# **IMPACT ASSESSMENT REPORT**

**SIMPLY READING CATAPULT PROJECT BY DAISY CONSORTIUM UNDER SEEING IS BELIEVING INITIATIVE OF STANDARD CHARTERED BANK**

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# INTRODUCTION

Persons with blindness are unable to read print. Getting excluded from information available in print format often results in exclusion from education, employment, activities of daily living and many other aspects integral to independent living.

To ensure that this does not happen and people with vision impairment[[1]](#footnote-1) are able to access information through alternate, accessible means and modes, text in Accessible Digital format is a way forward.

*Both the UN CRPD and The Rights of Persons with Disabilities Act, 2016 [The RPWD Act, 2016] recognize the right of persons with disabilities to receive information in accessible formats.*

*Section 2 (f) of the RPWD Act, 2016 states: “communication” includes means and formats of communication, languages, display of text, Braille, tactile communication, signs, large print, accessible multimedia, written, audio, video, visual displays, sign language, plain-language, human-reader, augmentative and alternative modes and accessible information and communication technology;*

*Section 2 (n) of the RPWD Act, 2016 states: “information and communication technology” includes all services and innovations relating to information and communication, including telecom services, web based services, electronic and print services, digital and virtual services;*

Braille opened doors of education for persons with blindness in the 19th century and continues to be the base script that allows persons to read and write in any language. In addition Audio books are extensively being used to acquire knowledge and provide an excellent alternative to print material. The computer revolution and advent of smart phone towards the end of the 20th century, introduced digital text as the mode of reading and writing to the world. The technology enabled persons with vision impairment to be able to read and write in the same script and mode, being used by everyone. This is a revolutionary development. The impact is seen in the opening up of several new opportunities in the field of education and employment.

The flexibility of being able to render digital text as regular print, large print, audio or braille means that once a book is produced as a digital book, adhering to accessibility guidelines, it can meet the reading needs for all, including persons with disabilities. To make this a reality, digital text needs to adhere to accessibility guidelines and follow standards such as Unicode, EPUB along with the Accessibility Guidelines, etc. Affordable assistive technology compatible with local languages is also required.

Digital text can be made accessible on mainstream digital devices such as the smart phone and computer, which brings the cost of the solution down and makes it available and easily maintainable. Screen reading software can convert digital text, on a smart phone or a computer, to spoken words using synthesized voice, or to braille using a Refreshable Braille Display.

One challenge often encountered with smartphones is that the touch screen user-interface of the smart phone is difficult to use by persons with blindness. To address this problem, the Simply Reading project of the DAISY Consortium, under the ‘Seeing is Believing’, initiative of the Standard Chartered Bank from December 2016 till May 2018, worked with users to :

* Create a specification for an easier-to-use interface for reading books on a touch screen,
* Develop a reading app and
* Evaluate it.

The results showed that it is now much easier for new users to learn and for less-confident users to continue to read with it. It provided a usable and affordable solution for low cost Android devices.

In addition to the Simply Reading Project, the outcome of decades of work such as transforming braille (Orbit), BrailleMe, Indo-NVDA, Indian language e-speak, Hear2Read, and Sakshams’ E5 and E10 DAISY player projects and initiatives resulted in the introduction of affordable reading devices compatible with 15 Indian languages in the year 2018. These devices include:

* Android phone loaded with the ‘Simply Reading app’,
* ‘Computer with Indo-NVDA screen reading and ‘Dolphin Easy Reader software’,
* ‘Saksham E5 and Saksham E10 Hardware DAISY player’
* ‘Orbit 20’ and ‘BrailleMe Refreshable Braille Display’.

The second important part of the solution is the Sugamya Pustakalaya powered by TCS Access Infinity online library and Bookshare online library. Multiple organizations are adding accessible content in all Indian languages to these online libraries, thereby, creating a national repository of accessible format books. All book reading devices are directly connected to the online libraries so that users are able to access a large array of books, delivered directly on their device. The online libraries also enable organizations, educational institutions and public libraries to gain access to the accessible format books and distribute these books to users who do not have access to internet on their devices.

In other words, providing 5 million accessible books, along with affordable assistive technology to enable these books to be read and distributed, filled the technology gap.

The third component of the solution is to ensure that there is a training session[[2]](#footnote-2) scheduled along with the handing over of the device.

# ABOUT SIMPLY READING CATAPULT PROJECT

After addressing the technology gap, the DAISY Consortium initiated the Simply Reading Catapult project under the, ‘Seeing is Believing Initiative’ of the Standard Chartered Bank [from June 2018 to November 2019] to deliver the Simply Reading Solution in the hands of users, across India. The key objective of the Simply Reading Catapult Project was to take this solution and create awareness about it among the user group, their teachers and members of their family.

## The overarching thought behind the project:

* To create a long-term strategy to increase outreach and to reach out to at least a million users with blindness or low vision with digital literacy and accessible books solution.
* To reach out to at least one lakh persons with blindness or low vision, by November 2019.
* To create a network of key stakeholders who would work together to reach out to the persons with blindness or low vision with the Simply Reading Solution.
* To provide assistive technology devices with the Simply Reading Solution at subsidized cost to at least 500 persons with blindness or low vision.
* To train at least 200 trainers who could provide training and support to persons with blindness and low vision in acquiring and using the Simply Reading Solution.
* To add at least 50,000 pages of books in accessible format on the online libraries, relevant for persons with blindness and low vision who have been provided the Simply Reading Solution.

## Logistics:

DAISY Consortium implemented the project in collaboration with Indian partner organizations. The DAISY Forum of India [ DFI ] is a network of government and non-government, not-for-profit organizations, providing accessible books to persons with print disabilities. Representatives of DFI member organizations created a Steering group that is involved in guiding the implementation of the project as well as, the development and implementation of the long-term strategy, known as the ‘See A Million Strategy’.

The DAISY Consortium also had the responsibility to raise resources and funds to carry on two activities. These activities were, funds for providing 500 devices at subsidized cost and funds for the production of 50,000 pages of accessible format books. Implementation of this component along with the raising of funds was done in collaboration with Saksham because a local organization partnership was essential for raising funds and implementation.

##  Key Activities under Simply Reading Catapult Project:

* Creation of an online portal for collaboration, registration of network partners and management of the data of the user-group or beneficiaries.
* Finalization of all components of the Simply Reading Solution and identifying the reading device to be provided, under the solution subsidy programme of the project.
* Preparation of tutorials in audio, accessible e-text format, both in Hindi and English.
* Preparation of a brochure, podcast and video, both in English and Hindi, about Simply Reading Solution.
* Seminars, presentations, media coverage and meetings to create awareness about Simply Reading Solution.
* Identification and registration of at least 30 network partners that provide support and training to beneficiaries in different parts of the country.
* Fund raising for providing Simply Reading Solution, at subsidized cost to at least 500 trainers / end users
* Fund raising to add at least 50,000 pages of relevant content on Sugamya Pustakalaya powered by TCS Access Infinity and Bookshare

## Impact Assessment Study

The DAISY Consortium adopted the following methodology to implement the project:

* Identifying specific set of users, based on pre-defined criteria, to whom the complete eco-system of the solution would be delivered. The complete system included the device at subsidized cost, the relevant content, membership of Sugamya Pustakalaya and Bookshare, training the users and orientation of teachers and parents for optimum utilization of the solution.
* Several devices were tested to identify the appropriate smart phone or laptop to be provided at subsidized cost, under the project.
* The most important component of the programme was that the device was only provided after establishing proper linkage and providing appropriate training program.

## About the Devices

The data given below mentions the break-up of the devices handed over to users, under this project :

Refreshable braille displays – 57

Laptop – 166

Smartphone – 345

Daisy player = 9

## About the Training Programme:

An important component of the project was to ensure that there was a training session scheduled along with the handing over of the device. The reason for this was :

* To introduce the users to the various features of the device,
* To train the users on how to use it effectively and optimally,
* The range of content and apps that the person could be enabled to connect with and the usefulness of connecting with online libraries. The training process was seen as a core component of the project as it provided an opportunity to professionals to directly interact with the users and introduce the device and the possibilities that the device offered to them.

As part of the impact survey questionnaire, people were asked whether they attended the training session at the time of getting the device. 114 people said that they had and a 102 reported that they had found it very useful. 14 people said that they had not attended the training session. Others did not answer the question. Among the suggestions that people gave for the training session were those who felt that it should be of a longer duration, some said it should cover training on using computer, on using net-banking etc.

# IMPACT ASSESSMENT STUDY FRAMEWORK

## Objectives of the Impact Assessment Study :

The primary objective of this study is to assess the impact of Simply Reading Solution on 500 users who were provided various reading technologies such as Smart phones, Laptops, Daisy Players, Refreshable Braille Displays [RBDs], at subsidized cost connected to online libraries along with training. The study seeks to evaluate the change brought about in their reading capabilities, skills, confidence and their overall performance in the academic sphere and beyond. It seeks to gain an insight into whether and how the device has impacted their level of independence and enhanced various spheres of the users’ life. The following indicators are used to assess the impact of this initiative:

1. a. The impact of Simply Reading Solutions on reading and independent access to instructional material

b. Impact of Simply Reading Solutions on reading and independent access to non-academic print, audio and video content

2. Impact of Simply Reading Solutions on enabling access to content in formats preferred by them, such as braille, audio or large-print.

1. Impact on Social inclusion due to independent access to information and communication.
2. Impact of Simply Reading Solution on self-esteem, self-confidence and growing aspirations.

## Methodology:

The study was carried out in 3 phases, and involved both qualitative and quantitative methods of data collection. The first phase of the study comprised of baseline assessment and focused on capturing the background information of the users, along with their current level of education.

The second phase of the study on the other hand focused on assessing the outcome of the assistive devices on the users with regard to the level of change and independence brought about in accessing reading material and other information.

The third and final phase of the study sought to capture the long-term impact of the intervention on overall skill development, academic performance, knowledge and confidence-level of the users.

Life journeys of seven users were detailed, to reflect how access to digital content has impacted their lives and made them more independent.

The baseline study covered all users and was done at the time of device handover and training. The second phase of the study was carried out after 3 months of dissemination and training, wherein data was collected from 30 % of the beneficiaries, selected through random sampling method. The data was gathered from the participants during both these phases through semi-structured questionnaire.

The third phase of the study was qualitative in nature and covered only seven users. In-depth individual interviews were conducted to capture their insights and opinions regarding the impact of the reading devices on their reading capabilities and skills.

## The Process followed for the Impact Assessment

Detailed interviews were conducted telephonically to gather feedback from people about their experience in using the device they had received under the project. A team from Saksham undertook the task of calling all the people who had received the devices and were part of their database.

Before the actual process of making calls was initiated, the team compiled all the lists with names of persons who had received the devices through the various partner organizations associated with Saksham.

A detailed questionnaire was designed, and this was converted into Excel sheet. The key elements that the interviewers needed to focus upon during the course of the interviews were discussed. The questionnaire being quite extensive, the team also discussed the most effective way to conduct the interview. It was decided that the conversational style would be adopted but care would be taken to ensure that all the elements of the questionnaire are incorporated during the interview.

The questionnaire had many questions with several options tagged to each. These were included in the excel sheet under separate column heads. However the team decided that during the course of the interview, the main question would be asked and it would remain an open-ended question. For instance, ‘What is the range of content that you are able to access using your smartphone?’ The interviewer would document the response provided by the user, in the corresponding column. Once the user had responded, the interviewer could ask specific questions regarding the options that had not been covered, for instance if the person has not mentioned anything about reading the newspaper using his /her phone, the interviewer could check specifically about that.

The advantage in asking open-ended questions first was that the users were free to respond with what they felt. After all, their response was what the survey wanted to capture. Leaving it open-ended also enhanced the scope of the nature of the responses. There were users who mentioned things that were not mentioned as an option. These elements would have got left out if the options were read to the user and she/he had to respond solely on that basis.

The challenge lay in recording both the qualitative as well as quantitative data that the interviewer gathered. An Excel format many times forces the interviewer to channel the responses into boxes, condensing the response and veering towards yes/ no responses. This is something the team did not want to do.

During team meetings the value and importance of qualitative responses was emphasized time and again. The interviewers were asked to document the ‘feeling-level’ response. The team gave priority to how the person using the device felt about it and the impact it was having on his/ her life. As you read on, you will find many lived experiences reflected and the interviewers out-did themselves by documenting verbatim what the person said. These are the responses and statements that encapsulate the true essence of what the project endeavored to do.

In getting the 157 responses that have been documented in this report, the interviewers faced many challenges.

* Many calls were made. More than the 157 documented. Not all were willing to spare time and talk to the interviewer.
* There were people who gave information to basic questions and did not wish to give detailed responses.
* There were people who answered some questions and left others unanswered.
* There were people who had changed their telephone numbers and remained off the radar of the interviewers.
* There were people who had given their phone to members of their family to use and thus they themselves could not be contacted.
* There were also children who are studying in school who have received the device. Since they live in hostels, they are not allowed to keep the phone with them. [ NOTE: This is an important aspect that emerges through the interviews and becomes a point for advocacy. When the device is handed to the person, the school authorities and the parents must necessarily be brought into the picture. In case the school feels that a smartphone is not a feasible option, an alternative, perhaps a laptop or Daisy Player can be considered. The school and the teachers should be equal partners in choosing the most appropriate digital device for achieving the overall goal of reading and writing independently. The goal is to read and get access to millions of publications and read it with eyes, ears or fingers. To be able to write independently in the same script used by everyone else.
* There were phones that remained ‘switched off’ and despite the interviewer trying multiple times, over a period of time, were not able to get through.
* There were some people who only spoke their regional language and could not understand or speak English or Hindi. This caused limitations and only very basic level interaction was possible.

Through all these challenges, multiple calls over a period of time and dealing with all types of people- some who were happy to talk and some who just did not want to talk, some even saying they did not receive any device [ probably just to escape the interview process !] the interviewers succeeded in documenting detailed interviews with 157 persons and capturing valuable information. The interviewers need to be commended on their perseverance and patience.

##  Diversity of user group

The 157 people whom the report talks about, reflect all the diversity that our country presents. They cut across all age groups, some are studying in school or college while others have completed their education and are working. There were some people who were living in rural areas, while others were residing in urban areas. They are spread across different States and different regions of the country.

Further differences emerge, linked to where the person resides. There are people who have good internet connectivity; some don’t have any connectivity at all. Some are linked and are in close touch with civil society organizations, while others are not in regular touch or live far from any organization. This linkage and support of civil society organizations is essential for the person staying constantly updated about all new developments. They are able to get information about all new apps, software and content that is available in accessible formats and they learn how to connect with it. These organizations thus become the pivot, connecting and interconnecting many lives.

**The data for the 157 persons was compiled under the following heads:**

* Profile of the person
* Educational profile
* Employment status
* What type of device does the person have
* What is the preferred device of the person [ Note: many persons have multiple devices.]
* Whether the person is a braille reader or not
* What is the mode / format the person prefers to use for reading
* What are the various purposes the person uses the smart-phone for
* What is the range of content that the person accesses.
* Is the person a member of an Online Library
* What is the impact the device has had on the person’s life.
* Whether the person attended the training session and found it useful.

# THE FINDINGS OF THE IMPACT STUDY:

Total number of users interviewed: 157

## Profile of the User Group:

Of the total 157 persons spoken with, 117 were Male and 40 were Female.

### Educational Profile

According to the educational profile, the largest group was of users who were enrolled in college. There were 45 users who were college-going. The second largest group comprised 29 users who were school students.

There were 6 users who were enrolled in a B Ed course, including those who were studying to be special educators.

5 users were attending University, including one person who was pursuing a PhD !



What was interesting to note was that 4 users said that they had gone back to education. These were people who were well past their thirties who said they had enrolled in open school now.

Profiling according to educational status also impacts and has a close bearing on other aspects as well. For instance when we look at the various purposes that the person uses the device for, a school-going child will not be using it for making financial transactions, while a slightly older person in college or someone who is working is more likely to do so. Thus age and educational level have connects with different aspects that the study tries to evaluate.

### Employment Status

The question regarding employment status was applicable to fewer persons, as many are too young and still studying in school or college. Out of the persons who fell in this category, 43 persons said they are working. 11 persons said that they are not working. Out of these 11, there are women who are homemakers and stay-at-home mothers and there are some men who said that they stay home and do not work. 8 people said that they were looking for employment and exploring possibilities.

A break-up of the 43 persons who are working was also done. The purpose of this analysis was to gain an insight into the nature of employment people using the device were engaged in. It is important to point out here that not all 43 gave details regarding the nature of their work.

A large chunk of the 43 persons who are working are engaged in the teaching profession.

While nine persons are working as music teachers; two are teaching Information Technology; six said that they are teachers in schools, while one is a special educator. Thus a total of 18 of the 43 are engaged in teaching.

What was interesting to note was the fact that there are two persons among the 43 who are working as physiotherapists.

Two are working as clerks in a bank

One person said he does music shows; another one said he is self-employed. Another person said he runs a property business with his family. One person works as a bookbinder; while another one as a construction labourer.

Six persons said they have government jobs- including a person who works as an announcer for the Indian Railways. Four persons are employed with civil society organizations.

This is another aspect of the diversity mentioned earlier and the nature of work would show variation in the range of content the person would access or the use the person would put his/her device to. For instance persons connected with music, said that they often access music-based content on YouTube. Teachers prepare their lessons by accessing content through their devices.

### Device or Devices owned by the person:

Each of the 157 persons spoken with was asked which device or devices they received. While all 157, according to the records available, were recipients of smartphones, only 150 said yes to possessing a smartphone. What we found across the survey study was that many people preferred not to answer some questions and that is reflected in many places in the report.

83 persons have a laptop, including a few who have a desktop. 49 persons said they possess a daisy player.

The break-up of this category also shows that there are many people who possess multiple devices. Many use a smartphone as well as a laptop, others use a smartphone and a daisy player. The smartphone is the common factor and the most commonly used and owned device.

**Preferred device** ie People were asked about the device they preferred to use, based upon the convenience while reading or accessing information.

The smartphone topped the chart of preferred devices. 76 of the 117 people who voiced their preference for a specific device were in favour of the smartphone. They used the smartphone the most for accessing content.

Laptops were the preferred device of 26 people and 15 people voted in favour of their daisy players.

However even here there were multiple choices. There were many places where people said that they *‘prefer the smartphone for 90% of the tasks and for 10% of the tasks they prefer their laptop’.*

More than one person said, *‘ I am completely dependent upon my laptop and smartphone.’*

Users prefer using a specific device depending upon the type of content that they need to access and the task at hand. Some users also shared some of their challenges they face while accessing content on their smartphones. Some users said that they find it challenging to access information that demands them to open multiple windows and links. Some reported that the phone starts hanging when multiple windows are open. People also mentioned their inability to master the touch screen format immediately. They said that using a touch screen requires time and practice before one can become proficient in its use. In situations such as this, if a person has a laptop, it would perhaps be safe to assume that they would use the laptop for specific tasks that require opening of multiple windows and links. Wherever an option is available, people prefer using a laptop to type out texts beyond just short messages, for example, for taking notes, writing assignments and emailing. Laptop is the tool of choice when it comes to writing; there is no ambiguity in it.

Some people also mentioned that they use a particular device for a specific activity. For instance, there were a few people who mentioned using their daisy players or their smartphones for recording purposes and used them to record lessons and access them whenever they wanted.

## 1.a. The impact of Simply Reading Solutions on reading and independent access to instructional material

One of the primary objectives of this project was to enable the users to access and be able to read instructional material independently. Various dimensions get covered under this head:

- The range of course-related content that the person accesses

- The content linked to competitive exam or for research

- Sources of accessing content. Membership of online libraries is an important part of this.

The questionnaire included a section on the range of content that the people accessed on their smartphone. The options that were created as part of the questionnaire included – reading course related material; reading newspapers; reading magazines; reading books for leisure; reading content for educational purposes or research or linked to exam related content. However the options were not supplied at the time of asking the question. It was an open-ended question.

Among the respondents, 87 people said that they use their device extensively to access their course material. They spoke about how with the device they were now able to access curriculum related and study material with far greater ease. Here it is important to mention that this question is more applicable to children studying in school and persons who are studying in college, university or pursuing some professional course. Similar is the case of the next question which asks, ‘whether you use their device to access educational content or exam related content or for any research work’. 12 persons have responded in the affirmative to this question.

All questions in this section are not equally applicable to all users. Each question would be more relevant to people in a certain age-group. These questions are also closely linked to factors such as whether the person is pursuing an academic course, is working, what the person is doing currently and where she/he is based, among many other factors. Thus when the data is read, it has to be read taking all these factors into consideration.

The other dimension of importance in this section is whether the person is able to read at the time of his/ her convenience, reflecting on independence, when it comes specifically to accessing content.

71 people said that it has enabled them to read at the time of their convenience, also indicating that the person feels he/she is more independent. Some elaborated on this and said, ” Earlier I had to wait and adjust to the time the person was able to take out time to read to me, now I can read whenever I want.” Another aspect integral to this is the fact that “I am able to read for a longer duration and read and re-read a text as many times as I want.”

Another person highlighted the fact that, “ I am able to read at my own pace and able to comprehend it better.” These are huge impacts that access to content through these devices have created in the lives of people.

Discussions at various forums on this specific aspect have stressed the importance of being able to read independently. Discussions and interviews with user groups, especially adolescents and young adults, have highlighted the fact that there are some content that people are not comfortable accessing with the support of other people. They would prefer to access certain types of content independently and in their own private time and space. Amit said, “I was not comfortable asking my parents to read out a Sidney Sheldon books to me. All my friends had read them and were always talking about them.” A couple of other users have just said that they are not always comfortable being read to. Demonstrating the right to access to the same content, on an equal basis with others, while respecting their right to privacy and independence.

### Sources of accessing content:

While taking benefit of the online libraries to users was one of the key objectives of this project, the impact evaluation revealed that users were able to access the content available online through other sources as well.

One of the aims of this project was to ensure that more and more people were introduced to online libraries like the Sugamaya Pustakalaya and Bookshare. These online libraries provide access to an extensive range of digital content across a wide range of subjects and type of material.

Among the 157 respondents, 51 confirmed that they were members of online libraries, while 70 said that they were not members. The others did not provide an answer to the question.

Looking at the 51 persons who said that they were members of online libraries, 35 people said they were members of Sugamya Pustakalaya and 9 persons said that they were members of Bookshare. The rest did not specify the library they were members of.

The ironical part of this is that while on one hand people have stated that they would like access to more digital content, on the other hand they have not got onto the online library platform. There were those who admitted that they are aware of the benefit of online libraries as it was covered during the training, but are yet to take the initiative to get onto that platform. This makes it even more intriguing. Interviewers took the opportunity and urged the people to become members and stressed on the purpose and benefit of online libraries and how through them, users can gain access to an extensive array of titles in digital format. The Saksham team also supported the enrollment of some users who were finding the process of enrolling with the Sugamaya Pustakalaya daunting.

During the interview process what also emerged was the fact that there are challenges people face in accessing content available on-line. People also shared the ways they had devised to overcome these challenges.

There are people who have spoken about the challenges they face in accessing on-line content. They said that they do not have access to the Internet. Some person spoke about how they go to civil society organizations once a month or as often as they can and get the material they need, in audio format, on their flashdrives. Many are based far from any organization and do not have access to many facilities.

One other factor that gets highlighted during the course of interaction with user groups, is that their comfort zone lies in accessing human voice recorded material, shared amongst peers. So the shift to digital text available on Sugamaya Pustakalaya is slow to come by.

People shared the various channels of sourcing content. One of the ways through which users were accessing information and content was through direct sourcing from organizations and groups. Organizations remain one of the key facilitators. The organizations were sharing accessible content sourced from online platforms, directly with individuals. Often the material was broken down chapter wise or according to topic and the person received it as a series on a weekly basis.

This illustrates the fact that even if the person is not directly linked to the online library, the accessible content available on the online library is still being made available to the person through another source. This source could be an organization or a group of people enrolled in the same course.

All this highlights the importance of multi-mode delivery systems instead of only on-line.

This is one of the reasons why the Simply Reading Catapult project’s target of one lakh registrations on Sugamaya Pustakalaya was not reached. However the results do indicate and provide sufficient ground to believe that the benefit of accessible content available on Sugamaya Pustalalaya is reaching out to a far larger population that what gets reflected in the 28,000 registered users at present.

## 1.b. Impact of Simply Reading Solutions on reading and independent access to non-academic print, audio and video content

Besides the academic content, people were also asked the range of non-academic content that they accessed using the device.

28 people have said that they use their device for accessing books for leisure time reading. 20 people said they read magazines. The users who have said this are primarily people who are working or people who are working within their homes. None of the children the interviewers spoke with said that they read magazines or read books that were not linked to their course curriculum.

*Payal[[3]](#footnote-3) said,” Access to books have opened a new chapter in my life. I stay home all day and beyond the housework, I did not know what to do. Now I have started reading short stories and novels. I also enjoy reading autobiographies. Besides keeping me occupied, the device has opened up many opportunities as I have also learnt many skills through you-tube tutorials. I feel I can do much more now. ”*

43 people said that they read newspapers on their devices. This included a cross-section of users ranging from- children in school, to, older people. Many people have also said that they access the news bulletins through their devices. They remain connected with what is happening in the country as well as across the world.

There are many people who have said that they are learning skills through multimedia content available at their beck and call. A young man spoke about how he has learnt music through you-tube videos. A young woman shared that she had learnt a new language through online tutorials. These are skills that these young people plan to use in looking for new opportunities and enhancing their employment prospects as well.

## IMPACT OF SIMPLY READING SOLUTIONS ON ENABLING ACCESS TO CONTENT IN FORMATS PREFERRED BY THEM, SUCH AS BRAILLE, AUDIO OR LARGE-PRINT.

As part of the survey, users were asked whether they are Braille Readers.  99 users said ‘Yes’ and 39 users said that they did not know braille.

There was a specific reason this question was asked. The idea was to see how many persons were able to read braille and how many actively continue to use braille to access information and content even after access to a device through which they could access content in digital formats.

The data reveals that many people are braille readers and data reflects that 81 people actively continue to use braille to access content. They cite it as one of the multiple modes they use to access content.

Coming to the group of 39 people who are not braille readers, 28 people have specified the reasons for them not knowing braille. 13 persons were persons with low vision. They said that they are able to read large print or books in regular print, when they hold it close. 14 persons had developed vision impairment later in life and thus had not learnt braille. In addition, there was also one other person who said that he did not want to learn braille.

### Preferred mode of accessing content

When the users were asked about their preferred mode of accessing content, there were multiple options offered. These options included braille, audio, e-text and access to material through sighted assistance.

While 81 persons voted in favour of braille, 93 persons said they preferred accessing content in audio format. 66 persons preferred to access content in e-text. 52 persons said that they preferred access to content with sighted assistance. These 52 users also specified the reason for this. The reason stated by them was that there are still many books or content that they need for the course that they are pursuing, that are currently not available to them in digital formats. Thus they are dependent upon others who can provide sighted assistance and read to them.

While there were people who did not give any answer to this question, there were others who said yes to three or all four options. Persons who read braille by and large were seen to opt for all the four modes. Besides these, 7 persons with low vision said that they prefer accessing reading material in large print whenever available.

The diverse opinions voiced by users, lead to the following points :

* Users who are braille readers are exploring other formats including digital. While braille remains their comfort zone, they are gradually moving towards exploring other formats. Hence the reason why a large segment of braille readers have said that they access content in all four formats.

Two contrasting sentiments of braille readers reflect their connect with braille and how they are weaving it in with other modes.

Samaira for instance said, *‘ I listen to audio text, but for learning spelling I read braille.’*

*While Bani said, “Braille books are not always available easily. This poses challenges in reading at the time of my convenience. With the device I am able to access digital content and that makes it easier to read.”*

*“ I use audio format to access material in Hindi and use e-text for accessing material in English.” Shares Samar.*

Karan said, *‘ I go to the organization I am associated with and get all the books I need on flash-drives and bring them home. I can then access the content whenever I need. Since the organization is not very close to where I live, I cannot go very often and it limits my access to content. Now with the device I feel I have access to a larger content base.’*

* There are texts that are not yet available in digital format and for now, users have to rely on alternatives like hard copy braille or audio or being read to by someone.

*‘I am not able to access the digital texts of all course material I need. Thus I get that material in braille from the civil society organization I am connected with.’*

Among the user group were also people who prefer someone reading to them. This was especially true when they were unable to source content in hard copy braille [ only in the case of braille readers] or in digital formats. There were also those who said that it is not convenient to get someone to read to them. Some of the sentiments expressed by users seeking sighted assistance include:

*‘ I cannot be sure that the person will be free and willing to read to me when I want’, said Nilay.*

*Simran felt that ‘ The person reading to me may not be familiar with the subject and this will affect how she/he reads.’*

*‘Incase I am unable to understand the content, I cannot ask the person to re-read certain sections again and again. The person reading to me will not like that’ shared Pranay.*

The impact assessment interviews point to the fact that, digital formats are still new to many of the users. While they have begun exploring, they still rely upon hard copy braille books or human voice recorded books, especially for studying for exams. But with more digital texts and more devices in the hand of the users, they would be able to make the switch seamlessly. Refreshable braille displays are able to overcome the limitations of hard copy braille ie of being bulky and not enough content in it. However, few users do feel that getting full page of braille in the hard copy book is better than one line of braille on the RBD. On the other hand, in their opinion, benefits of the RBD outweigh the hardcopy books as it provides access to a vast treasure of digital text straight in braille. The cost of Orbit and BrailleMe still remains high for most individuals though.

## Impact on Social inclusion AS A result OF independent access to information and communication.

One of the objectives was to see the impact the device and independent access to content has had on the social life and inclusion of the users. To gain an insight into these aspects, users were asked what all they used their smartphones for.

**The various uses the smart-phone is put to:**

The survey wanted to gain an insight into the various uses the persons put their smart-phone to. Has the training and better Internet connectivity enabled persons to widen the scope and make full use of the possibilities a smartphone offers?

The regular use a smartphone is generally put to is making calls and sending and receiving texts. 142 people said they used their smartphone to make calls on a regular basis while 111 people used it to send text messages. However the aim of this project and the training session that was conducted at the time of handing over the devices, was to introduce the users to various other forums and possibilities. These included, sharing information about the online libraries and the advantages of connecting with them to access content; the powerful tool of Whatsapp through which they could go way beyond just the social connectivity. Many users are using Whatsapp to study. There are various forums and groups that share content on a regular basis. For instance, a person sitting at home receives a chapter or a book from the curriculum of the course she/ he is pursuing, in accessible format, every week. The group has other students too and each becomes a further link to sourcing, sharing and accessing more content. Any one who finds appropriate material, shares it with the group. Also the platform provides the opportunity to ask questions and clarify doubts alongside ie without waiting to go to the centre or meet the teacher.

Most of the people, who have responded to the question, have specified that they use WhatsApp as a platform to connect with study groups. They are on various groups and remain connected with many people and organizations. Whatsapp seems to be making a difference in the lives of many people with disabilities who can now access their course content from the comfort of their own homes.

*One young person had found an innovative use of whatsapp. Manav[[4]](#footnote-4) said, “ I access all material I need for my studies on* *my* *smartphone. However there are times when I don’t find the material I need in digital format. Then I request my friend to support me. He reads out the text and records it for me and sends it to me over whatsapp. It works for both of us. He can record it whenever it suits him and I can access it whenever I want and as many times as I want.”*

You-Tube is the other platform that is increasingly being used for enhancing educational qualifications and doing professional courses. From amongst the respondents people have mentioned accessing content on you-tube to learn music, to enhance their general knowledge skills and even to prepare for competitive exams.

*Kanav[[5]](#footnote-5), whom we spoke with said, ‘ I was just sitting at home and not doing anything. There aren’t any opportunities close to the place I live in. But things have changed ever since I received the smartphone. I have now started preparing for the railways exam and other competitive exams. All the content that I require is available on You-tube and the whatsapp groups I have joined. Suddenly I find there is something to look forward to. With the reservations for persons with disabilities in government jobs, I am hopeful about making it.’*

There are many others who have gradually started using the phone for purposes beyond just calling and texting.

65 users said that they are using the phone for navigation purposes and they feel totally independent now. They are able to go out on their own and access places themselves. While earlier, they had to coordinate with someone to accompany them to places they wanted to go to, especially if it was someplace new and unfamiliar. Now they feel confident to venture out on their own.

43 people said they are using their smartphone for financial transactions. They are able to order things, pay their bills and make online payments at the time of their convenience, without having to physically go there.

People, primarily those living in the urban areas, spoke about the sense of independence they had suddenly gained. They shared that they feel very independent and often book an Uber or an Ola cab to go for work related trips or even to go meet friends or for social events.

*Sanjay[[6]](#footnote-6) says“ I feel confident about booking an Uber or Ola cab and fixing up to go out with my friends. With my phone I am totally independent to move about whenever I want.”*

*“ I feel free to go wherever I want, whenever I want.” Says Aditi[[7]](#footnote-7)*

One remarkable aspect where a positive change has been seen is in the area of socialization. 51 persons said that their social life has been enhanced after getting a smartphone.

*Like Vardhan[[8]](#footnote-8) summed it up “ The device has enabled me to connect with the world.”*

 *“The phone has helped me socialize. I feel totally connected with my friends on whatsapp” said a young woman, Vani[[9]](#footnote-9)*

*“ I feel alive. Earlier I was isolated, now I have a tool to stay connected with people. I have become more social.” says Umesh[[10]](#footnote-10)*

Even while sitting at home, they said that they feel more independent.

*Sandhya[[11]](#footnote-11) shared “ I don’t feel bored now when I am home alone. I can do lots on my smartphone now.”*

Users are clearly in touch with many more people, their ability to navigate the physical spaces, their independence in commuting, using Uber or Ola cabs that they can book from their phone, their ability to make financial transactions- like paying a bill or paying for a meal all can easily be done using their phone. All these factors have made it possible for them to go out more often and enhanced their confidence in their own abilities

## 4. IMPACT OF SIMPLY READING SOLUTION ON SELF-ESTEEM, SELF-CONFIDENCE AND GROWING ASPIRATIONS.

**Impact of the Device on your life:**

This section tries to delve deep and understand what the person feels about the impact the device has had on his/ her life. The first thing that the survey team wanted to find out was whether the users felt their level of independence had increased after they started using the device.

78 users said they definitely felt that they had become more independent in various aspects of their lives. While some people said they can go out whenever they want, others said they can read at the time they want, without waiting for someone to support them.

“*My independence and self-sufficiency levels have increased in almost all areas.” Says Sarabjit[[12]](#footnote-12)*

*Naina[[13]](#footnote-13) shares “Earlier I used to think that a phone is not good. I thought my parents would have to spend a lot of money and it would not be worth it. My opinion about the phone has changed completely. Now my phone is an important part of my life. It is the pivotal axis of my development.”*

Another aspect that the survey covered, applicable more to children studying in school and those entering college is how the device has opened up more avenues for education. 33 users have said that it has had a positive impact and they feel more avenues are open for them to pursue.

In addition, 23 people have said that the device has enabled them to study subjects that were earlier inaccessible to them.

*“I scored 57% in my class ten exam and after getting the Smartphone, connected to online libraries, I have scored 78% in my class 12 exam! This marked improvement in my grades is all because of the smartphone. It has enabled me to access all the course related content and understand concepts better.” Says Malini.[[14]](#footnote-14)*

*Comparing the pre-phone days with now when she has a phone, Maya[[15]](#footnote-15) says “Earlier my father used to get audio content for me and I used to listen to that and learn. This was very limiting and I was restricted to studying only from that. Now everything is available on the phone, connected to online libraries. I can access more content and can go beyond just my course books. I can also access other information on You-tube and other websites. This has enabled me to do better.”*

*“I used to find it difficult to learn from the material I had. Now the phone has become a life changer. It helps me with my studies and also in day-to-day activities.” Says Varun.[[16]](#footnote-16)*

*Anaya[[17]](#footnote-17) would have changed her subjects, moving to the commerce stream. She says, “With the smartphone, I am able to study more and study better. I would have opted for Commerce instead of Arts had I received the device earlier. I can access content that was not so easy to access earlier and my grades have shown a dramatic improvement.”*

*Priti[[18]](#footnote-18), a mother of a young boy said,’ I use my smartphone to read and to teach my son. I have a Masters’ degree but I am now a stay-home mother. The phone has totally changed my life. I suddenly feel more involved and connected with my son’s school years. I think I am doing more than other mothers do.”*

The smartphone has also enhanced the livelihood options for people. 20 persons in the survey said that their livelihood options have grown as a result of them getting a smartphone. They are able to study subjects they earlier felt they could not. Some said they are able to enroll for higher education and professional courses now. Thus they are able to enhance their qualifications.

*A young, stay-home mother said, “ I have joined various groups on whatsapp. I have also started contributing greatly to various groups in my State. I educate people about the use of android phones, talk-back and Simply Reading app. On the other side, I constantly keep updating my knowledge through the Saksham whatsapp group.”*

The usefulness of Simply Reading Solutions can be summed up in the words ofa young woman, Payal who has enrolled for her PhD*. Payal[[19]](#footnote-19) says, “My smartphone and laptop, connected to online libraries and other sources of accessible information, are my lifeline. Without these, my life is akin to life without a soul.”*

Throughout the interviews, people also voiced their aspirations after getting the device. What they said is best expressed in their own words.

“ I am totally dependent upon my phone for everything.” Says Sidharth[[20]](#footnote-20)

Shivani[[21]](#footnote-21) has started aiming high and says“ I want to become a researcher and pursue science and technology.”

Ravi[[22]](#footnote-22) says, “ I have been following athletics and how athletes train. I want to join the Indian athletics team as a runner.”

“ I have started teaching computers to a doctor! I now want to pursue the technology line”, says a thrilled young man.

Singer in the making, Priti[[23]](#footnote-23) says “ I have started learning how to sing and follow tutorials on you-tube.”

Seema[[24]](#footnote-24) says “ I want to pursue Science.”

“ I want to be teacher.” Says Sarika[[25]](#footnote-25)

A young man, Pankaj[[26]](#footnote-26) topped it all by saying, “I want to drive a car!!” He wants the team to come up with technology that can support his dream.

What these sentiments express is the fact that people who have started using the Simply Reading Solution feel that unlimited space has opened up for them. They have infinite possibilities that they can explore. They are able to experience many new things and the world is theirs to explore.

# CONCLUSION

The impact of this project was assessed primarily from the perspective of the users. The report dwells upon the various facets right from the device or devices owned by the user, to the range of content the person accesses, to the preferred mode of accessing the content. It looks at the training the person received and the challenges encountered by the person. On the other side, it looks into the creation of content in accessible formats and connecting the user group to this content.

Through this process, basic information about the individuals was also collected, to get a basic idea about what the person is doing. The largest group of users was students in school or college. There were a significant number of users who had full time jobs. The report also points out the link between the age group and what the person is doing, to the range of content the person accesses and the uses the device in hand, is put to. The adults among the user population, especially those who are working or are in college said that they use the device for navigation, making on-line payments, for booking cabs besides accessing content. The children who are still in school were using the device to access course curriculum related content. One issue that some of the children in hostels were facing was that the smartphone was not allowed. This is an aspect that requires working out the strategy afresh. Here the school administration, teachers, members of the family and the user will need to be equal participants in arriving at a decision regarding selecting the device that is best suited. In case a smartphone is not the ideal device to use in school; perhaps a laptop would be more appropriate.

The report indicates that almost all the users had a smartphone, followed by the user group who had a laptop and those who had Daisy Players. The impact interviews reveal the fact that many users have multiple devices. The users who indicated their preference for a specific device also voted for the smartphone. Some users qualified their response by saying that a smartphone besides being easy to carry was very versatile. It could be used to access content, to send messages, to navigate, to make online transactions and even to record lectures in class. It was only when it came to typing longer texts that they felt it was easier to use a laptop for that. The laptop is the preferred device for writing. For this reason, the laptop becomes an essential and a preferred tool during school and higher education. It will also help in achieving the goal of removing dependence on scribes to write assignments and examinations. The report details what the users’ experience has been ever since they received the device. Some of the experiences are heartwarming and validate what the project mandated. Users sharing how their grades had improved, of how they were able to read at the time of their convenience and how their overall level of independence had improved, due to them being able to access content independently and do many things without assistance.

The process also brought forth some ground realities and challenges faced by the users. A lot of users spoke about the fact that they did not have internet connectivity and thus were unable to directly access content, available online. They went on to share the fact that they were however able to access content, through organizations and through peer support and groups. Thus meeting the primary objective, albeit indirectly, of reaching accessible content in the hands of the people for whom it has been created.

These reflect the reason why the target of one lakh registrations on Sugamaya Pustakalya, as proposed under the Simply Reading Catapult project, was not achieved. However when the challenges faced by users and how they were overcoming them, to read content in accessible formats, utilizing technology and the device in hand are taken into consideration, there is every reason to feel positive. The ripple effect at play is ensuring that many more users than those directly registered are accessing the content.

The impact assessment does provide sufficient ground to believe that the benefit of accessible content available on Sugamaya Pustakalaya is reaching out to a far larger population than what is reflected in the current 28,000 registered users.

Simply Reading Solution of reading devices connected to sources of content provided along with training is life changing and has done wonders to the lives it has been introduced to. The outreach of this solution is very limited till now and this need to reach out to many more people. However, in many cases it is yet to reach its full potential, even with those to whom it has been provided. Some of the key reasons identified during this study are:

* Training should be split in more than one term, as we need to have better control over basic operation skill before we learn other parts of the solution.
* All stakeholders need to know about the solution for its impact to happen. For example, it is not enough to train users in the use of the solution, even the teachers need to fully understand about it and only then the solution can become part of the education methodology.

The solution has certainly helped users to be better prepared for being employable in today’s work environment.

The simply reading catapult project has been a complete success to demonstrate the model of digital literacy and making persons with print disabilities fully independent for all their reading and writing needs.

It has also provided a very good strategy and a software platform for bringing various stakeholders together for further scaling up of this outreach program and introducing the benefit of the simply reading solution to a million users in the next 5 years.

In the education system, it has provided reading and writing independence but it will take more effort and change management to eliminate the use of scribes in the education system.

The solution has certainly helped persons with print disabilities to explore more disciplines of education and many different professions beyond the ones that were available to them earlier.

Being independent in the daily living activities has given better social inclusion and a much better chance of living a life with dignity.

*The impact of the entire project is best encapsulated in the words of the users. Detailed interviews with users, reflect their lived experiences, the challenges they faced and how the new technology enabled devices have impacted their lives…*

# REFLECTING LIVED EXPERIENCES: IN THE WORDS OF THE USER GROUP

## *Anvay’s****[[27]](#footnote-27)*** *Story…*

*Anvay is 33 years old. Till last year, his life seemed different. He had completed his class 12 exam and had earned a diploma in massage therapy. When he got a smartphone last year, it just widened his horizon.*

*Earlier he used to access material in Braille or ask for recordings of the material. Since his vision loss started in high school, he learnt braille late. He says he was not very good at braille and used to find it difficult to learn. That is the main reason why he did not pursue further education.*

*Now, Anvay is able to access all types of content on his phone. He has an abundance of information at his command. The world of information has also enhanced his awareness about employment opportunities. He now knows that he can try for a job with the Indian Railways, for which he has to clear an exam. He is now preparing for the Railways exam.*

*Anvay accesses the study material and uses his phone for preparing for the railway exam. He accesses exam related content on You-tube videos. This content supports him in his preparation for the exam.*

*He often searches for information on Google to brush up his general knowledge.*

*Anvay’s aspiration has grown and he has started learning English conversational skills through online tutorials. He says, “being able to converse fluently in English will help me in any job.”*

## *Priyanka’s****[[28]](#footnote-28)****story…*

*Priyanka has just turned 40 years old. She reflects back to the time 17 years ago when she started losing her vision. A graduate, Priyanka joined NAB around the same time and took up the job of editing. She was well settled and enjoyed her work, till personal challenges meant that she had to give up her job.*

*Till recently, Priyanka said she did not have a smartphone. The tabs on her phone were too small and she found it difficult to use. She could only make calls with it. For looking up a number of a person, she needed assistance from other people.*

*She used to use the laptop in the library when she was studying and later working. So she had to adhere to the timings there and was restricted in her access to material.*

*At present, Priyanka stays at home all day. Having moved from a full-time job to being home all day, she found it difficult to keep herself mentally occupied.*

*Priyanka says that her life changed after she received a smart phone. Though initially she found it difficult to use the touch-screen. The slightest touch caused things to jump from one thing to another. There was also delayed audio feedback which lead to the thread being lost and halted the information process.*

*Now she has become adept at using the phone and she feels it has made everything so much simpler. She is able to do many things that earlier posed challenges. The phone that she received, came pre-loaded with some voice-enabling software that enabled her to access a whole host of material.*

*Priyanka has found a new friend in books. She reads newspapers and magazines; she is especially fond of reading short stories and novels written by Munshi Premchand. Recently, she has started reading biographies. She has become a member of an online library that gives her unlimited access to many more books. This is a huge change from the limited collection of books in braille she used to read. Now that she is at home, she has no access to books in braille. Listening to lectures on you-tube and listening to music are her other newly discovered passions, enabled by the phone.*

*On the social front, she feels more connected and is in touch with her friends on phone. She calls them regularly and is also connected on whatsapp.*

*Priyanka says that having used the phone for a few months now, she has become very good at it. She has started searching for information that she requires to update her knowledge on various subjects of interest.*

*She is now beginning to feel confident of moving about on her own, using the phone for navigation. Priyanka recounts the time when she went to the metro station on her own and took a metro to reach some place at the other end of town. That has given her back her self-confidence and feels she will be able to commute independently. Now she has started exploring work possibilities and is busy emailing her CV to various offices that have advertised job vacancies.*

*Priyanka says that while others just see a phone, for her it is a ticket to independence. She is free to read, to call and do what she wants to, when she wants to. She says, “The phone is a boon; a boon that has transformed my life.”*

## *Anila’s****[[29]](#footnote-29)****story…*

*Anila is a young, stay at home mother. She completed her Masters’ Degree before she got married and did not study further. After the birth of her son she decided to stay at home and focus on the family and home. Anila says she used to feel lonely at times when she was alone at home in the morning. She says her outlook to life changed after she received her smartphone. She was not very sure about how it would help her at that time, but now it is her most important possession. Anila has many friends from college, but she had to wait for her husband to come and support her in accessing the contact details of the friend she wanted to call. With her smartphone, all she has to do is give a voice command and the number is dialed. She also remains in constant touch with them over Whatsapp. She has started learning about different things online, especially through content available on online libraries and tutorials posted on you-tube. She accesses videos on you-tube to get information on topics of her interest. She keeps reading up on digital books from online libraries and online book store and updates her knowledge about talk back feature, devices and how to optimize their use.*

*Anila interest in these things developed after attending the training session. She talks about how she is able to access any type of content that she wants. Anila has become a member of her State whatsapp group that enables her to connect with various organizations and people across the State. Besides learning about new developments, Anila has become a regular contributor to the group. She has started sharing what she has learnt about digital content and the benefit of devices shares her own experience regularly.*

*Anila specially stresses on the fact that she regularly accesses content on her device to teach her son. She is extremely happy about being able to teach her son now.*

*Comparing her life before she received the device and now, Anila says there has been a sea-change and her self-esteem, confidence and level of independence have sky-rocketed. The perception of others, towards her has also changed for the better and she can feel a new-found respect, putting a bounce in her step!*

## *Viddhi’s* ***[[30]](#footnote-30)*** *story…*

*Viddhi is pursuing her Chartered Accountancy and is preparing for her final exam. Doing all the math that she has to study for CA requires her to use Microsoft word, excel and braille books.*

*She is a student who is very good in Maths and was interested in science stream. Viddhi was keen to pursue the science stream after school, but due to lack of accessible content and difficulties posed in participating during lab experiments, she had to leave the science stream. Being good at math, she then opted for the commerce stream.*

*She has a Laptop, phone and RBD.  Viddhi uses her laptop for writing her exams. She prefers using the laptop instead of a scribe to write her assignment and examinations. She feels that writing exams, independently, using her laptop has helped her score more.*

*Viddhi is fond of reading and becoming a member of Sugamaya Pustakalaya and Bookshare has helped her access many books.*

*However one of the challenges that she is facing right now is that many of the accounting software, currently being used are not accessible. So she is unable to use them. The other challenge is that the books and her course content available from mainstream sources are in PDF making it inaccessible using a RBD. While she has managed to convert some of the content into text format, most of it still remains in PDF. Viddhi listens to few digital books using screen reading software, though she prefers reading them in braille using RBD. “ Reading books using E-text where I can only hear using audio, I miss out many minute details like punctuation marks, brackets, underline etc.  For me hearing audio books four times is equivalent to reading braille once.  Braille reading is registered more clearly in my mind”. So she is very happy to have RBD which she can carry anywhere and read.*

*To support her in overcoming the challenge of inaccessible course content, Saksham is supporting her. They have started converting the content in PDF, shared by Viddhi, into text that she can access on her RBD.*

## *Manish’s* ***[[31]](#footnote-31)****story…*

*Manish is a resident of a town in the upper reaches of Himachal Pradesh. Manish received a Smartphone and a RBD recently. He says that he is already totally dependent on them. ‘If I had received these devices a few years ago, I would have opted for Political Science or History, as those are the subjects of interest to me. The reason I could not opt for them is that the course content wasn’t available in accessible formats. I am presently pursuing a MPhil in Music.”*

*At present Manish is preparing for the NET exam and is able to access all relevant content through his devices. He says that the device has made it very easy to read and write notes and he is able to carry it around while travelling. Earlier he had to take notes on his braille slate and stylus, which was cumbersome. He remembers losing the stylus many a time, leaving him totally stranded. He hopes that the RBD can be wi-fi enabled soon as it will make the process of downloading content and accessing it in braille much easier.*

*Manish also uses his smartphone for navigation purposes and he is totally independent now. Using both the devices, he accesses digital content from various online sources and reads course content in braille, when he wants. He feels, ‘Asking for assistance from someone, to access content, is a challenge in a world where there is no time for others.’*

## *Ravi’s* ***[[32]](#footnote-32)*** *Story…*

 *Ravi is a first year student at college. He uses his smartphone as a tool for accessing course content through the Sugamaya Pustakalaya and Bookshare. Ravi says, “ The best part of it is that I can use my device for recording lectures in class. This has helped me review the topic at home and has enabled better retention. The only challenge that arises is when the teachers move around the classroom while teaching! Now that they are aware that this poses a challenge, they are more understanding.*

*“The other big shift has been in my overall sense of independence. I use Google Maps and feel very independent. I have also started making online payments using Paytm and Google Pay. All this has empowered me tremendously.”*

*Earlier, Ravi used to access content only in hardcopy braille. Reflecting back to the time when he heard about this project under which he could get a device at a subsidized cost, Ravi says he was not very sure about whether it would be worth spending that much money.*

*Today after using it and seeing the tremendous benefit, he recommends it to all his peers on his whatsapp groups.*

*“ The biggest sense of independence is being able to read on my own. Earlier I had to request my friends to read to me and wait till they were free. Though I am extremely grateful to them for having supported me all this time, there were times when being read to posed a challenge. There were people who were not able to pronounce certain words properly, some were not very fluent readers etc. These affected my comprehension of the text. Now I am able to read on my own, at the time of my convenience and can read and re-read the text as many times as I need to! ”*

*Ravi goes on to share, “ I have been taking online tutorials and brushing up my computer skills ever since I received the device and the training. Today I have leant so many things that I have started teaching. I teach computer skills to a Doctor!’*

*“With my computer skills and access to information and training, I want to specialize in the IT sector!”*

## *RUDRA’s****[[33]](#footnote-33)*** *STORY…*

*Rudra wants to become a researcher and specialize in science and technology. At present he is in first year of college. Rudra says, “ The smartphone I received has completely transformed my life. Earlier I needs to seek assistance in moving around the city, now with the phone, I use Google Maps for navigation. I book Uber or Ola cabs to go out. I also order food from Uber Eats, whenever I like. I have become more social as a result. This has also helped connect me with many more people and the interaction with a wider set of people has broadened my horizon. I suddenly feel more connected with the world.”*

*“ I am able to read not only my course content, but also read books for leisure-time reading, newspapers etc. I also read the latest research in my area of interest ie science and technology. The best part is I am free to read whenever I want, just like all my peers!”*

## *SONIKA’s****[[34]](#footnote-34)*** *STORY*

*Sonika is a special educator in a school for persons with vision impairment. She uses a smartphone, Daisy player and books in braille in her work. Sonika says, “ I prepare my notes for conducting classes on DAISY player. I also use a Sonic labeler for sorting printed books. With my smartphone, I am able to read printed texts using OCR app.” Sonika enjoys reading books for preparing for her lectures, novels and stories and feels her dependence upon others has diminished. Earlier her son used to support her in accessing content.*

1. [ Note: the term ‘vision impairment’ is used here to include persons with blindness as well as those with low vision ] [↑](#footnote-ref-1)
2. Details regarding the Training Session follow on page 5 [↑](#footnote-ref-2)
3. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-3)
4. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-4)
5. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-5)
6. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-6)
7. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-7)
8. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-8)
9. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-9)
10. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-10)
11. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-11)
12. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-12)
13. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-13)
14. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-14)
15. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-15)
16. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-16)
17. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-17)
18. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-18)
19. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-19)
20. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-20)
21. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-21)
22. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-22)
23. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-23)
24. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-24)
25. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-25)
26. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-26)
27. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*

 [↑](#footnote-ref-27)
28. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-28)
29. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-29)
30. *The name has been changed to protect identity. Permission has been taken from the individual to write about her life journey, which has been presented as it is. The individual’s life story has been written in as close to what she said and in many places she has been quoted verbatim.*  [↑](#footnote-ref-30)
31. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-31)
32. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-32)
33. *The name has been changed to protect identity. Permission has been taken from the individual to write about his life journey, which has been presented as it is. The individual’s life story has been written in as close to what he said and in many places he has been quoted verbatim.*  [↑](#footnote-ref-33)
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