration.
- Caption accessibility saw 60.3% reporting High Accessibility, and 39.7% reporting Low Accessibility.
- The positive feedback on the overall format's accessibility (100.0%) was a success.

**5.9.6 Designed & Developed Modules on “Basics of Entrepreneurship” for the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh**

**5.9.6.1 Profile of the Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh**

- The majority of participants were in the age group of 21-25 years (70.5%).
- The gender distribution was relatively balanced with slightly more males at 55.1% than females at 44.9%.
- Most participants had completed Class 12<sup>th</sup> (51.3%) or were Under Graduates (47.4%).
- The participants were predominantly single (96.2%) and were students (100%).

- English and ISL (Indian Sign Language) were the known languages among the Deaf participants.
- Access to Facebook and WhatsApp was common among participants.
- Majority of the participants had access to MBM (96.1%) and ISH News (90.9%) as accessible media sources.

#### **5.9.6.2 Overall Effectiveness of the Designed & Developed Modules on “Basics of Entrepreneurship” in terms of Comprehension of the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh**

In Indore 44.9% of the participants found the accessible digital media in video-format on the basics of entrepreneurship for the deaf to be of low effectiveness, whereas 55.1% of the participants perceived it as highly effective.

#### **5.9.6.3 Variable-wise Effectiveness of the Designed & Developed Modules on “Basics of Entrepreneurship” in terms of Comprehension of the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh**

- For age groups 16-20 and 21-25 years, the effectiveness is nearly equally perceived, with a 50-50 or near 50-50 split. However, the 26-30 years age group perceived it as more highly effective (68.4%).
- Both genders perceived more high effectiveness, but the split is relatively even, with males at 46.5% low effectiveness and females at 42.9% low effectiveness.
- Those with an undergraduate education perceived the programme as more effective (59.5%) compared to those with a Class 12<sup>th</sup> education (51.2%).
- Those with high social media exposure perceived the program as more effective (58.3%) compared to those with low exposure (50%).
- Those with high accessibility to media perceived the program as more effective (65.1%) compared to those with low accessibility (42.9%).

#### **5.9.6.4 Differences in the Variable-Wise Effectiveness of the Designed & Developed Modules on “Basics of Entrepreneurship” in terms of**

**Comprehension of the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh**

- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed modules on “Basics of Entrepreneurship” in relation to the variable **Age** between pre-test and post-test scores. Therefore, the null hypothesis, stating that there will be no significant differences in the effectiveness of the designed & developed modules on “Basics of Entrepreneurship” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Age** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding designed & developed modules on “Basics of Entrepreneurship” in relation to the variable **Education**. Therefore, the null hypothesis, stating that there will be no significant differences in the effectiveness of the designed & developed modules on “Basics of Entrepreneurship” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Education** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed modules on “Basics of Entrepreneurship” in relation to the variable **Gender**. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the designed & developed modules on “Basics of Entrepreneurship” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Gender** was **accepted**.
- There was no significant difference in the comprehension of the selected Deaf regarding the designed & developed modules on “Basics of Entrepreneurship” in relation to the variable **Exposure to Social Media** between pre-test and post-test scores. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the designed & developed modules on “Basics of Entrepreneurship” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Exposure to Social Media** was **accepted**.
- There was a significant difference in the comprehension of the selected Deaf regarding the designed & developed modules on “Basics of

Entrepreneurship” in relation to the variable **Exposure to Accessible Media** between pre-test and post-test scores. Therefore, the null hypothesis stating that there will be no significant differences in the effectiveness of the designed & developed modules on “Basics of Entrepreneurship” in terms of comprehension of the selected Deaf Respondents in relation to the variable **Exposure to Accessible Media** was rejected.

#### **5.9.6.5 Accessibility Designed & Developed Modules on “Basics of Entrepreneurship” for the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh**

##### **5.9.6.5.1 Overall Accessibility Designed & Developed Modules on “Basics of Entrepreneurship” for the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh**

In Indore, the overall accessibility of all modules displayed that only a small fraction of the participants, 10.3%, found the modules to have low accessibility, while nearly half, 48.7%, rated them as having medium accessibility, and 41% rated high accessibility.

##### **5.9.6.5.2 Variable-Wise Accessibility of the Designed & Developed Modules on “Basics of Entrepreneurship” for the selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh**

- The age category from 26-30 years predominantly came under the high accessibility range at 73.7%, while the 16-20 years age group has a significant proportion in the medium accessibility category at 52.0%.
- Undergraduates showcased a relatively even distribution, while those with a high-school education leaned towards medium accessibility at 56.1%.
- Male participants predominantly fell within the medium accessibility range at 55.9%, whereas females showed a more balanced distribution across accessibility levels.
- The analysis of social media exposure reveals that participants with high exposure levels exhibit a split between medium (52.1%) and high (39.6%) accessibility.

- Similarly, in access media, the high accessibility group consists largely of individuals with high exposure, with 48.8% falling into the medium accessibility range.

#### 5.9.6.5.3 Differences in the Variable-Wise Accessibility Designed & Developed Modules on “Basics of Entrepreneurship” for the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh

- There was a significant difference in the accessibility of the designed & developed modules on “Basics of Entrepreneurship” of the selected Deaf in relation to the variable **Age**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed modules on “Basics of Entrepreneurship” of the selected Deaf in relation to the variable **Age** was **rejected**.
- There was no significant difference in the accessibility of the designed & developed modules on “Basics of Entrepreneurship” of the selected Deaf in relation to the variable **Education**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed modules on “Basics of Entrepreneurship” of the selected Deaf in relation to the variable **Education** was **accepted**.
- There was no significant difference in the accessibility of the designed & developed modules on “Basics of Entrepreneurship” of the selected Deaf in relation to the variable **Gender**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed modules on “Basics of Entrepreneurship” of the selected Deaf in relation to the variable **Gender** was **accepted**.
- There was no significant difference in the accessibility of the designed & developed modules on “Basics of Entrepreneurship” of the selected Deaf in relation to the variable **Exposure to Social Media**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed modules on “Basics of Entrepreneurship” of the selected Deaf in relation to the variable **Exposure to Social Media** was **accepted**.

- There was no significant difference in the accessibility of the designed & developed modules on “Basics of Entrepreneurship” of the selected Deaf in relation to the variable **Exposure to accessible Media**. Therefore, the null hypothesis stating that there will be no significant differences in the accessibility of the designed & developed modules on “Basics of Entrepreneurship” of the selected Deaf in relation to the variable **Exposure to accessible Media** was **accepted**.

**5.9.6.6 Accessibility of the Designed & Developed Module I on “Interest” for the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh with Reference to the Selected Features:**

- In terms of content accessibility, 65.4% of respondents found the content to be highly accessible, while 34.6% reported low accessibility.
- Sign language accessibility showed a notable positive trend, high accessibility was reported by 60.3%, while 39.7% reported low accessibility of sign language.
- Visual accessibility demonstrated a similar pattern, a high percentage (84.6%) reported the visuals as highly accessible, compared to 15.4% reporting low accessibility.
- For text accessibility similar to sign language, 60.3% reported high accessibility of text, while 39.7% reported low accessibility.
- All respondents (100.0%) indicated short-time duration, with none reporting long-time duration.
- High accessibility of captions was reported by 76.9%, with 23.1% finding it low.
- The positive feedback on the overall format's accessibility received an overwhelming 98.5% noting the accessibility format satisfactory, with only 1.5% expressing dissatisfaction.

**5.9.6.7 Accessibility of the Designed & Developed Module II on “Place/Convenience” for the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh with Reference to the Selected Features:**

- In terms of content accessibility, High Accessibility of content was reported by 62.8% of participants, while 37.2% found the content to have Low Accessibility.
- Sign language accessibility showed a notable positive trend, with 70.5% of participants reporting High Accessibility of Sign Language, and 29.5% indicating Low Accessibility.
- Visual accessibility was demonstrated by 67.9% reporting High Accessibility of Visuals, while 32.1% reported Low Accessibility.
- The accessibility of text was almost evenly split, with 53.8% reporting High Accessibility and 46.2% reporting Low Accessibility.
- All respondents (100.0%) indicated short-time duration, with none reporting long-time duration.
- Caption accessibility saw high accessibility of captions reported by 55.1%, compared with 44.9% reporting Low Accessibility of Captions.
- The positive feedback on the overall format's accessibility (100.0%) was a success.

**5.9.6.8 Accessibility of the Designed & Developed Module III on “Finance/ Money: To Start your own Business/ Enterprise” for the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh with Reference to the Selected Features:**

- In terms of content accessibility, 65.4% reported High Accessibility, while 34.6% experienced Low Accessibility to content.
- Sign language accessibility displayed a positive trend, with 57.7% of participants reporting High Accessibility of Sign Language, and 42.3% reporting Low Accessibility.
- 59.0% reported High Accessibility of Visuals, while 41.0% reported Low Accessibility.
- The accessibility of text was almost evenly split with Low Accessibility (52.6%) when compared to those who found it to have High Accessibility (47.4%).
- All respondents (100.0%) indicated short-time duration, with none reporting long-time duration.

- High Accessibility of captions was reported by 59.0% with 41.0% reporting it Low Accessibility.
- The positive feedback on the overall format's accessibility (100.0%) was a success.

**5.9.6.9 Accessibility of the Designed & Developed Module IV on “Resource Management/ How to Manage Resource” for the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh with Reference to the Selected Features:**

- In terms of content accessibility, 56.4% of participants reported High Accessibility of Content, while 43.6% found Low Accessibility.
- Sign language accessibility showed a notable positive trend, High Accessibility of Sign Language was reported by 63.2% of the participants, with 36.8% reporting Low Accessibility.
- Visual accessibility demonstrated 61.5% reporting High Accessibility of Visuals, while 38.5% reported Low Accessibility.
- The accessibility of text with most participants (60.3%) reported Low Accessibility of Text, indicating potential issues in text readability or understanding.
- All respondents (100.0%) indicated short-time duration, with none reporting long-time duration.
- Accessibility of captions was almost equally divided, with 51.3% reporting Low Accessibility and 48.7% reporting High Accessibility.
- The positive feedback on the overall format's accessibility (100.0%) was a success.

**5.9.6.10 Accessibility of the Designed & Developed Module V on “Concept of Marketing” for the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh with Reference to the Selected Features:**

- In terms of content accessibility, a majority (66.7%) of participants reported High Accessibility of Content, with 33.3% experiencing Low Accessibility.
- Sign language accessibility showed a notable positive trend: a significant majority, 79.5%, reported High Accessibility of Sign Language, suggesting effective incorporation of sign language in the module.

- Visual accessibility demonstrated 61.5% finding High Accessibility of Visuals, while 38.5% found Low Accessibility.
- The participants were nearly split on the accessibility of text, with 55.1% finding High Accessibility and 44.9% finding Low Accessibility.
- All respondents (100.0%) indicated short-time duration, with none reporting long-time duration.
- 60.3% found High Accessibility of Caption, whereas 39.7% reported Low Accessibility.
- The positive feedback on the overall format's accessibility (100.0%) was a success.

**5.9.6.11 Module-wise Comparison of Features of the Designed & Developed Modules on “Basics of Entrepreneurship” in terms of Comprehension of the Selected Deaf Respondents from the Indore Deaf Bilingual Academy, Indore, Madhya Pradesh**

- **Content Accessibility:** Module-4 had the highest low accessibility (43.6%), while Module-5 had the highest high accessibility (66.7%).
- **Language Accessibility (Sign Language):** Module-5 exhibited the most significant high accessibility of sign language (79.5%), while Module-1 had the highest low accessibility (39.7%).
- **Visual Accessibility:** Module-3 indicated the highest low accessibility of visuals (41.0%), while Module-1 indicated the top-most high accessibility (84.6%).
- **Text Accessibility:** Module-4 had the most considerable low accessibility in text (60.3%), and Module-1 the highest high accessibility (60.3%).
- **Time Duration:** All modules were considered to have a short-time duration (100%), with no instances of long-time durations.
- **Caption Accessibility:** Module-4 had the highest low accessibility of captions (51.3%), while Module-1 had the greatest high accessibility (76.9%).

**Format Accessibility:** All modules were largely accessible concerning format

**5.10 Conclusion of the Study**

The research conducted on the design and development of accessible digital media, focused on teaching the basics of entrepreneurship to the deaf community, has yielded

promising results. The study demonstrated that the video modules developed were highly effective and accessible for deaf individuals across different states in India. These findings represent a crucial advancement in promoting inclusive education and empowering deaf learners in the entrepreneurial field. The success of this project highlights the significance of customizing educational content to address the unique needs of diverse learners, particularly those with hearing impairments. The use of accessible digital media, especially video formats, proved to be an efficient way to deliver entrepreneurial knowledge to the deaf community. This success shows the potential for using technology to bridge educational gaps and create more inclusive learning opportunities.

The research offered valuable insights into the challenges and opportunities presented by digital learning resources for the deaf community. It examined the accessibility and effectiveness of video-based digital media in teaching entrepreneurship, and this conclusion summarizes the key findings, discussing their implications for educational practices and policies. It also provides recommendations for future content development and research.

### **5.10.1 Field Observations from the Research**

At the National Institute of Speech & Hearing (NISH) in Thiruvananthapuram, Kerala, even though higher education in Indian Sign Language (ISL) is provided, many students from across India enrolled there are not fluent in ISL. This gap in proficiency often stems from their upbringing. If a student is born to deaf parents who are well-versed in sign language, the student is more likely to be proficient. NISH prepares its students for jobs in IT and even supports them in setting up startups. However, despite workshops on entrepreneurship, students aren't inclined toward becoming entrepreneurs. One reason for this reluctance could be that many deaf individuals grow up in a protected environment where family needs are prioritized, and any extra income they earn is often used to meet household expenses, sometimes at the cost of their dignity.

The study suggests that to maintain the dignity of the deaf community, entrepreneurship modules should be designed in easy-to-understand sign language. It also proposes a flexible approach to knowledge assessment. For example, if a deaf

individual successfully runs a business for six months, they could be awarded a diploma in business management. If they sustain it for a year, they could earn a postgraduate diploma, and after two years, a postgraduate degree in business management. In short, education should be provided as needed, in a way that respects their dignity.

In the Northeast, the study found that higher education, like the programs offered at NISH, is not available. In Shillong, Meghalaya, there is a lack of awareness about government schemes and policies for people with disabilities. Even if someone applies for these schemes, they often need to follow up persistently to benefit. In Shillong, many deaf individuals work as assistants or helpers in small businesses, such as bakeries, restaurants, and small manufacturing units.

In Odisha, while there is infrastructure in place to support education and vocational training for the disabled, the execution is inefficient. For example, the state's Special ITI for PwDs lacks sign language interpreters, and even residential schools face similar issues. There is potential in the system, but it is not being fully utilized.

In Rajasthan, many deaf individuals are successfully managing their own businesses, which aligns well with the study's objective of developing entrepreneurship modules. At the Indian Sign Language Research and Training Center (ISLRTC) in Delhi, deaf individuals are well-versed in social media and the internet. The study suggests that they should also be educated about social media marketing to expand their entrepreneurial skills.

In Indore, at the Deaf Bilingual Academy (IDBA), which offers a graduation degree taught in Indian Sign Language, the final phase of the study was conducted. It was observed that Indian Sign Language proficiency can be improved through story-based modules, such as those on the basics of entrepreneurship. This final experiment with a pre- and post-test among selected deaf individuals highlighted the need for personalized education based on the specific requirements of one's disability. For example, school and college exams for the deaf should be conducted in sign language, and practical learning should be emphasized to develop their skills.

### **5. 10.2 Key Findings of the Study**

- **Effectiveness of Digital Media Modules:** The study evaluated various digital media modules designed to impart entrepreneurial knowledge to deaf individuals. The findings revealed that while the modules were generally effective, comprehension varied according to demographic factors such as gender and exposure to social media. For example, the module on "Finance" showed a notable difference in accessibility based on gender, suggesting that male and female users may interact with and understand the content differently. This indicates that content creators need to consider gender-specific preferences and learning styles when designing educational materials. However, the study found no significant differences in comprehension related to social media exposure, challenging the assumption that greater engagement with social media improves learning outcomes.
- **Demographic Insights:** The demographic profile of participants was predominantly young adults, with the majority being aged 21-25 and holding bachelor's degrees. This raises questions about the diversity of age groups and educational backgrounds in future studies. The higher number of male respondents (65%) compared to female respondents (34%) suggests a gender imbalance that should be addressed in both research and content development. This disparity may reflect wider social trends in education and employment among deaf individuals, emphasizing the need to engage more female learners in entrepreneurship education.
- **Social Media Exposure:** A significant portion of participants (58%) reported low exposure to social media. This finding indicates that many deaf individuals are not fully engaged with digital platforms that could enhance their learning experiences. It highlights the need to develop educational content that is both accessible and engaging for those with limited social media exposure and emphasizes the importance of initiatives to improve digital literacy among the deaf community.
- **Accessibility Challenges:** Participants reported various challenges related to the accessibility of digital content, including insufficient captioning, unclear sign language interpretation, and difficulties with digital interfaces. These issues emphasize the need to prioritize accessibility during the design phase of content creation. While many participants rated the accessibility of the digital

media as medium to high, a notable percentage (10.3%) still experienced low accessibility, indicating that further efforts are needed to ensure all deaf individuals can engage with digital learning resources.

- **User-Centered Approach:** A key theme of the study was the importance of a user-centered approach to content development. Incorporating feedback from users can help ensure that the materials meet the actual needs and preferences of the deaf community. This approach is consistent with the principles of Universal Design for Learning (UDL), which advocates for multiple means of engagement and representation to accommodate diverse learners. By adopting these principles, educators and content creators can create more inclusive learning environments for deaf individuals.

### 5.11 Implications for Educational Practice

This research has several implications for educational practices, especially regarding the teaching of entrepreneurship to the deaf community:

**Policy Development:** Policymakers should support the creation of inclusive education policies that mandate the development of accessible digital content. This includes funding for research and the development of resources that cater specifically to the needs of the deaf community. Policies should also encourage collaboration between educational institutions, content creators, and advocacy organizations to ensure educational materials are designed with accessibility in mind.

**Resource Allocation:** Schools and universities should allocate resources to the development of accessible digital media and provide training for educators on using these resources effectively. This investment can improve learning outcomes for deaf students. Institutions should also offer professional development opportunities to enhance educators' understanding of accessibility issues and effective teaching strategies for deaf learners.

**Integration of Accessible Content:** Schools and universities should integrate accessible digital media into their curricula to ensure all students, including those with hearing impairments, have equal access to educational materials. This integration can help create a more inclusive learning environment and promote educational equity.

## 5.12 Recommendations for Future Content Development

- **Customized Educational Content:** Future educational materials should be designed with consideration for different demographic groups. Incorporating relatable examples and case studies that reflect diverse experiences can improve engagement and comprehension. Content should also be adaptable to different learning styles, allowing users to choose the format that best meets their needs.
- **Enhanced Accessibility Features:** Future content should include standardized practices for captioning and sign language interpretation. Additional features like adjustable text sizes, color contrasts, and alternative formats (e.g., audio descriptions) should be integrated to meet various accessibility needs.
- **Continuous Feedback:** Establishing a process for collecting and integrating user feedback is essential for refining educational materials. Regular surveys or focus groups with deaf individuals can provide insights into their experiences with digital content, helping to improve the effectiveness of the materials.
- **Digital Literacy Programs:** To address the low levels of social media exposure and digital engagement, digital literacy programs tailored to the deaf community should be implemented. These programs should focus on teaching essential skills for navigating digital platforms and understanding online content.
- **Collaborative Efforts:** Collaboration between educators, content creators, policymakers, and the deaf community is critical for developing strategies that promote inclusivity and accessibility in digital education. Partnerships with organizations specializing in deaf education can provide valuable insights and resources for creating effective content.

## 5.13 Summary of the Study

This study has provided important insights into the effectiveness of accessible digital media for teaching entrepreneurship to the deaf community. The findings highlight areas for improvement, particularly in terms of accessibility and inclusivity. By focusing on user feedback, addressing diverse learning needs, and collaborating with

stakeholders, it is possible to create a more equitable and effective learning environment for deaf learners. The knowledge gained from this research contributes to the broader discourse on digital accessibility and provides practical guidance for developing educational resources that empower deaf individuals to succeed in their entrepreneurial endeavors.