Transition to Employment
Lessons from the Philippines, Indonesia & Vietnam

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Publication Team:
M.N.G. Mani
Marlo Lucas
Aria Indrawati
Dang Hoai Phuc

Senior Advisor:
Larry Campbell
Partner Organisations

**Resources for the Blind, Inc., Philippines**

RBI was started in the Philippines in 1988 with a goal to develop and implement programs that will remove the hindrances, and to provide services, training, materials, and equipment needed in order for those who have visual impairment to reach their fullest potential in life. The main office is in Cubao, Quezon City, with two regional offices in Cebu City and Davao City, which serve the central and southern Philippines, respectively.

Website: [www.blind.org.ph](http://www.blind.org.ph)

**Pertuni (Indonesian Blind Association), Indonesia**

Pertuni is a national blind member based organization in Indonesia and it has its chapters in 33 provinces and branches in 210 cities/districts throughout Indonesia. The Pertuni plays an important role in lobbying for the rights of persons with visual impairment. In 2015, Mrs. Aria Indrawati was elected to serve as the first female president of Pertuni and she has been re-elected to serve another term.

Website: [www.pertuni.or.id](http://www.pertuni.or.id)

**Sao Mai Vocational & Assistive Technology Center for the Blind, Vietnam**

Sao Mai Vocational & Assistive Technology Centre for the Blind was established in 2001 with the main goal of promoting the usage of assistive technology in education and employment of persons with visual impairment. The Centre has also offered consultancy to other organisations in assistive technology.

Website: [www.saomaicenter.org](http://www.saomaicenter.org)
MESSAGE

Many of us will remember our first job and the satisfaction of receiving our first pay packet. Having a job brings a sense of pride and personal achievement and builds self-esteem. A steady income brings financial security and the ability to live independently and contribute to family and community. The United Nations Convention on the Rights of Persons with Disabilities recognises the importance of work and employment for persons with disabilities while noting that work environments should be open, inclusive and accessible. However, research tells us that persons with visual impairment face barriers to employment which are associated with employer attitudes and business practices. Such barriers result in inaccessible work environments and low employment rates for persons with visual impairment when compared with the general population.

ICEVI is proud to contribute to the global discourse on inequality in employment for persons with disabilities. Our flagship higher education program in East Asia, in partnership with The Nippon Foundation has been supporting young people with visual impairment to transition from school to higher education and employment since 2006. In this publication, Transition to Employment, we showcase the positive impact of the program on the employment capabilities of young people with visual impairment in the Philippines, Indonesia and Vietnam. These young people have paved the way for others with visual impairment to achieve in education and employment. We sincerely hope their stories and the approach adopted by ICEVI, The Nippon Foundation and our partners, will serve as a source of knowledge and inspiration for governments, higher education institutions, and potential employers of individuals with visual impairment.

On behalf of ICEVI, I extend my sincere gratitude to Mr Sasakawa and the staff of The Nippon Foundation for their commitment to advancing the right of children and young people with visual impairment to equity in education and employment. I acknowledge with thanks the publication team, Dr M.N.G. Mani, Marlo Lucas, Aria Indrawati, Dang Hoai Phuc, and Dr Larry Campbell, and our partner organisations that feature in this publication: Resources for the Blind Inc, Philippines; Pertuni, Indonesia; and Sao Mai Vocational and Assistive Technology Centre for the Blind, Vietnam.
My involvement with the higher education project has been one of the most rewarding professional experiences of my career. It is with pride that The Nippon Foundation supported higher education program implemented by ICEVI since 2007 has enabled more than 2800 students with visual impairment to complete their graduation. The ICEVI and the Overbrook Nippon Network on Education Technology (ON-NET) brought out a book titled “Partnerships For Change: National Strategies - Regional Collaboration” that highlighted the profound impact made by the services of The Nippon Foundation on the lives of persons with visual impairment in the East Asia region. One of the challenges addressed in the publication is transition to employment.

The higher education project through the partners Resources For The Blind, Philippines, Pertuni, Indonesia and Sao Mai Centre for The Blind, Vietnam has been addressing various components of employment since 2016. The project team, in consultation with The Nippon Foundation suggested that preparation of a publication on Transition to Employment using the practices of Philippines, Indonesia and Vietnam would be a good resource for individuals and organisations that are trying to augment employment avenues for persons with visual impairment. The experiences narrated in this book clearly underline the factors that should be in place for successful employment of persons with visual impairment. The publication also highlights how our partners addressed the employment challenges during the recent COVID pandemic. The anecdotes shared by visually impaired individuals through this book not only enlighten the reader about the confidence of visually impaired individuals but also their becoming young role models in the field.

It has been a pleasure to work with the project partners in bringing out this publication and my special thanks are due to the members of the publication team Aria Indrawati, Marlo Lucas and Dang Haoi Phuc who are remarkable individuals with great commitment in the project. Dr Larry Campbell has been the architect of the higher education program and I am personally happy to carry on the significant work done by him in empowering persons with visual impairment in the East Asia region through The Nippon Foundation supported higher education project. I also thank Dr Frances Gentle, President ICEVI and the entire Executive Board of the ICEVI for supporting the higher education project for over a decade.

Our profound thanks are due to Mr Yohei Sasakawa, Chairman of The Nippon Foundation who is a visionary leader in empowering persons with disabilities. ICEVI has been privileged to work with The Nippon Foundation and we are sure this partnership will go a long way in contributing to positive influence in the sector. Finally we thank Mr Yosuke Ishikawa and Miss Eriko Uchiyama of The Nippon Foundation who are staunch supporters of higher education project giving us invaluable administrative support in implementing the project as well as in the publication of this book.
MESSAGE

For more than 50 years since the establishment of The Nippon Foundation, we have made support for people with disabilities one of the pillars of our activities, with projects in Japan and abroad aimed at helping people with disabilities participate more actively in the society. We established scholarship programs at Gallaudet University and Rochester Institute of Technology in the United States to support deaf and hard-of-hearing students from around the world who have a desire to learn. In collaboration with the Chinese University of Hong Kong, we developed a sign-language dictionary that is essential for deaf education. In six Southeast Asian countries, we established schools for training world-class prosthetists and orthotists. For people with visual impairment, in particular, we have for over 30 years worked with ICEVI and Overbrook School for the Blind in the United States to establish a network within Asia, use ICT to expand opportunities for visually impaired students to study at higher education level and improve their environment for study, and promote projects for employment support.

We provided support in various countries and trained more than 3,000 leaders who themselves have disabilities. But on the other hand, we know that many people with disabilities, even after graduating from universities, could still not be employed in the jobs they wanted due to their disabilities and even if they were employed, many could not bring out their full potential and ended up quitting their jobs. While we have provided direct support to persons with disabilities and tried to influence public institutions, that alone is not enough to change society. Unless we can bring about change in the business sector that makes up the mainstream in society, we cannot bring about a major change. With this in mind, we started to support The Valuable 500 (V500) that was launched at the World Economic Forum in Davos in 2019 as a network of 500 global companies to promote participation of people with disabilities in society on a global scale. Currently, we work with V500 to promote inclusion of people with disabilities through employment and the development of products and services targeted to customers with disabilities.

Right now, the momentum is building to promote greater participation of people with disabilities in society. For those of you students with visual impairment reading this book, I hope that the experiences of your predecessors in overcoming hardships to graduate from universities and become active members of society will serve as a useful reference as you strive to realize your own dreams. At the same time, I hope that you yourselves will also
become role models for the future. For those of you in the education and business sectors, I hope that you will again come to understand that people with disabilities have the motivation and capacity to work and if given the right support, they can excel equally with those without disabilities. I strongly hope that you will cooperate actively to increase employment opportunities for people with visual impairment.

I would like to pay tribute to Dr. Frances Gentle, President of ICEVI, for her extraordinary efforts in publishing this book, and to Dr. Larry Campbell, President Emeritus, ICEVI and Senior Advisor, Higher Education, and Dr. M.N.G. Mani, CEO, ICEVI for their dedication in The Nippon Foundation’s project over many years. I would also like to sincerely thank our partner institutions, in particular Resources for the Blind, Inc., Pertuni, and the Sao Mai Vocational & Assistive Technology Center for the Blind, for their hard work and efforts. Thank you very much.
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Prelude
A research study conducted by the International Council for Education of People with Visual Impairment (ICEVI) in 2005 was an eye-opener to the plight of higher education of persons with visual impairment in the East Asia region. The research revealed that less than 3% of students with visual impairment ever made it into higher education. Key reasons for this include: - the absence of role models, -poor legislative measures ensuring empowerment of persons with disabilities, - limited availability of accessible learning materials and lack of awareness among employers about the capabilities of persons with visual impairment, to name a few.

While each of the factors must be addressed in detail, the ICEVI chose an evolutionary approach to tackle the larger issue related to education and employment; the empowerment of persons with visual impairment and the effective use of assistive technology. Our primary goal was to reduce the existing barriers impeding access to higher education and bring as many qualified and motivated visually impaired students as possible into the higher education system, thereby, creating role models who could inspire parents, policy makers and the general public and encourage young visually impaired learners to reach beyond what they may have previously felt was possible.

The Nippon Foundation, recognizing the potential of this evolutionary approach to expanding access to higher educational opportunities for visually impaired students, agreed to support the development of a pilot project in Indonesia in the 2006-07. Larry
Campbell, the then President of ICEVI launched the project with the Indonesia Blind Union and Mitra Netra, a Jakarta based NGO founded by blind individuals and guided its implementation for more than a decade.

The initial years were challenging for both visually impaired individuals and the universities they collaborated with. However, demonstration of the skills and learning potential of visually impaired students gradually influenced more positive perceptions of their capacity to excel in higher education. The system opened its doors expanding enrollment of visually impaired students in two pilot sites providing ICEVI and The Nippon Foundation with important lessons that quickly led to the expansion of the program in Indonesia and beyond.

The project was extended to Philippines and Vietnam in 2008, followed by Cambodia in 2010, Myanmar in 2013, Lao PDR in 2014 and Mongolia in 2017. To date, around 2880 visually impaired individuals have completed their higher education coursework; many moving onto employment in sectors where the doors were previously closed.

In June 2021, ICEVI, Overbrook International and The Nippon Foundation released “Partnerships for Change: National Strategies - Regional Collaboration” at the World Blindness Summit attended by more than 3000 delegates from over 150 countries. This publication traces the program’s evolution from a small leadership development program into an advanced one focused on expanding access to education and empowering blind youth through the effective use of access technologies for persons with visual impairment.

This publication, which was released by Mr. Yohei Sasakawa, Chairman of The Nippon Foundation was converted into E-pub format and circulated to over 4000 individuals and organizations and is also posted on the websites of ICEVI www.icevi.org and the Overbrook International Program www.obs.org.
This creative collaboration between ICEVI, The Nippon Foundation and our local partners continues to open doors, create impact, change lives and reveal what it means to be blind in the East Asia region.

One important issue raised in “Partnerships for Change” was the critical period of transition from education to employment, which organizations throughout the world are grappling with. Though increasing numbers of persons with visual impairment have gained access to formal education, securing and maintaining open market employment commensurate with one’s talents and interests is still very elusive for many. The critical challenge before us is how we can change this scenario.

We are still far from satisfactory approaches to bridging that wide and deep gap between education and employment. However, as we discussed the challenges still before us we realized that there are some very important lessons we have learned; lessons we hope will stimulate discussion with other individuals and organizations that will lead to better ways closing the gap.

A series of deliberations arranged with the project partners, visually impaired individuals, their organizations and employers, has led our publication team focus on three areas that we feel are contributing significantly to the successes in our regional level work, as we intensify our attention to assisting visually impaired persons in bridging that deep and critical gap between education and gainful employment. Among the critical gap areas, the following significant topics have been dealt with in this publication.

STEM area as a base for widening options of employment

During the early years of the project, options for selecting diversified courses were limited as institutions mostly offered only conventional courses such as languages, humanities, education, etc., to visually impaired individuals. The first challenge was to break this barrier proving that visually impaired students could learn subjects dealing with Science,
Technology, Engineering and Mathematics (STEM) so that their job opportunities do not become limited to the traditional areas, exclusively meant for visually impaired individuals. The drive of the higher education project was to prepare visually impaired individuals to compete in the open job market and therefore, the equity in selection of courses became imperative.

**Adapted Math curriculum**

**Shifting focus to preparation for employment**

By 2015-16 the focus of the higher education project gradually shifted towards preparation for employment. The project partners used their networks to place the graduates in suitable employment commensurate with their skills and qualifications. Brainstorming sessions revealed that the project should not only focus on developing the requisite qualifications for jobs but also seriously look at the whole gamut of soft skill development.

**Accessible materials and employer support**

The higher education project strongly believed that real advocates for the promotion of employment among visually impaired individuals are the employers and therefore, regular interaction between the project partners, visually impaired individuals and employers were
facilitated in terms of employee internship, job fairs etc. It is also quite evident that availability of accessible materials in terms of software as well as devices is one of the vital ingredients in securing successful employment. Besides addressing the dimensions of accessible materials and employer support, the project partners also had to work with the Governments in formulating proactive legislation to support education as well as employment of persons with visual impairment.

Though all project partners have focused on these areas, ICEVI worked with specific partners in developing mastery in a particular expertise in order to assist other project partners and this model worked well for inter-regional networking and collaboration which we had clearly explained in our publication “Partnerships for Change.” For the STEM curriculum, we will primarily use the good practices of the Resources for the Blind, Philippines. The soft skills model initiated by our project partner Pertuni, Indonesia is also described in detail followed by accessible materials and employer support by our partner Sao Mai Centre for the Blind, Vietnam.

With this broad overview of the process adopted by the Higher Education Project in the transition to employment, we will now elaborate country specific experiences in the following chapters.
STEM area as a base for widening options of employment
As we moved into the 21st century, professionals with visual impairment have eventually increased in number. Educational development for people with visual impairment has become optimal as an effect of unveiling their capacities through the aid of assistive technologies and the initiatives of committed people who work in promoting the education of the blind and visually impaired. From the usual approach of exempting them to comply with some academic requirements due to inaccessible instructions and materials, there have been students with visual impairment who are fully functional and compliant with the same standards set for their sighted classmates. This has been made possible as a result of assistive devices for learners with visual impairment. From the usual career opportunities for Filipinos with visual impairment in the last decades which have centered on the humanities such as performing arts, language, philosophy and theology, and social sciences such as economics, political science, social work and psychology, we have been witnessing successful visually impaired students in settings which relate to formal sciences such as Computer Science, Mathematics and Applied Sciences.

This gives a clear picture that a technological orientation of Filipinos with visual impairment increases their motivation toward academic and employment success. This is evident from the development or restoration of the academic functioning of persons with visual impairment who, since their early childhood education, have been receiving interventions for coping with challenging academic subjects such as those that relate to Science, Technology, Engineering and Mathematics (STEM). It is very encouraging to witness the predilection of many Filipinos with visual impairment to pursue STEM-related career paths that are developing as a range of assistive technologies helping them in their pursuits. Today, we frequently see students who, not only take STEM-related subjects as part of their curriculum, but also choose academic pathways that lead to STEM-related professions.

Increasingly, students are demonstrating their capacity to succeed in STEM professions, which must lead the education sector to examine its readiness to make the required adjustments in attitudes and instructional approaches.
We see today a number of Filipinos with visual impairment who are successful in STEM-related professions. But before they succeed; they have first gone through troublesome academic challenges, especially denial of inclusion in school due to teachers’ ignorance of appropriate management of students with visual impairment in class. It is absolutely because educators once believed that STEM is intricate and is, therefore, cumbersome for those who are without sight. Subscribing to such assumption, students with visual impairment begin to look for courses in college which have low emphasis on STEM to avoid the difficulties or challenges that they may encounter. While STEM is perceived to be difficult to some who have less awareness on how to make it accessible, others have tested the feasibility of handling and overcoming it through their high level of engagement in technologies.

Even before the Philippines made an improvement on its educational system through the adoption of the K-12 program implemented in 2012, Science and Mathematics have already been inescapable in school. Before assistive technologies became available, it used to be a fact that students with visual impairment hate Mathematics and some branches of science such as Chemistry and Physics because of its intricate processes.

Perhaps one of the earliest technologies which helped many learners with visual impairment in calculations is the ‘abacus’. The abacus is a simple yet so significant hands-on tool for calculation for learners with visual impairment because it helps them perform the fundamental operations in Mathematics in various kinds of numbers such as whole numbers, fractions and decimals.

Ma. Aleeia Jose IV Maclit of Marikina City, Grade 12 student of Elena High School, recalled her troubles in solving basic Mathematical operations during her elementary and high school years and how assistive technologies like the abacus had helped her overcome her troubles:

“I usually found it hard solving numbers especially when the given number would involve three-digit ones. At such times, I would no longer be capable of solving it mentally; otherwise, I would lose track while I mentally solve it. The abacus has truly helped me overcome this kind of difficulty.”
Maclit also acknowledged that her conversant use of abacus necessitated a wide knowledge about the Nemeth Braille code for her to be able to communicate her outputs very accurately to her output transcriber:

“I had to be well-versed on the use of the Nemeth Braille code. However, even if my answers are correct, there is still a chance that it would go wrong because of an imprecise transcription resulting from my wrong use of the code. That happened to me once that is why I diligently learned on it from then on.”

Braille in STEM

Braille is helpful to the visually impaired especially in taking down notes during class discussions, memorizing long intricate equations and formulae such as the quadratic equation in algebra, formulae for getting the areas of 2D and volumes of 3D spaces in geometry, for breaking down compounds in Chemistry, and for calculating the speed and velocity in Physics respectively. These are only few among the various uses of Braille that enable learners with visual impairment cope with the challenges of taking the STEM subjects. In fact, braille has been treated informally by some learners with visual impairment, creating their own codes which only they can understand.

Inclusive education for people with visual impairment will only be at its fullest when they are not only brought into regular class settings but also when they are engaged or participate in class activities in a manner that will help them acquire learning similar to those of the sighted in a non-discriminatory approach. And to some schools, one of the most challenging situations in engaging blind learners is a conduct of an experiment in laboratories. And there have been different conditions experienced by learners with visual impairment in this academic aspect:

- some are not included in the activity and are only sitting alone in a corner;
- some are in the laboratory only to hold the beaker or the microscope or the edge of a tape measure for the group;
- Some are engaged from the start of the scientific method up to the formulation of the conclusion with the aid of any reasonable accommodation approach.

Whichever condition every learner with visual impairment is in, all seekers for quality learning would consider the third condition optimal, and one of them is Andrea Estrella of Quezon City.
Interview with Andrea Estrella

Andrea Estrella, a Grade 11 student at Quirino High School, is one among those who struggled in participating in laboratory experiments inclusively. She compared her situation during which she received accommodation inside the laboratory and during which she had not:

“During those times when I was not included in laboratory activities, I truly felt I do not belong in the class. Such circumstance really lowers my esteem. You are just sitting at the side and feel what is happening around. Out of my desire to participate and learn, I tried to get myself involved and asked my classmates on what is happening during the experiment, so that I would be able to gain idea.”

Estrella further exemplified how her Science teacher accommodated her during laboratory experiments aside from the help coming from her classmates:

“When samples of a plant cell and an animal cell are placed in the microscope respectively, my teacher would describe to me their appearances. And when they are treated with a chemical, she would describe to me the changes happening in the cells. Through this, I am not only able to come up with my own conclusion out of the phenomena but also able to keep pace with my classmates.”

Learners with visual impairment are not placed in school to be left desperate for learning lessons they cannot access to. Teachers must be there to make learning process accessible. There are also some who would become hesitant to admitting same person after finding out that his preferred profession is in line with STEM, doubting on the capacity of the visually impaired person to surpass disability-induced challenges that will be encountered in the course of time.
Mikko Ashis Calipayan

Mikko Ashis Calipayan of South Cotabato, second year college student who is taking up Bachelor of Secondary Education major in Mathematics, reasoned out upon his enrollment in college that he can still manage the course and its requirements despite his low vision when the school administration was hesitant to admitting him to the program during their first encounter with him:

“Mathematical concepts are not difficult to understand. At first, I hated Math. But as time passed by, I have learned to love it. Math had only become difficult to me because, first, I lacked the assistive devices needed, and second, my teachers lacked awareness on the proper management of students with visual impairment.”

Math major Mikko Ashis Calipayan has a story to share regarding his experience in communicating his struggles to his Math teacher and how he opened a possible way.

Even during the COVID-19 pandemic where blended learning is observed, Calipayan never failed to inform his Math teachers at the beginning of every academic semester regarding his situation and his desire to seeing his teachers being descriptive during online class discussions. When teachers may have provided inaccessible examination materials, Calipayan said he usually asks his teachers to give him a leeway in terms of time, so that he can have ample time for accessing thereto.

STEM & Special Education (SPED)

Now that academic curricula in the country’s education system have a high thrust for STEM, and technology drives such thrust, there is a need for increase in the technological awareness and expertise among people with visual impairment, in order for them to be able to keep pace with the sighted population.

For students with visual impairment, STEM is a demanding curricular area; and, in order to meet the demands thereof, assistive technologies have been made available. In basic education, braille and audio-formatted books and other references are made available to students with visual impairment. This will help in having access to braille books and enable learners with visual impairment to picture out visual data and representations,
especially in Science and Mathematics, thereby allowing them to have an exact picture of and a full understanding on the subject matter. For coming up with visual outputs as well, students with visual impairment are assisted by adaptive Mathematical tools such as graph board, braille protractor, calculator with speech, and other stencils. On the other hand, braille users necessitate professional SPED teachers which will not only improve the braille literacy of students with visual impairment but also ensure that outputs thereof in the class are transcribed in print accurately. Thus, we see a number of professional SPED teachers in many elementary and secondary schools and even in some higher education institutions who assist students with visual impairment in coping with difficult subjects like those that relate to STEM.

In most schools, one-hour session is allotted to students with disabilities under the facilitation of a SPED teacher to keep track on the status of such students who are mainstreamed in regular class setting. But for students with visual impairment who do not have SPED teachers respectively, it is usually a difficult condition. Braille-using students should have more assistive devices which will enable them access Math contents and come up with well-written Mathematical expressions independently. Besides, they should also be trained on different application software which will maximize their capacity in overcoming challenges in STEM subjects.

Screen Reader support

Perhaps the most used assistive device among students with visual impairment in the Philippines is the computer with enabled screen reader support. Students in both basic and higher education heavily rely on computers in performing academic subjects such as Science and Mathematics. Having teachers who use presentations in soft copy format during class discussions, students with visual impairment easily keep up in class especially if such presentations are made available to them. It then becomes convenient for them to study on their lessons using their computers with screen reader support which enables them to navigate on the device and accessibly open and read the file to study. Through the use of computer as substitute to Mathematical stencils, they are able to manage in coming up with outputs which involve visual representations through the aid of different application software.

The development of screen readers, is propelling students with visual impairment to maximize participation not only in computer laboratory activities but, more importantly, in
almost all academic subjects especially in Science and Mathematics which are perceived to be difficult to handle thereby. What is more amazing to think about is that, while some students with visual impairment treat computers as a mere tool for surviving STEM-related subjects, some students choose computer technology as a career path. This increasing professional venture is not only inspired by the birth and evolution of web accessibility but, in most cases, by the rising demand for manpower in BPO and other computer-driven industries and the tested employability and productivity of persons with visual impairment therein.

**Interview with Elizier Obamos**

Engr. Elizier Obamos, faculty member of STI College Pasay, who has taught college students with visual impairment several times, suggested an important tip for teachers and administrators who encounter enrollees with visual impairment especially in academic programs which are perceived to be difficult to surpass by blind students:

“It is very important to ask a student with visual impairment of his background, about his capacity, and about the things he has. It is sad to think that schools’ first impression whenever they encounter enrollee with visual impairment is that he needs special facility. Whereas, if we ask him first and allow him to speak, we will discover that he no longer needs special facility and that he can survive in his course of choice through the aid of the things that he has.”

“I have handled a number of visually impaired students in my programming subject, and so far, I did not experience difficulty in teaching them because they were good,” Engr. Obamos proudly revealed.

An attempt to enroll in STEM-related program should not cause educators to shake. Engr. Obamos looked back on his experience during his first time to have encountered an enrollee with visual impairment who wanted to take up Information Technology and what he thereafter did when he encountered technical difficulty faced by such student in one of his classes:

“During enrollment, I asked him how he can cope up in the class. He said he is using screen reader software which according to him is called JAWS. I searched on it on the internet and I found out that he can possibly cope up using it... There was an instance when I was teaching Linux programming,
JAWS was not at that time compatible with Linux OS. So, what I did is, I searched for a possible way how he can access to it. Luckily, I was able to attend an exhibit in a mall where different kinds of software for the blind were introduced. So, I approached and asked on possible software which will make a certain programming language accessible to the blind. And they told me about it, so the student did his part and downloaded the said software.”

Teaching students with visual impairment according to Engr. Obamos is advantageous to educators.

“While my visually impaired students were learning from me as their teacher, I was at the same time learning from them because I got to know new things which I do not usually encounter on a day to day basis,” said Engr. Obamos.

He also added that having a student with visual impairment in the class is part of class diversity and is an opportunity where a teacher can learn new teaching strategies.

When an untrained teacher gets to have a student with visual impairment in the class, he/she must not immediately presume that both of them do not know how a blind student must be treated. It is a fact, however, that some students with visual impairment do not have the confidence to communicate themselves; thus, several personality development trainings have been conducted for them so that they may be able to build self-confidence which will help them relate to others especially in the context of student-teacher relationship.

“I do not allow my students with visual impairment do nothing in the class whenever we have an activity; so I asked for help from our school’s SPED coordinator on what to possibly do with such students for them to be able to participate.” said Laurie Zacharias, Science teacher at Kahayan National High School of Caloocan City, Metro Manila.

Zacharias’ view

According to Zacharias, they modified some science apparatuses in their school for the advantage of their students with visual impairment. Cylinders and beakers were labeled with large prints and braille marks, so were measuring tools and devices. So when the class performs an experiment inside the laboratory, students with visual impairment can access to the apparatuses and participate in the activity.
“Since our school has availed of a talking Venire Lab Quest, the participation of our students with visual impairment has, in effect, been improving” Zacharias added.

Through the use of their computers with screen reader support, they are also able to record and translate data in writing.

When the pandemic hit the country where classes had to shift to virtual setting, Zacharias believes that science has become more accessible to students with visual impairment. Because modules are, most of the time, provided in soft copy formats, students with visual impairment can easily access thereto even to images embedded in a file.
C. RBI and its partners in making STEM accessible to students with visual impairment

In the mission of making STEM completely accessible to students with visual impairment, the Resources for the Blind, Inc. (RBI) in partnership with the International Council for the Education of People with Visual Impairment (ICEVI), The Nippon Foundation, and other organizations, commit to providing different modes of intervention and working with other institutions sharing their goal of education for people with visual impairment. This commitment is anchored on the inalienable right of students with visual impairment to inclusive education and inclusive employment. This is achieved through awareness-raising and capacity-building to not only the people with visual impairment but also the people in their social environments.

For students with visual impairment, STEM must be made accessible. It is for this reason that the Resources for the Blind and its partners consider STEM as an area of concern which, in effect, leads to the inclusion of this curricular area into its roster of programs and services. These different interventive programs of the RBI include direct provision of resources and trainings and seminars to various stakeholders involved in the educational welfare and development of students with visual impairment in the context of STEM. Additionally, policy advocacy and partnership with other advocacy groups have been established to strengthen the mechanism for achieving the end goal.

RBI works ambitiously in making STEM accessible to students with visual impairment. This has been complemented through the partnership of the ICEVI and The Nippon Foundation who like the RBI, see STEM as a very important foundation for employment and have thus committed to strengthening the effort for such curricular area. The RBI is optimistic on the implementation of STEM programs for students with visual impairment in the Philippines because, unlike during the early years of its education initiatives since 1991, it is no longer difficult to convince educators in private and public schools that students with visual impairment are capable of learning academic subjects such as the STEM in an inclusive setting.

Assistance with print books

RBI does not overlook the importance of providing resources to students with visual impairment both at the secondary and tertiary levels. Where there is STEM curriculum, there are a number of assistive technologies. For many years now, the RBI has been providing braille and large print books to students with visual impairment in elementary and high school for free. Using its resources, the RBI reaches out to students currently enrolled in basic education and provides them with braille books for references which even
their teachers are using so that students can keep up in class. To maximize this initiative, the RBI pursued partnership with the Department of Education (DepEd) in the production and distribution of braille textbooks and other educational materials for free to students with visual impairment in public elementary and high schools through the Philippine Printing House for the Blind (PPHB). Pioneering in the production of braille books and other references in the Philippines, the RBI saw the potential maximization on the production and distribution of these educational materials through the resources of DepEd, so it provided the Department with needed equipment and technical assistance for the expansion of such project. This partnership has widely opened the way for students with visual impairment in basic education to advance in their study. On the other hand, optical devices have been provided as well by RBI to students with visual impairment who can still manage reading printed books and other reading materials through the use of low vision or magnification devices.

Loans on assistive devices

Truly, provision of assistive technologies is seen as a significant intervention for the enhancement of the academic functioning of students with visual impairment especially in challenging STEM subjects. To augment the services provided to its blind clientele system, the RBI developed a loan program for students with visual impairment on certain assistive devices necessary in their study. Under certain terms and conditions, it allows a student with visual impairment to borrow devices such as victor reader stream or other digital audio player, scientific calculator with speech, net book or laptop with screen reader support, braille note taker, video magnifier, or other available devices until such a student has finished his undergraduate or even graduate study. This loan program is highly beneficial to students with visual impairment who belong to the marginalized sector in society. To also protect the continuity of the program, a loan-to-own program on select assistive devices may be taken as an option where a student with visual impairment pays for a specific assistive device he wants to avail of in an installment basis and without profitable interest in any form. This is to ensure that students will have a sense of ownership on the device and that the cycle of the program.
implementation continues even after funders cease to support or exist. Anchored on the principle that education should not be made expensive to people with disabilities, this loan program helps students with visual impairment address concerns relative to affordability which comes next to accessibility.

**Contribution of Bookshare**

To widen the reservoir of learning materials for students with visual impairment, RBI partners with BookShare USA, a non-profit e-book library for people with print disabilities, and seeks to grant subsidy to students with visual impairment who wish to apply for membership thereto. RBI recognizes the importance of membership of a student with visual impairment to BookShare as it offers a variety of electronic books which such a student is able to have access to, upon the approval of his membership application. So, instead of going to public libraries and wishing for available books in accessible formats, a student with visual impairment who is a member to BookShare just opens his activated account therein, searches for books or other related references which are already made accessible for him, and downloads them for his perusal using his computer or other available device suitable to the file format he downloads.

**Marrakesh Treaty**

To expand the sources of accessible reading educational materials for students with visual impairment, the RBI lobbied for the accession of the Philippine Government to the Marrakesh Treaty, an international treaty among countries to facilitate access to published works for persons who are blind, visually impaired or otherwise print disabled. Seeing its capacity to influence the Office of the President towards the ratification of the Marrakesh Treaty in the Philippines for the advantage of Filipino students with visual impairment, the RBI pursued partnership with the Intellectual Property Office (IPO) of the Philippines and, with the partnership of the latter, began to mobilize stakeholders including local publishers, legal personalities, school faculty members and administrators, people with visual impairment, and other concerned individuals and organizations in the country, promote awareness thereto on matters relative to the treaty, and solicit support there from in order to bring a unified voice for the ratification of such treaty. A series of fora and collaborations carried out by the RBI and its partners have effectively fruited accession of the Philippines to the treaty whereby students with visual impairment see a hope for a wide access to published books and other materials they need to be able to keep up in class and excel.
Not only reading educational materials have been accessibly made for students with visual impairment. The fact that STEM subjects in basic and higher education necessitate and utilize tools and equipment for understanding concepts and producing academic outputs moves the RBI and its partners to the production and distribution of accessible 2D and 3D Math and Science materials to students with visual impairment, as allowed, and to schools where such students are enrolled in. For Mathematics, students with visual impairment are provided with adaptive tools such as graph board, braille rulers and protractors, Cartesian plane, geometric lines and shapes and spaces, and other Mathematical stencils which all collectively and individually have their means for enabling such students to understand Mathematical concepts and come up with outputs which involve visual representations. For Science, schools where students with visual impairment are enrolled in are provided with laboratory apparatuses which are accessible to the blind. These initiatives of providing grants of adaptive and assistive materials to students with visual impairment are made possible through the partnership of the ICEVI and The Nippon Foundation who make sure that students with visual impairment are provided therewith through its supply of raw materials and processing equipment which the RBI has been using for the production of 2D and 3D STEM educational materials. In fact, the RBI invested for equipping some of its staff with the technicalities on the operation of the machines used for the production of such 2D and 3D STEM materials.

Free grants of assistive devices

The partnership of the Department of Science and Technology - Science Education Institute (DOST-SEI) also gives more life to the initiative of making STEM accessible to students with visual impairment through its free grants of STEM assistive devices to schools who admit students with visual impairment. These assistive devices include but are not limited to water boil alert, indoor outdoor thermometer, talking timer, liquid indicator, 2D numbers and 2D lines. The RBI produces these assistive devices and the DOST-SEI distributes them to schools for free through its monitory resources. Until the present, there has been maximization on the production of 2 dimensional and 3 dimensional STEM materials ever since the RBI has secured machines for the production thereof.

To view the video on “Tools and Technologies for STEM”, either scan the QR code or click the link.

https://youtu.be/r-q4KHRMMNI
RBI's distribution of assistive materials to receiving students with visual impairment or schools, whether based on free grant or loan programs, presupposes knowledge on the use and maintenance thereof. Because of this, the RBI conducts trainings for receiving students with visual impairment and school teachers and administrators from basic and higher education institutions to ensure that such resources will not be found unused and unfunctional inside a room. Many trainings anchored on this purpose have been observed by the RBI for several years now.

**Computer Eyes**

The level of knowledge on the use of computer technology, one of the most important tools for making STEM curricular requirements accomplishable, has a significant relationship to the academic performance of students with visual impairment in such academic area. It is for this reason that RBI, in partnership with the International Business Machines (IBM) Philippines and Overbrook-Nippon Network on Educational Technology (ON-NET), conducts the Computer-Eyes, an Annual Computer Training for Students with Visual Impairment, each for basic course and advanced course. The basic training course equips students with visual impairment with the basics of the computer, which includes familiarization of computer functions and keyboard commands, and the basics in computer navigation using a screen reader, which includes navigation on the important computer application software such as the Microsoft Word, Excel and PowerPoint as well as select internet web browsers. The advanced training course equips students with visual impairment with a higher level of the basic training course content on MS Word, PowerPoint and Excel navigation. This computer training which has been observed for about two decades now has benefited thousands of students with visual impairment since the outset of this training program. Even during the pandemic, the RBI continues to bring this training to students with visual impairment in the online space through the utilization of social media platforms such as the Google Meet and Zoom, recognizing the role of computer technology towards their academic performance in the temporary observance of online classes.

**SkillsBuild**

In 2019, the IBM Philippines also launched the SkillsBuild program, a set of free online training courses which are open to all people. Through the help of the RBI, this program
was opened to Filipinos with visual impairment who wish to learn soft and technical skills instrumental towards achieving excellence in academics and employment. The IBM made sure that all its training contents are accessible to the blind and low vision and that, after students with visual impairment are taught with the basics of the computer through its annual computer training facilitated thereof, such students will be propelled to another level of skills development which is free and accessible.

Ms. Andrea Escalona, CSR Manager of IBM Philippines and Thailand, sees the partnership between her organization and RBI as a very fulfilling one:

“Seeing the blind and low vision learned computer through the annual computer training and learned soft and technical skills through the IBM SkillsBuild program gives us the reason to continue these programs. We see how relevant it is to the learners and how we are impacting the learners. And that is what is important for us who partners with RBI in bringing these programs to the blind… Our partnership with RBI in increasing the technical literacy of people with visual impairment gives life to our mission in IBM.”

Aside from knowledge on the computer, the level of preparedness of students with visual impairment is also highly related to their academic performance in school especially in college where every academic process inside the class is hasty and challenging. It is for this reason that the RBI facilitates an annual college preparation training for incoming first year college students with visual impairment from different colleges and university institutions in the Philippines. This event is instrumental to the formation of a well-meaning personality and development of effective communication and survival skills necessary for perseverance in college, where a lot of challenges will be encountered by students with visual impairment especially with teachers in STEM subjects. Subsequent to this college preparation training, another annual event in keeping with the situations of the same participants is also observed at the end of the semester next following the former event with the purpose of not only checking on their situations but also imparting another level of skills necessary for facing academic challenges in the future. These two successive events speak of the fact that hard skills and soft skills inseparably go together towards accomplishing college degree requirements and acquiring successful employment.
Career guidance

The RBI, in partnership with the Department of Labor and Employment (DOLE) and the Public Employment Service Office (PESO), facilitates a career guidance and employment coaching for students with visual impairment in the tenth grade including their parents and teachers who play a very significant role in influencing the decision of children on their career choices. This awareness campaign program of the RBI expands not only the horizon of students with visual impairment on the accessible fields of employment they can take path in but also the understanding of parents on their role as a very important support system for the realization of their children’s aspiration. This career guidance event of the RBI fosters a high level of engagement of parents for the educational development of their children. In fact, this is one of the reasons why a number of parents of children with visual impairment united to form an association called the “Parent Advocates for Visually Impaired Children” (PAVIC).

Math camps

Math camps are facilitated by the RBI to give students with visual impairment an avenue to explore isolated yet effective strategies for easy and quick Mathematical computations and visualizations. This kind of event also makes students with visual impairment in basic and higher education acquainted with diverse 2D and 3D Mathematical tools which can be utilized in Math subjects such as geometry and trigonometry. On the other hand, to expand the options of students with visual impairment on dealing with Math accessibly, different kinds of Mathematical application software and their respective uses and functions have been imparted thereto through trainings facilitated by the RBI. Example of this is the Audio Graphing Calculator which has a calculation capacity like that of a scientific calculator. It also has features that enable the blind to make graphs which are printable, thereby allowing students with visual impairment to come up with graphical outputs whenever required to do by their Math teachers. Another example is the use of LaTeX, Non Visual Desktop Access (NVDA), Microsoft Word, and Math Player which collectively have the capacity to read and input Mathematical expressions in a manner that is accessible.
to the blind. These application software are joined together and, whenever a blind focuses the cursor to Mathematical expressions such as fractional or radical ones, he is able to understand such expressions which to him are usually inaccessible. It also enables the blind to write any Mathematical expression in an accurate format using specific codes assigned for writing the same.

Mr. Ryan Operario, Math teacher who is himself a person with visual impairment, stated the importance of acquainting and equipping students with visual impairment with the different Mathematical application software such as the LaTeX and Math Player:

“In Students with visual impairment frequently encounter difficulties when they need to present Mathematical material to sighted teachers and classmates. Moreover, they have also experienced significant challenges as they try to translate complex equations from print to braille and vice versa. Fortunately, advances in digital technology offer interesting potentials, particularly in the area of reading and writing Math contents through LaTeX and Math Player. For this reason, it is deemed important to equip blind and visually impaired students with the skill on how to properly use LaTeX and Math Player with their screen reader.”

In lieu also of the scientific calculator device which has been an integral part of most Math classes, android phones of students with visual impairment can be used for complex calculation through the aid of android application such as the CalcTastic. This android scientific calculator application is introduced to the blind students in junior high school which helps them in performing calculations especially on complex expressions that are cumbersome on both mental and paper computations. Hence, android and other phones have now been treated as assistive device to students with visual impairment especially in the absence of computer or other related assistive device.

All these modes of intervention using Mathematical tools and application software make Mathematics interesting or enjoyable to students with visual impairment; and, the more they enjoy Math, the more they learn therein.

Research writing

Adding up to the coaching interventions of the RBI, research writing training started to be observed thereby. This training assists students with visual impairment in senior high school and college by equipping them with the technical side of conducting and
writing research in any design and in any method, which is part of their respective curricula. This is significant to students with visual impairment, especially to those whose career paths are related to STEM, because they need to anchor their research on STEM-related topics. This initiative does not underestimate existing research teachings in school; it prepares students with visual impairment and augments the learning of those who are currently enrolled in research.

**Training the teachers**

RBI facilitates Math trainings for Math teachers in both basic and higher education with the aim of equipping teachers with the basics of teaching Math to the blind, imparting to them the ways for producing accessible learning materials, orienting them on the rights of students with visual impairment to reasonable accommodation, and encouraging them to take teaching to students with visual impairment an opportunity to grow as teachers.

Aside from equipping STEM teachers towards making STEM accessible to their students with visual impairment through the impartation and facilitation of well-versed trainers, the RBI also convenes STEM teachers together and allows them to learn from one another's best practices in handling and teaching students with visual impairment in their respective schools. This program does not only involve STEM teachers and the rest of a student's academic teachers but all those who compose their social environment in school such as the librarian, computer laboratory personnel, and other individuals directly or indirectly involved in the daily activities of a student in school.

Because the conduct of specialized training programs and alternative delivery modes of teaching and learning is one of its major functions, the DOST-SEI also partners with the RBI in the initiative of equipping STEM teachers on the proper management of students with visual impairment in regular class setting. This initiative started in 2014 with a simple science teacher's forum until it was expanded to yearly accommodate forty to fifty science teachers and to include Mathematics teachers through the development of an annual three-day training for STEM teachers of students with visual impairment around the country. This program has been benefited by schools which receive STEM assistive devices for free as incentive to sending STEM teachers to the training and accommodating students with visual impairment inclusively. Very remarkably, DOST-SEI also facilitates a science camp for students with visual impairment which started in 2013 where students are trained on the different alternative modes of learning science subjects. This mode of
partnership expands the existing partnership of the two organizations which is providing STEM assistive devices to students with visual impairment and schools.

Ruby Caroliza Laña, Chief of Science Education and Innovations Division, DOST-SEI, has an inspiring challenge to the government in support of the education of people with visual impairment in the Philippines:

“I understand that DepEd cannot accommodate all the needs of students with visual impairment because of their wide mandate which covers all learners in the country with and without disabilities... I suggest that the government should enact a law specific for blind learners which will comprehensively address their educational development... I have seen a lot of students with visual impairment who are good in Science and Mathematics... If we could give all forms of support to them, I am confident that we can have a number of blind scientists in the Philippines in the future.”

Yes, the RBI and its partners pursue remedial measures so that students with visual impairment will be duly accommodated. Additionally, it also seeks to provide preventive measures by promoting STEM education for students with visual impairment to public and private higher educational institutions in the Philippines so that any walk-in enrollee with visual impairment, who desires a STEM course or other course which incorporates a number of STEM subjects, will not be denied admission by reason of the perceived difficulties of surviving on it.
D. Surpassing the challenges faced by students with visual impairment in STEM education

Since the development of and innovations on the interventions made by the RBI and its partners to address concerns of students with visual impairment on STEM-related curricula, we have seen a number of persons with visual impairment excelling in STEM-related subjects and courses. More remarkably, we have seen many successful blind and visually impaired in STEM-related fields of employment which, in effect, have made them realize themselves and enabled them to have become part in nation-building. Inside the spectrum of blindness, we used to see people with visual impairment performing songs and instruments for a cost at sidewalks, airports and seaports, bus terminals, malls, and other public spaces. We also used to see some other people working hard in massage industries. Now, we are breaking against this employment stigma by sending Filipinos with visual impairment to school and enabling them to keep pace with the sighted ones. Through the enabling measures made by the RBI and its partners for people with visual impairment, we have been seeing teachers, online coaches, secretaries, customer service representatives, call center agents, social workers, web content writers, managers, medical transcriptionists, computer programmers, consultants, legal assistants, church pastors, entrepreneurs, and many more in the expanded spectrum of blindness in the Philippines. Yes, it is an expanded spectrum after the fact that one of the most technical curricular areas in the Philippine educational system- STEM- has been penetrated by students with visual impairment.

STEM has now become the least among the cumbersome educational curricula, if not totally convenient; several persons with visual impairment have attested to it. “Math is honestly tough, but I believed I could survive on it because I am very passionate for it,” said Michael Raymundo of Cavite.

Michael Raymundo’s achievement

Michael Raymundo, 32, a low vision due to Retinitis Pigmentosa, was very enthusiastic to Mathematics during his elementary and high school. He was an academic achiever during high school. Because of his low vision, he was provided with a magnifier by the RBI. The device enabled him to read his print books in Math.
In 2007, Raymundo took his entrance examination at the Polytechnic University of the Philippines with his magnifier. Inside the classroom, he received the same accommodation strategies as he did in high school with addition of providing test papers in large print by his teachers during examinations. Aside from the magnifier, he had availed of the loan program on computer assistive device of RBI which he used for taking down notes, making assignments, and reading on different references. Raymundo had attended trainings facilitated by the RBI which had helped him survive the course. Raymundo successfully finished his degree in Mathematics in 2011 with a high level of fulfillment. He thereafter worked in a certain company until in 2014 when he pursued Post-Baccalaureate in Teaching Education. Now, he is working as full-time Math teacher to mainstream junior high school students of Marvelous Faith Academy in Bacoor, Cavite, and part-time online academic tutor at Brightside Home School and Tutorial Services, Quezon City. He is also having personal tutorial services to students within the community.

Raymundo is looking forward to seeing many people with visual impairment in the fields of STEM especially in Mathematics:

“I would like to encourage students with visual impairment who have potentials and interests in Mathematics and science that pursuing STEM-related courses is an open door for them to enhance their skills. For those who want to explore, do not be afraid to do so, because in our time today, we need Math educators who are themselves persons with visual impairment but also those who have none. This is a way of proving that Math is really for all.”

Sohan Motwani

Sohan Motwani, 25, person with blindness who gradually lost his sight during his third year in high school due to retinal detachment, was fond of gadgets during his childhood because his father had an electronic business.

Motwani thought he could no longer get back to mainstream school because of his blindness, but a doctor referred him to RBI. The referral marked the beginning of his academic breakthrough. He returned to school with knowledge on the different application software he could use in his studies. With the use of NVDA screen reader, he was able to get back to his computer which he then used in studying. He asked RBI for an audio format of his books and other educational references. In 2015, he enrolled in De La Salle-College of Saint Benilde for a
bachelor’s degree in Information Systems. On his curricular subjects, he had gone through difficulties in accessing Mathematical contents during examinations until his teachers thought of providing test papers and lecture notes which were modified in a manner Motwani could understand. Through the aid of the Audio Graphing Calculator and LaTeX, he was able to submit graphical outputs and read Mathematical expressions and write the same in a proper syntax, where such tasks are pervasive throughout his course.

Motwani graduated as Magna Cum Laude in 2019 and, immediately thereafter, had worked in an e-commerce company until he was able to secure a more satisfying job in a Canadian-based company where he is currently working as software engineer.

Motwani confessed that, without the enabling support of his parents, teachers, classmates, and the RBI, he could not have done things well which he believes were instrumental towards his academic breakthrough. To inculcate a positive mental attitude, according to Motwani, was the sum of all the things the RBI and its partners had done to him.

Over the thirty and three years of operation in the Philippines, the RBI and its partners have become instrumental to the transformation of many lives. The programs and services of the RBI have responded to a lot of challenges experienced by students with visual impairment on the ground. And while the country has improved its educational curriculum through its adoption of the K-12 program, the RBI has consequently expanded its effort to include the Filipinos enrolled in the additional eleventh and twelfth grade, so that students will know that they can still keep pace with the new trend despite the visual impairment.

The usual strands students with visual impairment take during senior high school are General Academic Strand (GAS) and Humanities and Social Sciences Strand (HUMSS). However, for Najwa Mundi of Digos City, she wanted to pursue Science, Technology, Engineering and Mathematics Strand (STEM).

**Najwa Mundi**

Najwa Mundi, 18, person with low vision due to congenital cataract, is an eleventh grader taking up STEM strand at AMA Computer College in Quezon City. She is still able to read texts in 12.0 font size but from a very close distance. She attended the Computer-Eyes, Annual Computer Training of RBI during her tenth grade. She was grateful because, from then on, she has been using her computer to study on her lessons and perform academic tasks. At the beginning of her Precalculus class, she experienced difficulty in reading
graphs. Whenever it happens, she would take a screenshot thereof and, through the use of her computer or android phone, she would have it zoomed in so that she can view it clearly. In making graphs also, she would use the “Desmos” online graphing calculator, a website which she discovered to be accessible to her. She is also using CalcTastic for computation and conversion purposes which she has learned through the CalcTastic training facilitated by the RBI in 2021. Mundi’s influence in taking up STEM strand in senior high school is her desire for challenging herself to go along with sighted individuals.

“STEM is not about how skilful you are in Mathematics or science. I have encountered a lot of students who are usually indifferent to taking STEM as their strand. They would usually say STEM is not for them because they are weak in subjects associated with it… I always tell my friends that STEM is wonderful and that it is not about competition, so there is nothing to worry about taking it because STEM is not there to screen who are best but to teach us.”

Mari Domingo

Mari Beatrix Domingo, graduate of Bachelor of Science in Business Administration Major in Human Resource Management in 2017 at the Dela Salle-College of Saint Benilde, reported that the computer with screen reader she loaned from RBI enabled her to excel in reporting, examinations, and making her assignments. The talking scientific calculator that she borrowed as well from RBI had accordingly been useful to her in subjects like Algebra, Statistics, Business Economics, Business Accounting, and others which involve computations.

“…So I would like to thank ICEVI and the Nippon Foundation for your generosity to RBI,” Domingo expressed. “Because of all your help and support, I had been a certified graduate. May God bless you more in such a way that you would continue to become a blessing to more visually impaired students.”

Abril

Amazingly, today we see students with visual impairment who are gradually penetrating almost all academic disciplines, and one among them is Shyrene Angeli Abril of Laguna. Unlike Domingo, Abril had an early exposure to accounting and business academic
subjects because she took ABM (Accounting, Business and Management) strand during her senior high school, the strand next to STEM where we very rarely see students with visual impairment get interested in.

Shyrene Angeli Abril, 19, person with congenital blindness, wanted to become an accountant, then. Such desire influenced her to take up ABM strand in senior high school. She is inclined to analyzing and solving problems, so she took up the strand, believing that it would bridge her to her desired profession. Like Domingo, Abril heavily relied on her computer and talking calculator she availed from the RBI in overcoming challenging academic subjects like Business Mathematics, Applied Economics, and other specialized accounting subjects. The knowledge she gained from many computer training she had attended such as the computer training of the RBI made her cope up in class. She made use of the ability of LaTeX in reading and writing Mathematical expressions. In 2020, Abril waved her desire to becoming an accountant because of some doubt, not on herself, but on accessibility issue. She was afraid that she might not be able to make use of her profession if she is going to take it. Instead, she enrolled in Bachelor of Science in Business Administration Major in Marketing Management at Laguna State Polytechnic University. Now, she is in the first year of her course.

Abril wanted to start up her own business so she subjected herself to the course to be able to develop knowledge and skills therein:

“I believe that blind people are capable of building and managing their own business… I suggest that students with visual impairment should also consider taking up business and management career paths. I have proven that this field of education is possible for us blind, and I believe that it will empower us to becoming successful businessmen in the future.”

Mike Daryl

Mike Daryl Ocol, 27, person with total blindness due to Stevens Johnson Syndrome, had a high ambition for himself. He took up Bachelor of Science in Social Work in 2015 at Western Mindanao State University and vowed to himself that he must graduate with honor. Pursuant to the school’s social work curriculum, Ocol had
to take two Chemistry subjects and one each for Biology, Algebra, and Statistics. Inorganic Chemistry among the said subjects was the very first he took. It was not easy for him because he was just left behind during laboratory activities. In the following semester, Ocol enjoyed the inclusive manners his teachers in Biology and Algebra respectively treat him in their class and in the laboratory sessions.

Ocol recalled one recurring circumstance inside the class on how his Math teacher involved him during class sessions:

“My teacher usually employs a deductive method of teaching Algebra. She would explain the process of solving while writing it on the board. While writing it, she would, at the same time, utter what she writes. After demonstrating, she would call somebody to perform the process on the board… Of course, I have no longer been exempted since the RBI conducted an orientation seminar to the school’s faculty. She would call me to perform as well. She would read to me the sum given on the board. She would be the one to write as I dictate the steps and the computations I have in mind or in my braille paper or in my net book with screen reader.”

Ocol had attended a lot of trainings facilitated by RBI which helped him overcome difficulties especially in STEM subjects. He attended the Math Specialty Camp in 2012 and the Audio Graphing Calculator training in 2013 which helped him in his Algebra and Statistics subjects respectively. He had also availed of the netbook loan program of RBI and attended its basic and advanced computer training in 2015 and 2018 respectively which enabled him to overcome challenges in making and reporting presentations, doing researches, and making assignments. In 2019, Ocol graduated as Cum Laude in his Social Work course. Currently, he is working as full-time Campus Director at the Philippine Student Alliance Lay Movement, Inc. and part-time research adviser and panel member to undergraduate thesis groups at Western Mindanao State University.
Out of his experience, Ocol cautions students with visual impairment enrolled in non-STEM professions:

“We should not take for granted STEM subjects, however minor they are in our course curriculum. If these subjects are taken out of our focus because we believe that it is not so much significant to our chosen field or profession, we might end up fallen short of achieving such profession… STEM subjects are equally important as our specialized subjects. I can vouch to it because, in my work today, STEM is significantly foundational for making me efficient and effective as a Campus Director.”

Students have no escape with STEM, whether or not they are enrolled in STEM-related professions. However, just as we desire seeing people with visual impairment fully functional and productive in various fields of employment, STEM academic subjects are likewise prevalent in all educational institutions regardless of the variation of schools' academic curriculum. Thus, whichever profession a student with visual impairment chooses, he will always encounter STEM.

The best way to surpass difficulties in STEM curricular area is not withdrawal from it. Instead of compromising his desired profession by taking another one which he thinks he will not experience academic challenges, a student with visual impairment should remember that, in this age where most of modern technologies give the means to the operations of almost all work industries, STEM lines up with other curricular areas that produce skills which are highly marketable. And this has been exactly the unwavering commitment of the Resources for the Blind, Inc., in partnership with the International Council for the Education of People with Visual Impairment (ICEVI) and The Nippon Foundation, who believe that inclusive and quality education is the first and paramount area for enabling the persons with visual impairment to constructively contribute to their respective families and the society and who see STEM curriculum as a foundation for employment.
Chapter 2

Shifting focus to preparation for employment
A. Background

Living life as a person with visual impairment in a developing country like Indonesia is not easy. The very right to seek education remains a significant challenge, let alone a good quality education. This situation stems from the Government’s lack of special facilities and services to support the delivery of quality education for persons with visual impairment, at national and local levels.

If gaining education is in itself a challenge, what about securing employment after completing one’s education? As human beings, persons with visual impairment inevitably desire financial independence, which can be obtained only through work after education.

Of course, it is necessary to address challenges in the education sector together with those in employment. Our success in overcoming employment sector challenges will be an important factor in convincing families with children/family members with visual impairment that providing quality education to them is a very valuable investment.

As the authority providing education and delivering education at the primary, secondary, as well as tertiary levels, the government also needs to be convinced so that they understand that investments to develop services supporting education for school/university students with visual impairment are an obligation that must be fulfilled. This will have a significant impact on developing the younger generation of persons with visual impairment. They will grow up to be intelligent, independent people contributing to their community and country.

Mitra Netra in action

The Mitra Netra Foundation, a nonprofit organization dedicated to developing and providing special services and facilities for persons with visual impairment in Indonesia was established on 14 May 1991, and focuses on efforts to improve the quality and participation of persons with visual impairment in education and employment.

In the education sector, Mitra Netra develops and provides auxiliary services so that persons with visual impairment can obtain a good quality education at regular schools up to higher education. Meanwhile, in the employment sector, Mitra Netra is committed to
developing an employment opportunity diversification program for them, as the quality of their education improves.

While Mitra Netra has provided support to persons with visual impairment since 1991, as a private institution, the scope and sectors of services remained limited even after its second decade of existence. This situation where the importance of empowering persons with visual impairment is ignored will undoubtedly have a significant impact on the development and growth of their attitude as human resources. They tend to be avert from trying new things or being in new places and joining new communities which, according to their understanding of the world, don’t truly grasp the special needs of persons with visual impairment. They are afraid of being ignored. To continue their education to a tertiary level, for example, persons with visual impairment tend to choose a field of study and work that they think will be more accepting of them. One such field is education, especially special education which opens up opportunities for students with impairment to have careers as teachers in special schools. Their choice of studies in higher education would only meet the needs of the labor market in the education sector, primarily special education. This background in special education tends to be incompatible with the needs and demands of the mainstream labor market in other sectors.

Need for career counseling- Pre-employment soft skills

Mitra Netra also found that many alumni who had completed higher education remained unemployed. They continue to arrive at Mitra Netra in seek of activities to fill their time. Only a small proportion have the courage to make an attempt at the job opportunities that exist in society. The rest depend on Mitra Netra’s efforts through the employment opportunity diversification program that was being developed at that time. It must be admitted that employment opportunity diversification did not progress quickly. This is greatly influenced by the awareness, understanding, and willingness of employers to start trying to recruit employees with visual impairment.

Therefore, in 2005, Mitra Netra began to think about the need for career counseling services and pre-employment training for persons with visual impairment that focused more on developing their way of thinking and the mental attitude required for the world of work. Previously, the employment opportunity diversification program that Mitra Netra had built was still
more focused on providing hard skills training. One of these is training to become telephone operators with practice using the necessary tools for the job. If there was any soft skills content, it was only what would be specific to the work of telephone operators.

Of course, in order to develop a pre-employment program that focuses more on soft skills, it is necessary to have experts with competencies in these fields. However, at that time the experts needed were not available at Mitra Netra. Realizing the limitations in human resources, in 2006 Mitra Netra embarked on cooperation with Volunteer Service Overseas (VSO) providing and channeling volunteers on an international scale. This cooperation aimed to secure the support of volunteers with expertise in career counseling and pre-employment. Considering that at that time in Indonesia there were no practitioners who had developed expertise in the field of career guidance and pre-employment for work for persons with visual impairment, this was one alternative. After undergoing a recruitment and selection process, an Irish volunteer named Brona O’Donnell was selected, she had expertise in career guidance and pre-employment for persons with impairment. Together with Mitra Netra, a pre-employment training model was designed with a greater focus on developing a mindset and attitude or soft skills to enter the formal sector for work.

In order to design the training so that it truly suits the needs of persons with visual impairment, Mitra Netra first conducted a simple survey targeting 15 persons with visual impairment as follows:

1. Persons with visual impairment who have a bachelor’s degree and are working;
2. Persons with visual impairment who have a bachelor’s degree and are seeking work;
3. University students with visual impairment;
4. Persons with visual impairment who have completed high school and want to immediately work, as continuing higher education is not a financially viable option.

The group of persons with visual impairment who had completed higher education were asked why they had not yet worked. The reasons given were:

1. Confusion about what job to apply for and where;
2. Worry about whether the world of work would accept employees with visual impairment;
3. Lack of understanding on how to apply for a job, how to write an application letter, and how to prepare a CV.

When asked what skills respondents need to improve their capacity and quality as human resources, most answered that they needed to develop communication skills to persuade employers that persons with impairment are also able to work with those without such impairment. Respondents also said they needed guidance on how to prepare a good job application and CV that would be attractive to employers.
Towards the end of the survey, Mitra Netra was in the process of collaborating with Standard Chartered Bank on a placement program for persons with impairment to work at the bank. The initiative to recruit employees with visual impairment came from Standard Chartered Bank, which at that time was starting to implement diversity and inclusion in the company. In the early stages of this hiring approach, the position offered was as telephone operators. As a telephone operator, staff with visual impairment were also tasked with providing information to customers.

In response to the cooperation to place workers with visual impairment, Mitra Netra together with Brona O'Donnell designed a short pre-employment training lasting three days, with each session lasting 5 hours. The following topics were covered:

1. Assertive communication. This topic was delivered in both theoretical and practical forms;
2. Writing a job application and creating an attractive CV;
3. Understanding and meeting job requirements;
4. Preparing for job interviews and participating in job interview simulations;
5. Professional telephone communication;
6. Customer handling;
7. Work ethics and building professional work relationships with colleagues and supervisors in the workplace;
8. Problem solving in the workplace, including overcoming problems related to work processes as an employee with visual impairment. This topic breaks down previous topics, specifically assertive communication.

First success story on facilitated employment

Three persons with impairment who met the requirements set by Mitra Netra for the work placement program at Standard Chartered Bank attended the training. Considering the target was a multinational company, Mitra Netra required that the candidates be able to communicate in English. Although it was a brief training, participants received theoretical content and practical training. There were several simulations, specifically a simulation of delivering a presentation, talking on the phone and a job interview.

According to the number of vacancies available, one of the three candidates who applied successfully became an employee at this multinational bank.

Leveraging the success of this pre-employment program to channel a person with visual impairment into Standard Chartered Bank, Mitra Netra together with Brona decided to develop a more comprehensive training module. With this more comprehensive module, Mitra Netra could then prepare training sessions for more persons with impairment. The
modules were prepared by developing topics that were tested in the pioneering training program that had been held.

In this training module, topics related to soft skills development were more detailed and presented in a training package with a duration of approximately 300 hours, including the time required to work on individual and group assignments.

Realizing that the Pre-Employment Soft Skills Training primarily uses a psychological approach, Mitra Netra needed to engage with the Faculty of Psychology. Consequently, Prof. Dr. Frieda Maryam Mangunsong Siahaan, M.Ed. from the Faculty of Psychology at the University of Indonesia was approached as she also had a background in education for children with special needs, including those with visual impairment. Through her, Mitra Netra obtained recommendations to recruit two alumni from the University of Indonesia, Faculty of Psychology who had competencies in delivering pre-employment training. Both of them were recruited as external experts to deliver the second pre-employment training.

The following are the general topics that were delivered in the training:

1. Knowledge of the world of work and careers;
2. Understanding of their own strengths and weaknesses;
3. Potential career fields;
4. Action plans to develop a career based on their strengths and weaknesses;
5. The importance of social networks and participating in community activities to increase their chances of success in entering the workforce and developing their career;
6. The importance of basic skills that are necessary for a person with visual impairment to work in an inclusive labor market:
   - Orientation and mobility skills;
   - Skills to use computer technology.
7. Preparing themselves for job recruitment in an inclusive labor market:
   - Strategies to obtain information on job vacancies;
   - Writing a good application letter that is attractive to employers;
   - Making a good CV that is attractive and according to the available job vacancy;
   - Preparing them and going to a job interview.
8. Developing communication abilities, both verbal and nonverbal, as part of the preparation to enter an inclusive labor market:
   - The importance of having assertive communication capabilities;
   - Presentation skills;
• Developing nonverbal communication abilities with the appropriate body language;
• Developing good grooming.

9. The session featured guest speakers from professionals working in the company to provide insight into the world of work from the company’s point of view;

10. Internships to provide practical experience at the company as one of the selection stages to enter an inclusive work environment.

The training duration was 300 hours over the course of three months, in which 12 persons with visual impairment participated in various training activities at Mitra Netra.

Even though it was a lengthy training package with a combination of theory and practice, group assignments and individual tasks, the trainees remained enthusiastic about participating in this pre-employment training. The participants developed a strong sense of togetherness and mutual support.

At the end of the training, Mitra Netra endeavored for each participant to have work experience interning at the company. Although the internship was designed to be part of the training, participants were still required to undergo a selection process in order to be accepted for the internship. More effort was required in order to finally implement the internship stage for these training participants. It required leadership, lobbying, network building, and assertive communication abilities. Ultimately, Mitra Netra succeeded in convincing several companies that their support in providing internships to the pre-employment training participants would be a valuable investment for these persons with visual impairment.

Below are two companies that accepted persons with visual impairment as interns:

1. **Hotel InterContinental**, provided the opportunity to a participant who passed the selection to teach English to operations staff at the hotel. The internship lasted three months. At the end of the internship, the hotel wanted to continue employing this person with visual impairment as a regular English teacher for employees in operations.

2. **PT Gita Swara**, a company distributing alcoholic beverages, accepted one person with visual impairment as an intern as part of the front office staff and telephone operator.
Attaining momentum in the project progress

The initiative to Pre-Employment Soft Skills Training caught the attention of the ICEVI Higher Education Project when it was in the third year of its project cycle in 2012. The Higher Education Project regularly holds meetings with the country coordinators. Strategic ideas are always discussed in the country coordinator meetings, which had been held in four countries: Indonesia, the Philippines, Vietnam, and Cambodia.

In the Country Coordinator Meeting, 2012, the idea of increasing the number of persons with visual impairment enrolling in and completing higher education together with the number absorbed into the labor market was discussed.

The Indonesian State Coordinator shared his experience in pioneering Pre-Employment Soft Skills Training for persons with visual impairment in Indonesia. The experiences were shared as a career counselor at Yayasan Mitra Netra, which was described in part A of this chapter.

Given that not all Higher Education Project partner countries have knowledge and experience on the importance of persons with visual impairment developing soft skills in preparation for work, the Director of the Higher Education Project, Larry Campbell, proposed at the Country Coordinator Meeting that an American career guidance expert to provide insight be invited. This proposal was approved. Karen Wolfe, a professional in career counseling who also has experience working with and assisting persons with visual impairment in the United States, was invited. A meeting was held with Karen Wolfe in Bangkok after the ICEVI–WBU joint event in 2012.
With her experience and expertise in the field of career counseling and the importance of building soft skills for those in the younger generation with visual impairment, she has broadened the horizons of country coordinators. Karen even suggested that soft skills be developed as early as possible in accordance to age and the level of education. All of the meeting participants agreed.

After gaining greater insight, the country coordinators continued discussing how to implement this idea in countries where the Higher Education Project operated. In a regular meeting in Cambodia held in early 2014, the country coordinators finally agreed that in order for this idea to move forward and continue to be sustainable, it was necessary to collaborate with local professionals in each country. This was considered important because building the soft skills of persons with visual impairment in the younger generation is inherently linked to the underlying local situation which comprises the backdrop for their growth.

Although all countries have agreed to use local professionals, if any partner country remains unable to find or engage a local partner with expertise in soft skills development, said country can learn from other partner countries that already have local partners.

After over a year, the Higher Education Project finally agreed on the stages for this endeavor. Before the soft skills training as pre-employment was integrated into the Higher Education Project activities, which started to address employment, each partner country was asked to convey basic concepts to briefly and clearly explain the challenges faced by the younger generation of persons with visual impairment who were entering the formal sector labor market as well as the urgency of Pre-Employment Soft Skills Training for them.

**Pertuni was able to convey the following from Indonesia:**

There were two challenges requiring intervention, which were related to the situation that persons with visual impairment with higher education face in accessing the world of work.

- The first challenge was internal to the person with visual impairment, relating to the distance or gap between the quality of prospective workers with visual impairment and the employee qualifications expected by the formal sector labor market. This gap was comprised of more specific hard skills as well as soft skills. This was partly because most of them were pursuing higher education in the fields of special education, religion, and social welfare. In addition, the pre-employment training delivered by job training providers at that time remained inaccessible to the younger generation of persons with visual impairment.

- The second challenge was external. Employers, both in the public and private sectors, neither understood nor believed that persons with visual impairment would be able to work together in an inclusive manner with those who do not have visual impairment. Part of the reason was the lack of regulations and systems at that time providing...
support in the recruitment and placement of workers with impairment in an inclusive labor market.

Implementing interventions for both aspects is a big and complex job. However, Pertuni believes that the Higher Education Project can play a role, though it may be through small steps with strategic value for both aspects. Interventions on external aspects are performed by producing media for communication, information, and education. These take the form of videos and guides. Meanwhile, interventions on chosen internal aspects were provided pre-employment training that emphasized soft skills development. At the Country Coordinators Meeting of the Higher Education Project in 2014, the participants reached an agreement on the importance of interventions for both aspects.

ICEVI held a meeting in mid-2014 that was attended by country coordinators from Cambodia, Indonesia, the Philippines, and Vietnam. This meeting was held in Manila, specifically at Resources for the Blind, Inc. (RBI), a partner organization of the Higher Education Project in the Philippines that had been asked to host.

**Important matters discussed and agreed upon at the meeting included:**

1. The importance of transition programs between the period when persons with visual impairment are pursuing higher education and the period when persons with visual impairment have completed higher education and seek a job;

2. The importance of interventions for internal and external aspects as a form of support for persons with visual impairment in the younger generation who have completed higher education to enable them to be absorbed in the formal sector labor market;

3. In order to implement interventions on external aspects, communication, information, and education media are needed for employers, as policy support from the Government to mandate the absorption of workers with visual impairment in the formal sector labor market;

4. Interventions for internal aspects include pre-employment training;

5. One of the pre-employment training topics for which special attention was agreed is the development of soft skills. The meeting also resulted in the agreed topics/materials that need to be taught in the targeted training with a maximum duration of 5 days;

6. In organizing and developing the Pre-Employment Soft Skills Training, the Director of the Higher Education Project suggested that partner institutions use two approaches, as Indonesia implemented when this project started in 2006. These are university-based and resource center-based approaches. University-based means that training sessions were held in collaboration with universities that already had service centers for university students with impairment. Meanwhile, resource center-based means that training sessions were organized by a resource center providing services for university students with visual impairment.
Components of the Soft Skills module

Meanwhile, the soft skills aspects that were agreed upon in the meeting and which were considered important for university students with visual impairment to be taught in pre-employment training are as follows:

- Communication skills – spoken and written skills
- Resume preparation skills
- Interview facing techniques
- Career planning skills
- Coping with impairment conditions
- Goal setting
- Decision making
- Coping with situation when jobs obtained do not commensurate with the qualifications
- Learning to optimize productivity in work
- Learning to work together
- Understanding the potential in self
- Coping with external criticism
- Peer group interaction
- Initiative to become unique
- Self-esteem
- Diplomacy skills
- Work ethics
- Knowledge of legislations on employment
- Developing proper gestures
- Coping with work environment
- Personal grooming
- Dealing with superiors as well as subordinates
- Coping with challenges in mobility and transportation
- Professional enrichment goals

For the Higher Education Project in Indonesia, the meetings in Cambodia and the Philippines held in early and mid-2014 were an important moment – the Higher Education Project decided to start supporting the implementation and development of Pre-Employment Soft Skills Training for persons with visual impairment among Indonesia’s younger generation. This was initiated by Mitra Netra in 2008, but was discontinued as the required support was lacking.
Higher Education Project making history in its role

The first year of the Higher Education Project cycle implementation focusing on employment was 2015, which was prepared for a three-year period and began to address employment related training in addition to higher education activities. That means 2015 was the first year that the project supported the implementation of Pre-Employment Soft Skills Training for university students with visual impairment in Indonesia.

As proposed, in this first year Pertuni as a partner institution also implemented two approaches, namely a university-based approach and a resource center-based approach. Meanwhile, Pertuni successfully collaborated with the Yarsi University Faculty of Psychology to meet the need for trainers. There was a lecturer named Alabanyo Brebahama with visual impairment categorized as low vision at the Faculty of Psychology, Yarsi University, who is also an experienced trainer in the field of human resource development.

The first piloting was conducted. For the resource center-based approach, Pertuni collaborated with the Mitra Netra Foundation in Jakarta. Meanwhile, to implement a university-based approach, Pertuni collaborated with the Impairment Services Center at Sunan Kalijaga State Islamic University, Jogjakarta. This university that partnered with Pertuni took the initiative to establish the Impairment Service Center for Students in 2007.

The training in Jakarta was designed for 5.5 days, including time for sit-ins, which were visits to companies willing to cooperate and accept training participants on site to learn about and become familiar with business processes in these companies. Meanwhile in Jogjakarta, the training lasted 4 days, including visits to companies and non-profit organizations.

The methods applied in Pre-Employment Soft Skills Training are as follows:

1. **Self-learning:** Participants are requested to read up on the topics independently;
2. **Lecturing:** The training topics are delivered in lectures that are followed by discussions and Q & A sessions;
3. **Games:** Using games as an introduction before entering the topic discussed, or vice versa, after trainees have participated in sessions addressing the topic;
4. **Group assignments** and individual assignments;
5. **Simulations**: Practice to help participants better understand the training topics being taught;
6. **Sit in**: Training participants are invited to visit companies/institutions that may have potential job opportunities for the younger generation of persons with visual impairment. Through this activity, participants were introduced to the real world of work.

A maximum of 20 participants underwent the trainings. The number was intentionally limited to 20 participants for more effective training. The involvement of Faculty of Psychology students or alumni was also part of their educational process to open their eyes to potential opportunities to become trainers in human resource development for persons with visual impairment. It was expected that in the future, Indonesia would have more experts in the field of soft skills development for persons with visual impairment and other people with impairment. The following were the facilitators’ tasks:

1. Divide participants into groups;
2. Administer pre-tests and post-tests and submit their results to trainers;
3. Lead the group for which they are responsible (there are twenty training participants divided into four groups, each group consisting of five participants);
4. Provide additional explanations as necessary if participants do not understand the tasks or training materials provided by the trainer;
5. Prepare and conduct games as well as practice activities and simulations;
6. Guide training participants as they participate in games/simulations;
7. Provide assistance to participants throughout the training;
8. Assess participants to select the best participants (one female and one male);
9. Other tasks relevant to training.

Considering that the first year of training was a trial run, both Pertuni, Mitra Netra, and the trainer team continued conducting intensive monitoring and evaluation to ensure that the designed training topics and methods could be implemented and achieve the training objectives in an effective manner. The Pre-Employment Soft Skills Training modules that were first designed in 2015 are appended at the end of this book.

After successfully piloting the Pre-Employment Soft Skills Training in Jakarta and in Jogjakarta along with evaluations of the trainings, Pertuni continued the training in other cities in Indonesia. Pertuni faced new challenges while implementing the training in its second year of the project cycle in 2016. A resource center or university was not always available to be partners in the cities where the trainings were to be held. Even if there were universities that accepted students with visual impairment, they were not ready to
become partners in organizing the planned trainings. In light of this, Pertuni decided to organize the training itself by involving Pertuni administrators in the province or city where the training would be held.

The Pre-Employment Soft Skills Training was delivered in seven Indonesian cities, reaching 190 persons with visual impairment in the younger generation. Those who had completed their studies worked in fields according to their respective interests and competencies.

Below is the testimony of Alabanyo Brebahama, a Pre-Employment Soft Skills trainer who was also a lecturer at the Faculty of Psychology, Yarsi University in Jakarta.

“The right man in the right place’ is a phrase that I always keep in mind when we talk about labor. As a person with low vision who is also experienced in the employee selection and recruitment process, I am able to say that if we are not accepted, it does not mean that we are a bad person (incompetent), or that the institution/company recruiting is discriminating against us. The reason for not being accepted is often because our competencies do not match the requirements of the job being offered.

I was very happy when I received an offer from Pertuni to develop the Pre-Employment Soft Skills Training for persons with visual impairment in Indonesia. As part of Yarsi University, I feel partially responsible for this. With this training, I hope that more of the younger generation who are persons with visual impairment will achieve success in their future careers.”

As an organization requiring cadres of leaders from the younger generation of persons with visual impairment, Pertuni also benefited from the Pre-Employment Soft Skills Trainings that were delivered in seven cities. This training, which was basically self-leadership training, played a role in cultivating the younger generation of persons with visual impairment who had good leadership skills and held the position of Pertuni Branch Head and Pertuni Regional Head in several provinces and districts/cities in Indonesia. The testimonies and career paths of several alumni are presented in the third part of this chapter.

Mitra Netra, a resource center that became Pertuni’s partner in implementing the first Pre-Employment Soft Skills Training continued this work and developed a similar training with Alabanyo Brebahama.
Integrating soft skills development with other activities

After three years of developing the Pre-Employment Soft Skills Training model in five cities in Indonesia in the 2015-2017 project cycles, Pertuni started seeing the results and impact of the trainings.

Pertuni began to innovate in the next project cycle of 2018–2020. In addition to continuing the organization of the same training in other cities, Pertuni also integrated the soft skills development for the younger generation of persons with visual impairment into other Higher Education Project activities.

Instituting Country Champion Program

Among the activities carried out in 2018, the Country Champions program had become favored at the Higher Education Project.

The idea of holding the Country Champion activity actually started from the ICEVI Global meeting held in Pretoria, South Africa in 2017. During the meeting, ICEVI agreed to organize an activity that demonstrated the success of advocacy to improve the access to regular education for persons with visual impairment, which improved them as human resources as well. This activity invited the younger generation of persons with visual impairment who were currently in, or had completed higher education, to a Country Champions meeting. The purpose of this meeting was to show the community that by having access to quality higher education, the younger generation of persons with visual impairment would be able to grow up to be leaders in their community.

For ICEVI in East Asia, especially countries where the Higher Education Project is implemented, the Country Champions activity was supported by the project. As country coordinator and a partner institution to Higher Education in Indonesia, Pertuni was tasked with coordinating the Country Champions activity.

In designing this activity, Pertuni not only coordinated with university students with visual impairment who were selected as organizers, but also with Alabanyo Brebahama, a Pre-Employment Soft-Skills trainer. The involvement of this trainer was intended to incorporate soft skills training into the 2018 Country Champions sessions held by Pertuni. Some of Pertuni’s Country Champions 2018 participants were alumni of the Pre-Employment Soft Skills Training by Pertuni and Mitra Netra. Of the participants, the soft skills training these alumni stood out from the other participants, particularly in terms of thought concept.

Another example is the integration of soft skills in creative writing for university students with visual impairment and fresh graduates with visual impairment. These work skills trainings based on writing ability were started in 2020, the first year of the global COVID-19 pandemic. As a result of the pandemic taking hold, all trainings that were originally designed to take place in person, were transformed into online trainings. Aside from...
teaching hard skills, namely creative writing for social branding on social media as well as writing skills for journal articles, the trainers also taught soft skills that specifically needed to be cultivated in order to become a content writer or reporter. Among the soft skills were assertive communication skills, time management skills (especially for those working freelance), the ability to maintain a positive attitude when receiving input and criticism on their work, team work, as well as the ability to commit to deadlines. For those who wanted to work for an agency selling services to customers, they were also taught about the importance of customer service to ensure that customers continue using the service of the agency where they are employed.

Migrating to online trainings due to the COVID-19 pandemic

When the World Health Organization declared COVID-19 a pandemic, the entire world was on alert, adjusting to the situation based on information regarding latest developments even though the impact was not immediately evident in Indonesia. It was the same with the Higher Education Project implementation. In 2020, the Project had scheduled two Pre-Employment Soft Skills Trainings which were to start targeting Sumatra. The trainings were to be delivered in Padang in April 2020 and in Aceh in October 2020. In mid-February 2020, the Project Coordinator visited Padang, West Sumatra, for training preparations.

The impact of the pandemic only began to surface and be experienced in Indonesia starting March 15, 2020, when the President of the Republic of Indonesia Joko Widodo announced that COVID-19 had entered Indonesia. As of March 16, 2020, one day after the announcement, all learning and teaching activities in Indonesian schools and universities became distance learning or online learning. Students from schools and universities studied at home. Office activities followed, with everyone being asked to work from home (WFH).

At that time, Pertuni decided to postpone the Pre-Employment Soft Skills Training that was to be held in April 2020 in Padang, West Sumatra. The pandemic continued for another four months with conditions continuing to worsen. Pertuni then decided to conduct Higher Education Project activities online where possible, and continue to postpone activities that cannot be held online. The activity that they decided could be held online at that time was the Creative Writing Training. Meanwhile, the Pre-Employment Soft Skills Training remained postponed.

Nonetheless, as time passed and they understood the uncertainty regarding when the pandemic would end as well as the urgency of delivering Pre-Employment Soft Skills Training for the younger generation of persons with visual impairment, at the end of 2020 Pertuni decided to adjust Pre-Employment Soft Skills Training so that it could be held online.
The modules were thereby modified. It required more creativity to convert the games that were originally designed as in person activities into games that could be played online with the same objectives and essence. It required even more creativity to ensure that the participants’ enthusiasm was stable during the training and the bond between participants, facilitators, and trainers remained strong throughout the training.

The training topics then started to be developed. The Industrial Revolution 4.0 which was identical to the digitalization era, was among the topics. It was impressed upon them that there was the potential for new employment opportunities that were very much within reach of persons with visual impairment. The Pre-Employment Soft Skills Training that was held online is appended at the end of this book.

*Managing an online training is different from managing one held in person. Below is the explanation of how the online Pre-Employment Soft Skills Training was conducted:*

1. Facilitator recruitment was conducted with stricter requirements, which included having adequate leadership skills. This was considered important because managing a group online requires better persuasion skills than those required for managing a group in person. Prospective facilitators must apply and attend an interview for the selection process.

2. The platform selected was one that could be accessed independently by persons with visual impairment, either by using a Smartphone or a computer, and one that could meet training needs. The platform selected was Zoom.

3. Applications were submitted online using Google Forms.

4. Interviews were conducted over phone to ensure that applicants were committed to participating in the training.

5. Applicants who passed, the selected facilitators, and the trainers then joined a WhatsApp group before starting the training in order to manage the preparations.

6. Aside from forming a large group, each facilitator is tasked with managing participants in the group also make a smaller WhatsApp group just for the members under their responsibility. They deemed it important to make it easier for facilitators to manage their respective groups.

7. Pre-tests and post-tests were sent to participants via email. The pre-test needed to be completed before the first day of training. Meanwhile, the post-test had to be completed and submitted to facilitators one day after the training ended. The training certificate would only be given after the participant submitted their post-test.

8. In order to better stabilize the signal and conserve the battery charge, participants are not required to always have their videos turned on throughout the training session. Videos only had to be turned on during games, which required responses in the form
of movement, or in sessions with gestures to see participants' body language in front of the camera, or in interview simulation sessions.

9. When participants have to work on individual assignments, they are asked to leave the meeting first and then return after completing the individual assignments. This method helped them save on internet package use as not all participants had Wi-Fi at home.

10. If participants receive group assignments, the meeting would be divided into breakout rooms according to the number of groups. Participants discussed the assignment in groups with guidance from their facilitator.

11. Games were designed in the form of questions that could be answered with words. If any game required responses in the form of movements, facilitators had to ensure that participants were directly in front of the camera so facilitators could see their movements.

12. Sessions on non-verbal communication, gestures, and personal grooming were mostly conveyed through tips without practical application.

13. Interview simulations were conducted in breakout rooms. Each breakout room was led by an interviewer and facilitated by a facilitator. Participants who would be participating in interview simulations were called into the online interview room, each one in turn.

Regardless of the weaknesses of online trainings, they had their own advantages. One advantage was that participants could apply and be recruited from any city in Indonesia. This resulted in the Project having a much broader reach.

Adapting to the new normal

Mitra Netra is the first institution to implement online training, for which the module has been modified by Alabanyo together with the Pertuni Higher Education Project Coordinator who was also a job coach at Mitra Netra. The training was conducted in the first semester of 2021. Then, the Virtual Pre-Employment Soft Skills Training supported by the Higher Education Project was held in the second semester of 2021.

There are several important points to note in implementing the Pre-Employment Soft Skills Training online:

1. The emotional bond between the participants and the trainers and facilitators is not as strong as what develops in trainings held in person.

2. Trainers are limited in their ability to ascertain that the participants understand all of the topics delivered in the training.
3. Maintaining discipline among participants is in itself a challenge, such as ensuring their attendance in the training room from the start at the beginning of the day or after the lunch break, as well as the discipline to complete all the tasks assigned to them. Despite whatever shortcomings it may have, both Pertuni and Mitra Netra, as institutions with great concern for developing the quality of human resources with visual impairment, were of the view that conducting online trainings remains much better than having no training at all.

Sharing for Cambodia

In September 2015, exactly one year after the first Pre-Employment Soft Skills Training in Indonesia, the Higher Education Project Country Coordinator Meeting was held in Indonesia. The meeting was held ahead of the East Asia ICEVI Regional Conference.

As with previous meetings, the country coordinators were asked to share experiences on the project activities they had conducted. Indonesia shared its experience in incorporating pre-employment soft skills training into their Higher Education Project training activities for the very first time. Professor Alabanyo was invited to join the meeting for this discussion so that participants could learn directly from him and discuss the possibility of his becoming a training resource person for the entire region.

What Indonesia had achieved inspired Krousar Thmey, the Higher Education Project partner institution from Cambodia. They wanted to learn from Indonesia. According to Krousar Thmey, they did not yet know whether there was a human resource development trainer in Cambodia with the expertise to provide soft skills training. Subsequently, Krousar Thmey’s Director requested that Alabanyo hold the Pre-Employment Soft Skills Training for students with visual impairment in Cambodia and the Country Coordinators’ Meeting supported this request.

This scheme was adopted to provide an example and a live illustration of what Pre-Employment Soft Skills Training is to the staff at Krousar Thmey who are responsible for the employment program.
After obtaining a more comprehensive overview of the Pre-Employment Soft Skills Training that had been piloted in Indonesia, Krousar Thmey and the Faculty of Psychology at Yarsi University where Alabanyo taught agreed that it would be better if trainers from the Faculty of Psychology, Yarsi University provided a Training of Trainers (ToT) to the Krousar Thmey staff. The collaboration between Krousar Thmey and the Yarsi University Faculty of Psychology in the development of Pre-Employment Soft Skills Training for persons with visual impairment in Cambodia commenced.

Meanwhile, as Indonesia struggled to convince universities there to open doors and allow admission of qualified blind students to study Software Engineering, Resources for the Blind in the Philippines where this has been happening for a number of years hosted a delegation of faculty and government officials from Indonesia. Since that study tour, doors to degrees in Software Engineering have opened in Indonesia to students with visual impairment.

The Higher Education Project not only enables partner institutions to implement strategic ideas but actively seeks opportunities for them to share ideas, learn from each other and in a true “south-south spirit” to work together to “change what it means to be blind” in Southeast Asia.
The word inclusion, which was assimilated into Indonesian as “inklusi,” was only introduced in Indonesia when the Government began exploring the implementation of an inclusive education system in 1997. Its use remains extremely limited, being used only among those who are involved in the education of children with special needs, including children with visual impairment.

Standard Chartered Bank Indonesia began spreading the spirit of diversity and inclusion in their company in 2008. This policy began being applied internally, particularly among employees, and then spread to other parties involved in business with this bank. With this spirit of diversity and inclusion, Standard Chartered then began exploring the possibility of recruiting employees with impairment, including the visual impairment. The company believed that by reaching out to groups of persons with impairment, the company would increase the range of options for competent talent who would be able to join the company and help achieve company goals.

Mitra Netra was the first to be contacted when the bank was about to start recruiting employees with impairment. The response to Standard Chartered Bank’s request was immediate. It was agreed that the starting position for a person with visual impairment who was proficient in English would be telephone operator.

According to the Country Head of Human Resources, Fien was a person with a visual impairment who had great self-confidence, even when compared to other employees who are without impairment. She had an advantage in foreign language skills as she spoke English, German, and Mandarin. Fien was then assigned to a more complex role, Personal Assistant (PA) to the Country Head of Property. Among her duties were receiving complaints from Standard Chartered Bank employees throughout Indonesia regarding disruptions they experienced at work, then forwarding them to the competent division for resolution; and organizing as well as coordinating meetings with partners/vendors that supply the needs of the company; and handling the administration to complete payment processes. “It truly is not an easy task,” explained Suryantoro Waluyo, Country Head of Human Resources at Standard Chartered Bank.

As a result of her achievements, Fien was made a company employee with a contract, and in the end became a permanent employee. Standard Chartered Bank currently has five employees with visual impairment and two employees with physical disability. For Mitra Netra, the collaboration with Standard Chartered Bank in the recruitment and placement of employees with visual impairment in 2008 was a proud achievement.
Toyota Astra Financial Services recruited persons with visual impairment for their Call Center

In early 2016, Mitra Netra started collaborating with PT Toyota Astra Financial Services through their CSR program. They supported the production of books that are accessible to persons with visual impairment through regular monthly donations. Through the information they obtained from Mitra Netra, the company also learned that Mitra Netra had a job opportunity diversification program in which persons with visual impairment went through promotion and placement stages in companies intending to recruit persons with visual impairment.

In the first semester of 2016, Mitra Netra scheduled a similar training program for those who had visual impairment when they were already adults and were undergoing a rehabilitation program at the foundation. There were 10 participants in the training.

It wasn’t long after the training was conducted that PT Toyota Astra Financial Services in mid-2016 developed their CSR program by recruiting persons with visual impairment as employees for their call center. The company’s HR department had contacted Mitra Netra to implement the plan.

The Company took the following steps together with Mitra Netra as its counterpart:

1. Agree on the requirements that must be met by persons with visual impairment who were to become call center staff members. Because their duties would be to conduct customer surveys to obtain input on improving the company’s services, it was agreed that the minimum requirements for persons with visual impairment who wanted to apply were as follows:
   - a minimum of a high school education;
   - the ability to operate computers, at least Microsoft Office;
   - able to communicate well;
   - have a strong desire to achieve the targets set by the company.

2. Mitra Netra’s Information Technology team conducted a review of the call center application that would be used. The result showed that the application had not been designed using a universal format. Therefore, Mitra Netra recommended that the application be improved. Meanwhile, in order to accelerate the recruitment process, the company prepared access to the database using Microsoft Excel for employees with visual impairment who would be placed at the call center.

3. Mitra Netra’s Job Coach conveyed information on job opportunities at the Toyota Astra Financial Services call center to the 2016 Mitra Netra recent alumni of the Pre-Employment Soft Skills Training. They were asked to immediately prepare the required files.
4. The Job Coach held a special preparation session for candidates who were going to participate in the job recruitment process which includes:
   - a simulation session on accessing the database using Microsoft Excel;
   - a session on effective telephone communication.

5. Alumni who were selected to participate in the job placement program were then asked to prepare the necessary files, submit these files to the Mitra Netra Job Coach, and these were then submitted to Toyota Astra Financial Services.

6. The selection process was comprised of interviews. The company immediately called the candidates for an interview in their office. Of four candidates who were interviewed, two were accepted because they had the competencies required.

   The two persons with visual impairment who were accepted through the selection process to be placed at the call center for Toyota Astra Financial Services were **Meirlinastasari Dewi** and **Desha Novanto**. Both candidates had good telephone communication skills and were considered diligent in conducting customer surveys that gathered input to improve the company’s services.

In adulthood and after working, Desha Novanto had a visual impairment. At Mitra Netra, Desha completed a rehabilitation program by participating in counseling services as well as Orientation and Mobility training. Steadily, Desha adjusted to having a visual impairment. He then completed computer training, which was actually more focused on making him accustomed to using a computer with the help of a screen reader application. He was able to do this as he was already proficient in using this technology before having a visual impairment.

Unlike Desha, Meirlin had a visual impairment from childhood, and her vision continued to decline as she entered adulthood until she finally had no sight. After she participated in the rehabilitation program at Mitra Netra, Meirlin began adapting to living without sight. That was when she started participating in the necessary pre-employment trainings.

Desha benefited from the Verbal Communication session, especially the technique of speaking with a “smiling voice.” Meanwhile, Meirlin benefited greatly from the Interview Simulation and Presentation Practice sessions in the Verbal Communication session. This woman who tended to be shy and nervous easily benefited from the simulation methods used in the Pre-Employment Soft Skills Training. Throughout the recruitment process at Toyota Astra Financial Services, she applied everything she learned from the training, and the results were encouraging. She was one of the selected applicants.
For the second batch of recruitment, the company recruited three staff members for their call center. Toyota Astra Financial Services’ success in recruiting employees with visual impairment is inseparable from the desire to empower persons with visual impairment by involving them in ongoing business processes. This was of course accompanied by the requisite adaptation process, which in the Indonesian Impairment Law is called reasonable accommodation.

**Non-government organizations as a career option**

If some of the persons with visual impairment aspire to build a career in enterprises or institutions in the government as state civil servants, then there is also a small group of persons with visual impairment in the younger generation who see working in international non-governmental organizations as a valuable opportunity that would be hard to miss.

We find such an example in Alfian Andika Yudistira (Alfian) and Wikandana (Wikan), two alumni of Pertuni’s 2017 Pre-Employment Soft Skills Training. Wikan was an alumnus of the training held in Malang, East Java. Meanwhile, Alfian was an alumnus of the training held in Surabaya, East Java.

**Wikan’s Story**

When the Pre-Employment Soft Skills Training was held in March 2017, Wikan was an International Relations student at the University of Brawijaya. He is a person with a visual impairment from the Island of the Gods who began losing sight when he was 10 years old. Wikan had attended a regular elementary school, then continued to special schools for students with impairment after becoming blind until he graduated from high school. As an International Relations student, Wikan equipped himself with good English language skills.

While participating in the Pre-Employment Soft Skills Training, Wikan was further strengthened by the Self-Concept, Goal Setting, Action Plan, and Time Management sessions. Even though it was only the third semester, Wikan had set a firm goal to build a career in international economics by applying the concept of impairment inclusion. To achieve that, of course, Wikan needed to take a route that would support the achievement of his career goals. Among these was the need to continually build his leadership capacity. Pertuni also facilitated this need.

At the end of 2017, through the support of the Higher Education Project, together with Juwita Maulida Rahmawati, a student from Jakarta, Pertuni sent Wikan to attend the Leadership Workshop for the Youth in Bangkok organized by the World Blind Union – Asia Pacific. In 2018, when Pertuni’s 2018 Country Champion activity was held, Wikan was
chosen along with 34 other students with visual impairment from all over Indonesia. During the meeting, Wikan wholeheartedly demonstrated his leadership capacity, which was full of ideas, typical of young people.

The first non-profit organization where Wikan started to build a career portfolio was the Coalition of Persons with Impairment Organizations, which in 2020 collaborated with the Center for Inclusive Policy (CIP) to conduct research on the extent to which the Indonesian government allocates its budget for persons with impairment. Wikan became a research assistant in this project. Armed with good English skills, he had no difficulty interacting with the CIP team in virtual meetings.

Wikan then applied for a position with UNICEF as a Disability Inclusion Officer. He was successful and entered into a one year contract and was responsible for working closely with community organizations serving persons with disabilities and encouraging them pay greater attention to the inclusion of children with disabilities into the general UNICEF development programs.

**Alfian’s Story**

Similar to Wikan, Alfian Andika Yudistira (Alfian) also saw that building his portfolio in a non-profit organization could be a good place to improve himself and start a career. In early 2021, this anthropology graduate from Airlangga University became a District Focal Point in the USAID Mitra Kunci Project which promoted employment empowerment and entrepreneurship for persons with impairment in the East Java region.

When the Pertuni Higher Education Project held a Pre-Employment Soft Skills Training in 2017 in Surabaya, Alfian was one of the participants. At that time, he was a 3rd semester student who was also active as the administrator of PERTINI in the East Java Region. He essentially showed that he was a person with a good foundation of leadership. He had cultivated this since he was Head of the Education and Training Bureau at PERTUNI in East Java.

The Pre-Employment Soft Skills Training that he participated in generated momentum to further shape and mature his self-leadership abilities. When Alfian participated in the recruitment process to become a District Focal Point for the Surabaya area in the USAID Mitra Kunci project, those who interviewed him asked how he had been living as a person with a visual ability and complete his higher education. This was an indicator that USAID Mitra Kunci was making efforts to obtain information about this prospective employee with a visual impairment. Finally he succeeded in convincing the institution that he was suitable to perform the duties that the open position entailed. “He can carry out field tasks well,” commented one of the supervisors who monitored Alfian’s work performance.
Pertuni also made Alfian a role model for blind students who are currently working hard to prepare themselves for a future with a career. "We need figures in society who also understand public policy matters. And I want to be one of them," said Alfian.

**Irma Hikmayanti**

Irma has known Mitra Netra since she was a student at the Padjadjaran University Faculty of Law. Initially, she was a volunteer who taught English to students with visual impairment who attend special schools and lived in a dormitory in Lebak Bulus, South Jakarta. At that time Irma had begun to experience decreased vision due to glaucoma, which started when she was 6 years old. After completing her education and becoming a law graduate, Irma continued her studies at the University of St. Thomas, Houston, Texas. In 2008, her vision declined more significantly until she finally lost all her sight.

Irma came to Mitra Netra to access the necessary support services: counseling, learning to read and write Braille, learning orientation and mobility, and last but not least, learning to use a computer with the help of a screen reader application.

When Irma found out that Mitra Netra would be holding a pre-employment training in 2009 and knew what she would learn in the training, she signed up. Irma was an extremely active participant. During the training, she worked as a freelance translator at CBM Indonesia, an international non-profit organization with representatives in Indonesia. However, she felt that working as a translator did not maximize the growth of her interpersonal skills.

Through the “Understanding Your Own Strengths and Weaknesses” session, Irma rediscovered her potential as a teacher (volunteer teaching English for students with visual impairment). Mitra Netra also gave Irma the opportunity to develop that potential by asking her to become an English teacher for persons with visual impairments. Not only that, when Mitra Netra had the opportunity to place persons with visual impairments as English teachers at ISS Indonesia, an outsourced institution that provides English language courses for managers (Business English class), Irma became one of two people that Mitra Netra promoted and that were accepted.

In 2011, SheCAN! acknowledged what Irma had done for persons with visual impairment and she received a SheCAN! Award in the field of education. Not only that, in 2012, Irma was also selected as one of the nominees for the Liputan 6 Awards, also for the education sector.

However, when the COVID-19 pandemic took hold and English classes had to be held virtually, Irma’s students also came from various cities throughout Indonesia. Irma was
responsible for dealing with the visually impaired from different areas, with different characteristics. This has further refined her social interaction skills, enabling her to develop more optimally.

This blind woman who loves to sing has finally found herself getting into acting. This is also due to her ability to explore her potential, which she essentially untapped through the pre-employment training.

Vina Ridwan’s Story

Vina started losing her sight when she was in junior high school due to a traffic accident. It started with a gradual decline in vision, then when Vina was in the final year of high school, it finally became more severe so that she quit school. Vina quit school because she and her family did not understand how persons with visual impairment could get an education.

Vina heard a presentation by Mitra Netra which was broadcasted by a private radio station. This presentation explained how the institution empowered persons with visual impairment, including providing support services and facilities to those who were studying. It wasn’t long before Vina asked her family to come to the Mitra Netra for more detailed information.

After receiving the necessary rehabilitation services, Vina agreed to Mitra Netra’s suggestion of equivalence education to complete the high school level that she had left after losing her sight. After completing high school through equivalency education, Vina continued her education at the Muhammadiyah University Jakarta in Communication Science with a concentration on Public Relations. When Vina was first pursuing higher education, the Indonesian Blind Union (Pertuni) was in the pilot phase of implementing a project to accelerate access to higher education for persons with visual impairment, which was later known as the Higher Education Project. Vina was one of the beneficiaries of the project under the coordination of Mitra Netra, the agency chosen to as coordinator of the pilot project implementation in Jakarta.

When Mitra Netra conducted pre-employment training in 2009, Vina was in her 6th semester. The training came just in time because she was beginning to think about what she would do after completing her higher education.

For Vina, one of the memorable topics was Knowing Yourself. She continues to carry the lessons from that session to this day. Mitra Netra asked Vina together with Irma Hikmayanti, a fellow pre-employment training participant, to fill in the English session. This session encouraged participants to improve their English skills. From this session, Vina discovered her potential and interest in teaching English.
When Mitra Netra and Brona O’Donnell (volunteer) approached the InterContinental Hotel to explore the possibility of the hotel being willing to provide internship opportunities to pre-employment training participants, it was Vina who was chosen for an internship as an English instructor for hotel operational staff.

For Vina, the opportunity to teach English at the InterContinental Hotel was a very comprehensive “life class.” There were many things that Vina cultivated from this opportunity: mobility and the ability to use public transportation; the ability to manage time because she was still actively studying; good appearance and attractiveness considering she worked at a hotel, where appearance is very important; and the ability to master a class where all the students were people without visual impairment. Together with Irma Hikmayanti, Vina was accepted as a freelance teacher with a contract system.

Juwita Maulida Rahmawati

Juwita is an alumni of the Pre-Employment Soft Skills Training organized by Mitra Netra with the support of the Pertuni Higher Education Project in 2015. This is the first batch of trainings supported by the Pertuni Higher Education Project. Juwita was a 4th semester student in Communication Studies at Muhammadiyah University, Jakarta.

This woman with a visual impairment from the province of East Java began to experience decreased vision at the age of 15, for a reason that ophthalmologists were unable to confirm. Juwita’s success in completing her high school education was a tremendous struggle for the youngest of the two siblings and her parents. Juwita finally decided to move to Jakarta after learning of Mitra Netra, an institution at the capital that provided the facilities and services needed by the blind to study and prepare for work.

With the support of Mitra Netra’s services, Juwita, who had just lost her sight, learned to adapt to the conditions of those with visual impairment, especially in performing daily activities related to education: reading books in the form of audio books and electronic books that were accessible to the persons with visual impairment, using computers with the help of a screen reader application, and practicing environmental orientation and mobility independently using a long cane. Armed with these basic skills, Juwita continued her education to college in 2013 and completed her studies in 2018.

While attending the Pre-Employment Soft Skills Training, Juwita, who at that time began to think about the occupation she would have after completing higher education, benefitted greatly from the topics learned in the training. Through the Knowing Yourself session, Juwita learned to recognize who she was, her strengths and weaknesses, how to maximize her strengths and minimize her weaknesses, and understand that having weaknesses is normal.
After attending the training, Juwita began to see the positive side of herself more. In her experiences at university, for example, if there were group assignments, other group members trusted her with certain parts of the assignments that they had to complete. Juwita began to realize that it was proof that “she is capable.” Moreover, other people, namely her group members also believed that “she is capable.”

After spending some time participating in Pre-Employment Soft Skills Training, she began to explore her potential in writing. After graduating from university, she sought out possibilities of participating in trainings to improve her creative writing skills. She got her first opportunity from Mitra Netra, who collaborated with Suarise Indonesia in conducting content writing training for persons with visual impairment. Suarise Indonesia is a business institution committed to providing content writing training for the digital world for the visually impaired. Juwita was one of the participants in the first batch in 2018.

Juwita became one of Suarise Indonesia’s talents who regularly assists with the branding needs of various products by producing text to be uploaded on the brand’s social media. As a freelancer, Juwita realized that she had to have excellent time management skills. She is grateful she developed this in the Pre-Employment Soft Skills Training.

After starting her career as a freelance content writer, she truly understood and realized the importance of building effective communication skills.

As a person with a visual impairment who is now empowered as a result of participating in a series of empowerment programs, Juwita also intends to do the same thing for others in a similar situation. In 2019, this young woman who likes casual and sporty looks formed Blue Lotus, a start-up business entity that focuses on serving digital asset management and providing digital content for institutions in need.

“I want to grow up to be a writerpreneur, build a business armed with the ability to write,” Juwita Maulida Rahmawati shared.

**Muhamad Adi Nugraha**

Muhamad Adi Nugraha or Nugi is the youngest of three children. Born to a father with a visual impairment due to glaucoma, like his father Nugi has a visual impairment from glaucoma as well. He started experiencing decreased vision in high school.

Nugi was a young man who loved programming. That’s why after high school, Nugi, with his decreased vision continued his studies at Gunadarma University in Informatics Engineering. However, because he didn’t understand how to adapt to his declining vision, and the university didn’t receive any information on how to support students with visual impairment studying in the Informatics Engineering study program, Nugi did not continue his studies even though he
was still in the early stages of university. He then switched to the English Education study program at Muhammadiyah University in Jakarta, following in the footsteps of his father who also studied English Education.

When Mitra Netra held a pre-employment training in 2015, Nugi registered as a participant. At that time he was in his fourth semester, participating in the Goal Setting session, Nugi was not sure if he really wanted and would become an English teacher. However, he just wrote down that goal: an English teacher.

Although he was still unsure about his goal of becoming an English teacher, when formulating an action plan to achieve that goal, he consciously wrote: “taking the TOEFL test,” because he had to take the test for his goal. At the same time, he realized that as someone who had recently become blind, he also needed to equip himself with basic skills to make it easier for him to perform daily activities. One of these basic skills was Orientation and Mobility. It didn't seem easy when Nugi first found himself having to navigate with the help of a long cane. However, he was able to eliminate this feeling of it's “not easy” through continuous habituation.

He kept trying to do informatics by himself until finally in 2019, Mitra Netra held a Programming Training of Trainers (TOT) for computer course instructors and the Research and Development Team with the support of ON-NET (Overbrook-Nippon Network on Educational Technology). This provided Nugi with the opportunity to take part in a training related to programming. It was in these six months of training sessions that Nugi’s potential for programming was truly refined.

Prayudi Utomo (Yudi), one of the leaders in the Indonesian PHP Community was the trainer that Mitra Netra chose to guide the training. From one of the guest speakers, namely the Head of IT at Baznas (a non-profit organization that works to collect and distribute zakat for Muslim communities in Indonesia), Yudi learned that Baznas was in need of a programmer. This institution wanted to recruit programmers from people with impairment. At first, the Head of IT was still unsure whether it was possible to recruit programmers who were visually impaired. In such a state of doubt, Yudi asked the Head of IT to immediately try, by offering the position to one of the Netra Mitra trainees; and Nugi was chosen.

After conducting a face-to-face interview, the Head of IT was impressed with Nugi’s ability. They also decided to recruit persons with visual impairment who have long wanted a career in this field as back-end programmers.

Below is the testimony of Achmad Setio Adinugroho (Thio), Head of IT at Baznas, about Nugi:
“Nugi is the only programmer with an impairment in Baznas. Even with his limited vision, he has a high work ethic and always delivers all assigned tasks. Currently Nugi is taking part in the development of financial applications. Nugi and I work together. Nugi works on the logic and database parts, while I work on the front-end. We’ve both had a lot of discussions. If there are difficulties, Nugi does not hesitate to ask me. When Baznas recruited programmers from among people with impairment, many parties within Baznas questioned whether it was possible for a person with a visual impairment to do programming work and Nugi has proven that possible.”

“All the training materials that I received while attending the training at Mitra Netra are the foundation. Then, I have to adapt it according to the needs of the institution where I work,” explained Nugi. “I want to do what’s best for the institution I work for. This is also proof that persons with visual impairment are also able to work as back-end programmers.”

There is one thing that he honestly admits remains lacking in him: interpersonal skills. Nugi is well aware of the importance of these skills. Before the pandemic hit, a simple method that Nugi applied to develop interpersonal skills was to frequently attend various events. There he had the opportunity to meet many people, and this has helped develop his communication skills.
Indonesia is slowly but surely moving in a positive direction. In terms of policy, the new Impairment Law, Law No. 8 of 2016 has mandated a work quota system. For government agencies, including state-owned enterprises, there is a mandate of a 2% quota. This means that every government-owned institution, both at the national and local levels, is obliged to employ workers with impairment amounting to at least 2% of all employees. Meanwhile, for the private sector, the quota mandated is 1%.

The Impairment Law specifies that Government Regulations be issued to further guide its implementation. One of these Government Regulations addresses the establishment of Impairment Service Unit for the Workforce. One of the tasks of this unit is to bridge the gap between persons with impairment who want to enter the formal sector labor market and employers who would like to recruit persons with impairment.

The Ministry of National Development Planning even started paying serious attention to employment issues related to persons with impairment. Currently, the Ministry is planning to establish an Inclusive Job Center at every branch office of BP Jamsostek, a public insurance body, throughout Indonesia. This body consists of companies and nonprofit organizations, which in the future are expected to also recruit persons with impairment. Inclusive Job Centers are expected to collaborate with resource centers that empower persons with impairment to prepare themselves as prospective employees who want to have careers in companies under BP Jamsostek.

The private sector did not want to be left behind. The Indonesian Employers’ Association (Apindo), with support from USAID, developed a guidebook for Building an Inclusive Work Environment. This guide was made for private sector companies recruiting persons with impairment, which is of course expected to develop a more inclusive working environment.

Pertuni has done the same. At the start of 2021, with support from the Higher Education project, Pertuni published the Guide to the Recruitment and Placement of Workers with Visual Impairment. This guide is expected to be a reference for employers who wish to recruit persons with visual impairment with confidence and no worries.

The steps taken by Pertuni and Mitra Netra in developing Pre-Employment Soft Skills Training were certainly in line with existing developments. Through the Pre-Employment Skills Training that have been held since 2015 with support from the Higher Education Project, the younger generation of persons with visual impairment becomes equipped with exemplary soft skills that equip them to be recruited as employees.
Accessible materials and employer support
A. A Challenging Start

The Vietnam experience in this publication will deal with two dimensions namely - accessible materials and employer support. The project believes that availability of accessible materials expands opportunities for visually impaired individuals in securing successful employment.

Fifteen (15) years ago visually impaired students in Vietnam were largely denied opportunities for higher education. Throughout the country, only 10 students were officially welcomed, as students, in five (5) higher education institutions in major cities such as Hanoi and Ho Chi Minh City. Further, when they completed their studies they did not even receive a diploma but only a “token” confirmation.

The root causes of this situation were many. First, as Government's policies and legislation regarding people with disabilities were barely existent, the admission decision rested entirely upon the institutions. Hence, impaired individuals and support groups were left to their own devices leaving only those with a great deal of luck and an equal measure of persistence to gain admission.

Learning materials

The lack of accessibility to academic learning materials, assistive tools and a dedicated learning infrastructure for the visually impaired students posed major problems. Access to specialized department-specific materials largely depended upon the individual institutions, departments and sometimes the professors themselves. It was not uncommon for students to fail to gain access to course materials before the course was completed.
In the classroom, the association between visually impaired students and sighted students was not smooth due to the lack of adequate exposure and mutual misunderstandings. The overall impression held by sighted peers and often by the professors themselves towards blind counterparts remained rather uninviting. Further, the learning opportunities and subject areas that visually impaired students could choose from, was confined to Sociology, Psychology, Special Education, Language studies, History and Music education.

The physical environment

Outside of the classroom came another setback: The campus facilities and infrastructure presented many accessibility challenges for students with disabilities. Mobility within the campus from classroom-to-classroom was difficult. While compassionate sighted students wished to be of assistance, they did not learn how or ask what they could do to help resulting in increased lack of confidence and further isolation among the visually impaired students’. Inadequate training on independent living and Soft Skills was another factor hampering inclusion.

Absence of coordinated support

The community of the visually impaired persons sought a well-coordinated system to support them in achieving their shared goals and the exchange of resource materials. They felt very lonely in their struggles for academic achievement and unsure of their competency and their decision to pursue higher education. Adding to these hardships, the financial burdens faced by students and/or their family became another major hurdle for prospective students to weigh in making a decision about continuing on.
Employment: Few of the students that did struggle on and graduate were able to secure employment commensurate with their interests and academic preparation. This led many to turn to “traditional occupations” in areas such as -massage, -street or home vending, -teaching at special centers of and for the blind, or performing music. This was not only discouraging for these graduates but also for students who were considering higher education.

Those few that were able to secure employment faced a different set of difficulties. First, their work performance was compromised, by the lack of assistive technology aids at the workplace. Secondly, visually impaired workers had to spend a great deal of time to avail ride hailing services as motorcycle taxi services like Grab did not exist at the time.

By now if you have not become so discouraged by all of these barriers and impediments and stopped reading, we hope you will read on and learn how the ever resilient and creative blind community in Vietnam turned this situation around in less than fifteen years. In the process many lessons have been learned and we hope what follows will be of interest and use to those facing similar challenges.

To view the video on “Challenges in employment”, either scan the QR code or click the link.
https://youtu.be/hur4ZpOOl8U
B. Empowerment fuels change

In 2007, The Nippon Foundation (TNF) working with the International Council for Education of People with Visual Impairment (ICEVI) undertook a bold regional initiative. The broad goal of this initiative was to bring about systemic change through the empowerment of persons with visual impairment targeting three specific issues:

1) expanded use of assistive technologies,
2) making higher education more open and welcoming to qualified students with disabilities and
3) expanding access to open market employment that matches the interests and talents of persons with visual impairment.

In this chapter we will look at how we went about addressing the many barriers mentioned and turned the situation around. Today, on average, over 200 blind or visually impaired students are pursuing higher education annually in some thirty (30) colleges and universities with wider educational options from natural to social sciences and in a friendlier, more inclusive environment. Most importantly, they are being exposed to a wider range of open-market employment opportunities with significant improvements in job placement and retention for both male and female job seekers that is narrowing the gender gap.

Accessible academic materials and technology aids

Amidst the fast-changing social canvas, Sao Mai has remained focused on our mission to spearhead in almost all activities, the development and application of technology that assists blind and visually impaired people in Vietnam and around the world. We envision ourselves as “a guiding star” by sharing materials and tools that support individuals in higher education, the world of work and independent living. Our solutions come in multiple shapes and forms.

The most fundamental obstacle to be overcome by the blind was accessible academic materials and resources. Students with visual impairment have for too long been forced to depend on the assistance of their peers to read out loud for them or to have their lessons recorded.
Vietnam’s visually impaired student network

Secondly, by establishing a network, we have brought together visually impaired students from different universities to improve their competencies and provide them with assistive services. Vietnam’s Visually Impaired Student Network began as an online forum in 2013 for blind internet users, where they could exchange their knowledge and skill sets with one another.

It quickly grew into a far bigger forum for support groups and individuals to rally around and raise their voices on contemporary issues, such as greater access and less discrimination toward their pursuit for higher education. The network also provided special learning tools and equipment, especially laptops, while simultaneously extending into physical resource centers, fully equipped with computers, scanners and screen reading software products, situated within selected universities. In addition to such functions, the resource centers have become a platform and framework for training initiatives and workshops.

Our approach for accessible materials

Sao Mai set out a detailed framework while devising a special route for blind learners, as follows:

First, Sao Mai established a support network and promoted collaboration between organizations involved in producing accessible books and creating book indexes in order to avoid duplication of effort and waste of resources. Blind students in the network were able to send a request for an accessible book, and promptly be informed what was available. An online library was developed, that is dedicated to serving everyone from students to professors, and to distributing materials efficiently. By 2023, we are set to expand this accessible network/library nationwide to benefit all readers and organizations.
Training the trainer

Thirdly, in alignment with this initiative, Sao Mai Center has collaborated with the Overbrook-Nippon Network on Educational Technology and TNF to implement training-the-trainer courses and establishing twelve (12) computer resource centers across Vietnam, with a focus on remote rural areas. By the end of 2021, Sao Mai, ICEVI and ON-NET had collectively trained over 400 source teachers and technicians on assistive technologies and twenty-six (26) resource centers in twenty-three (23) provinces and cities that have prepared thousands of competent blind individuals, able to work and live independently.

An accessible online library

The online library we developed currently holds over 7,000 academic titles and over 100,000 digital copies of sheet music supplying a comprehensive selection of materials ranging from primary to advanced education. The Sao Mai Center in cooperation with Accessible Books Consortium (ABC) under World Intellectual Property Organization (WIPO) has joined Global Book Service gaining access to another 600,000 titles from 100 international libraries dedicated to serving individuals with blindness worldwide.

To view the video on “Accessible resources”, either scan the QR code or click the link.
https://youtu.be/9IAQmwPcuSs

Sao Mai’s Braille & other software

The establishment of the above network and library has developed organically and inextricably with our software development initiatives, Sao Mai’s outstanding forte. Since the very beginnings, we have recognized inherent shortcomings, and tried our best to galvanize our assistive software products while minimizing production costs.
A prime example of this is the Sao Mai Braille software capable of transcribing materials and images into Braille, be they in Mathematics, geometry, charts, or musical notations. Today this software is free and available in 36 languages and various interfaces, with extensive international downloads. Sao Mai Braille is a product that we’re most proud of, a true powerhouse of our creative efforts.

Where music reading had been a big obstacle for blind music students, we have developed SM Music Reader as a response. The first of its kind in both Android and iOS, the software benefits both sighted and visually impaired people alike to read, compose and share their work with great ease.

Last but not least, thanks to close coordination with ICEVI and ON-NET, Sao Mai Center and our Myanmar colleagues have together created a text-to-speech software that we refer to as our “lovechild” the SM Myanmar. This is the first Text-to-Speech, software for the Burmese language a development the blind of Myanmar have dreamed of for many years. Considered by many a true revolution, SM Myanmar TTS has, since its birth, transformed the lives of thousands of blind Burmese, giving a tech solution that supports them in their education, employment and independent living.

Free and widely accessible, Sao Mai Braille, SM Music Reader and SM Myanmar TTS are offered by Sao Mai through our collaboration with The Nippon Foundation and have tremendously benefited students and instructors and learners in Vietnam and abroad while gaining a 2020 International “Zero Project Award” for Innovative technologies (ICT).
What are the beneficiaries saying?

Below are a sample of the many testimonials shared with us by users of our products and services.

“I am Ta Binh Duong, totally blind and now in grade 10 in Hanoi. Sao Mai library has been a companion of mine across the secondary high years, since grade 6. Every title required in my curriculum is easily found in the library, readable via computer or Smartphone. Whenever I want to look for a reference book, the staff members at Sao Mai will locate and convert it to an accessible format really quick. I hope that the library will keep expanding and accompanying other visually impaired or blind students like myself.”

“I am Nguyen Manh Hung, a totally blind person. I am indebted to the prompt and tremendous assistance by Sao Mai Center for a regular and stable life that I’m living. Since as long as 2006, the information technology trainings had greatly assisted me in both my learning and test taking in the university environment. The notebook computers and voice recorders granted from Sao Mai Center has boosted the confidence level amongst visually impaired learners. Sao Mai Center pioneered in making them available in audio formats and digital versions for visually impaired people’s better access, which became a backbone for future digital accessible library, consisting of 7,000 titles, of today. Sao Mai has offered post-grad scholarships for the visually impaired students, empowering their desire to conquer greater knowledge in life.”

“I am Roxana, a totally blind music student from Iran. Let me first thank Sao Mai staff members for their outstanding efforts in providing such a great online music library for blind users around the world. Being able to access this large and wonderful collection of sheet music in XML format has been a life-changing experience for me, and a great help in my piano and vocal studies.”

“I am really enjoying using this SM Music Reader app, and I cannot wait to find sheet music online to read. I am a totally blind piano teacher who uses this app for my students as well as my own music.” Betina Vega

“First of all, congratulations on such an important contribution to help blind people. I have been looking for something like this for many years. SM Music Reader is a wonderful app, very accessible.” Keith and Chris Ankin
“My name is Yel Htet Naing. I am a visually impaired person from Myanmar. I am a university student, major in History. SM Myanmar TTS is very supportive for my study and social communication. Now, I can use Dictionary and read contents in Burmese on Wikipedia. I also use the SM Myanmar TTS for social media such as Face book and Messenger as I can easily read and write in Burmese better than before. On YouTube, there are some channels in Myanmar language and Myanmar TTS is fully supportive while I am streaming. I feel that SM Myanmar TTS is a light for the visually impaired community in Myanmar. I am grateful and thankful to the contributors and the donors for making SM Myanmar TTS.”

“My name is Than Htike from Kyimyindaing School for the Blind, Yangon. I graduated from Western University Yangon with a degree in History. This application promotes the use of Smartphone even for the ones who did not have chance to attend schools. Before this application was released, our blind community network in Myanmar was so small but now, we can communicate and explore throughout the world as we do not have language barrier anymore. I would like to thank all of you who made this happen.”

“I am Hoang Ly and currently living in Ho Chi Minh City, Vietnam. I lost my total sight when I was two years old. I completed my diploma in Social Work at the Ho Chi Minh University of Social Sciences and Humanities. Now, I am working for the Vietnam Higher Education Support Project for the blind. My responsibility is to coordinate the accessible academic material production activities. In our project, we have used most of Sao Mai’s software such as the Sao Mai VNVoice to read Vietnamese documents, Sao Mai Typing Tutor to help students learn and improve keyboard typing speed, Sao Mai Braille to produce Braille books. In my work, I use Sao Mai Braille every day. With its combined features and providing free of charge, I can independently prepare, translate, and print documents into Braille to provide for blind students…”

“I am Haipeng Hu, from China: founder of BrailleOrch and Open Braille Music projects, and technical consultant of DAISY Music Braille Project. As a professional blind musician and braille music transcriber, I think Sao Mai’s software development activity, especially Sao Mai Braille, is the ultimate solution for braille translation, solving braille translation of literature, math, graphic and music in one package. It has the biggest flexibility and integrity, suitable for blind students and readers, amateur and professional blind musicians, and professional Braille and Braille music transcribers/agencies. The team has very experienced software experts who know programming, Braille, math, and music. What’s more, it’s completely free, and can be accepted by everyone. I am very optimistic about this project.”
While not obvious to most people, employment begins with mobility, a function significantly compromised due to blindness or visual defects. One’s ability to independently navigate between destinations on a daily basis further increases opportunities for gainful employment. Therefore we place much attention on independent living skills.

Key challenges in the employment-front

Empowered by our project successes and countless collaborative works, Sao Mai Center is privileged to have a unique vantage point from which to observe and understand our community, the many gains that have been achieved, and yes, the many challenges remaining, despite the many gains achieved over the past fifteen (15) years.

One of the challenges was that a comprehensive employment resource database that blind job seekers could access did not exist. However, since 2014, while supporting the expansion of access to higher education, we have placed greater focus on building competency and opening opportunities for blind graduates to become their own best advocates in finding and retaining satisfying open market employment through the following actions:

- Organizing career orientation seminars for high school students and fresh university entrants, guiding them in establishing an individual development plan during their time in university and beyond.
- Offering application of technology in chosen majors participated by blind students to boost competency especially at work. Simultaneously, organize soft skills and independent living skills for fuller participation and integration at work.
- Coordinating with businesses in training courses or workshops for visually impaired candidates.
- Maintaining a line of communication with businesses recruiting blind employees, through guidance programs to instill critical competencies in blind people while establishing a communication pipeline for both recruiters and potential recruiters.
- Organizing job fairs to set up meetings between blind candidates and potential recruiters, wherein the candidates can submit their application and practically attend the requirements sharing from the recruiters.
- Connecting with other job centers catering both visually impaired and sighted people to make the existing resources known to visually impaired candidates.
- Encouraging voluntary exploration and submission to all businesses looking for candidates with adequate skills, which not only increases recruitment probability but also raises the public awareness towards this specific labor demographic of disabled and visually impaired workers.
- Supporting and encouraging greater voice for the blind in achieving equal access to public services.
- Planning and introducing new job opportunities, especially online opportunities, such as tele sales, tele marketing, software development, YouTube content creation, and copywriting.

As a companion to the blind towards betterment in their employment journey, Sao Mai Center also extends support beyond the addressed issues to timely follow up with both recruiters and the recruited, such as software skills enhancement, or counseling the businesses to work better with the recruited.

Orientation and mobility trainings, including assistance in completing applications, are regularly held.

Sao Mai also offers independent living support programs, such as connecting volunteers to accompany blind individuals to provide assistance during their first few working days with on-site orientation.
To widen the recruitment network, the project has adopted an innovative approach to foster communication between businesses; ones recruiting blind employees and ones planning to, through shared success stories. The project goes on to demonstrate testimonials of real-life role models to inspire and give faith to the successors. The exchanged stories do help spread the positive vibe towards a more inclusive and integrating society in which inequality in education and employment will no longer exist.

Let’s look at two short stories from employers:

**Le Thanh Nhat**, Managing Director, OneFix Co., Ltd | Website: https://onefix.vn/
(Water and electrical appliances and equipment solutions to households and businesses).

“As a solution provider to families and businesses alike, we maximize the internet as a platform to reach for potential customers. Our content and online marketing/sales team is a fundamental asset for us to sustain our operations. In 2018, thanks to Sao Mai Center’s introduction, we have recruited a visually impaired candidate to work as a customer service and scheduling staff member. In 6 months, owing to his computer and interpersonal skills, he has excelled at his assignments and established his own value in our company. Also, we soon recognized the humane values in a model consisting of differently-abled workers; a miniature of a just and fair society.

With this experience in mind, we have decided to extend our collaboration with Sao Mai Center to organize trainings of necessary skills including computer literacy, online marketing and customer care; to date, we have employed 4 more visually impaired workers, whose efficiency and capacity we’re very much comfortable with. They have contributed significantly to our company culture and strategy.”

**Francesco Lieng Tran**, CEO, Vinacacao Vietnam (est. 2007)

“At Vinacacao, we started employing our first visually impaired workers as tele-sales in 2012. A year later, we collaborated with Sao Mai Center through job campaigns for blind students. With their great assistance in improving the workers’ computer skills, team-working, orientation and mobility, over the past 10 years, Vinacacao has additionally recruited more than 30 visually impaired workers; 07 of them currently being employed, all working in business operation.
In our recruitment policy, there is no difference between the workers with and without disabilities. We do not recruit disabled workers out of charity, but as a win-win solution to increase our competitive edges and efficiency at work. All employees are supplied equally with the equipment and tools necessary for their work. The visually impaired workers are to be provided with Sao Mai Center’s assistive software.

We highly regard our visually impaired employees for their concentration and determination at achieving the targeted goals. With our growth, we will not only employ more visually impaired workers, but also differently abled ones to join our team.”

Long before the push to online work driven by the COVID-19 outbreak, blind people in Vietnam and worldwide have established a strongly connected and supportive network of online, distant learning and training for themselves, facilitated by English as an important lingua franca.
Today one finds people who are blind in almost all major fields which transcends well beyond what was previously considered possible.

Building upon a host of successes from the projects supported by The Nippon Foundation through ICEVI and ON-NET, the Sao Mai Center has continued a journey with numerous local partner organizations as well as the blind students in developing solutions and action programs, through which there have been many outstanding achievements. Most importantly, these projects have created a strong and sustainable foundation that supports equal access for blind students who wish to pursue higher education and through doorways leading to employment and greater social inclusion for all.

Access to higher education

Currently, over 200 blind or visually impaired students are annually engaging in higher education. Very importantly this is no longer confined to only a few large cities but rather to over 30 national educational institutions throughout Vietnam. These students receive a warm welcome and are provided with the technology support that allows them to compete with sighted students on a level playing field.

Today, over 70% of material demands from students can be met through our accessible library, which was reaching only 5% of demand when we began this initiative. The presence of blind or visually impaired students within higher education institutions has become so commonplace that we have achieved the type of critical momentum that assures long-term sustainable change and resulting in significant steps forward in achieving full social inclusion.
Employment opportunities

Sao Mai Center has provided assistance leading to job placement for 214 visually impaired people working in many different fields and professions, from telesales to call center attendants, customer-care staff to online marketing, software/web programming, language translation to teaching, music-production and performance services to social work and counseling. 146 of these individuals have completed their university education.

Visually impaired people have conducted online courses on languages, music, and other subjects on demand even before COVID-19 required social distancing. Always savvy with new technology, the transition from the physical classroom to the digital classroom has never been easier for most of them, who now can teach via their Smartphone or hold online meetings with little difficulty.

In short, as challenges are slowly but surely overcome, the current landscape for the blind people both in learning and working is most promising. The entire network we have built is functioning in a smooth and supportive manner and is with each passing month reaching more people and giving them the opportunities to live independent and prosperous lives.

To view the video on “Impact on employment”, either scan the QR code or click the link.
https://youtu.be/Rv12UtZ17Q8

As we conclude this section we would like to leave you with the stories of two young blind persons, who completed higher education and are now working in mainstream companies.
One Sunday, all of a sudden, my laptop for some unknown reason just decided that talking to me no longer had its usual pleasure. And then it struck me, that how various assistive technologies I’d been using throughout the last 18 years, always made a great equalizer in bridging the gap. It’s been bringing me ever closer, neck and neck to the sighted.

Every day I live - from my daily commute about the city, to my teaching and volunteer work. At first, I got the joy of understanding the jumble of words when the screen reader, Jaws spoke, but it quickly grew to the pleasure of knowing my whereabouts around the PC. Then came a hick-up when English unfortunately was not the language I’d found quite easy to understand. We didn’t have any means to read Vietnamese back then and I felt like my new found joy could be short lived. But of course, I wouldn’t have been sitting here to relive those beautiful moments without that heroic introduction, the introduction of Sao Mai Text to Speech (TTS) together with a small add-on enabling Jaws to read Vietnamese.

I find I don’t have the words to describe the delight Sao Mai TTS brought to me. It opened the whole new world, the world that due to my visual impairment, had been kept in a separated sphere away from me. My imagination, through these extending worlds, got me far beyond my restrictive so-called disability. A few years later, I found myself working my exams, with Sao Mai TTS being the verbal enabler always in the background.

At university, Sao Mai TTS became the agent to my teachers, my class notes, and my research. Besides, as a more proactive volunteer at Sao Mai Center, I led a team to win the funding of ICEVI to work with Sao Mai in many projects aimed to help the blind lead more independent lives, acquiring many skills through that work, one of it being the skills to work with many differently-abled persons.

From early 2016, when I was still doing my second year of Professional Communication at RMIT, I’d already been taking an active role in the position of consultant on equitable access to education for the Equitable Learning Service (ELS) at the university. Using my rich knowledge regarding assistive technology, I also gave a hand in the accessibility audit for a new interactive learning module that the university’s English Department was about to launch.

Then I left all amenities, services and conveniences that a big city like Ho Chi Minh had to offer, to relocate to Long An Province in 2019, a semi-industrialized cluster to the Southwest. This was where all my adaptability, soft skills and interpersonal experience learnt from various work and positions started to kick in. Besides, I also volunteered to help Bamboo Bridge Vietnam teach English to children and teenagers living at Te Phan Orphanage.

Thank you, Sao Mai. Thanks to Mr. Dang Hoai Phuc, and all the people who have been working so hard in the background, who may not have received the glory they so deserve for helping me and so many other visually impaired persons to reach further into the society, and to live with more meaningful deeds in their lives.”

- Vinh Nguyen, a graduate of RMIT university
“I am Giang Nguyen, a Vietnamese Software Engineer with visual impairment. I have been working in Singapore for 5 years. I will briefly tell my story of becoming a blind Software Engineer. That is a hard but interesting chapter of my life.

I chose to study Computer Science when I was in the second year at high school. That was a tough decision because this major was not accessible to the blind. I had to face numerous criticisms from friends and family. However, I was interested in something more innovative and different.

I was influenced by a close friend who also had visual impairment. We studied in the same high school. He graduated and studied Computer Science at a university in Ho Chi Minh City. One year after that, I also joined him at the university and was also inspired by and received support for my university education from Sao Mai Center for the Blind.

At the first glance, Computer Science is a challenge for people with blindness. There are courses requiring students to understand, draw, and design diagrams. Students have to try different alternative ways to study, to take examinations, and to complete course projects. Fortunately, although it is challenging, Computer Science is still accessible enough for students who are blind as long as the instructors are willing to support them. Besides, Sao Mai has published numerous software and tools to support the blind community. Some of the tools, such as the Vietnamese language scripts and the Vietnamese Text-to-Speech engine to support screen reader in reading Vietnamese, are crucial to my daily activity. In addition, their great accessible academic book library as well as their soft skills trainings have been very helpful for my studying performance and personal development. They really motivate me and make me think that people with low vision can still be successful.

In my final year of studying, I applied for an Android Engineer position at Grab, a start-up ride hailing company in Southeast Asia. I was extremely excited and surprised when getting the result announcing that I passed the interview. Since that time, I started my journey as a Software Engineer in Singapore. I have been working in various positions for two companies.

Working in this position is challenging but also interesting. I have been learning various valuable knowledge and meeting numerous talented people.”

- Giang Nguyen, a totally blind Software Engineer, currently working for Apple Inc. in Singapore
The Way Forward

While dealing with transition factors leading to employment, the project partners Resources for the Blind, Pertuni and the Sao Mai Centre have demonstrated how to strengthen prevocational skills in visually impaired students at the school level through which vocational counselling becomes a vital ingredient. The role of media in showcasing the abilities of persons with visual impairment has also become an effective strategy to increase employment opportunities. Orientation of human resource personnel, university faculty and administrators along with Government officials responsible for employment are also considered vital in assisting students with disabilities to secure and retain employment that matches their interests and talents.

Our project partners have put forth their best efforts to share the many challenges faced and interventions developed to improve the current situation facing persons with visual impairment through their transition from education to the world of work. They also are the first to recognize there is much scope for further research, development and sharing if we are to dramatically improve upon what most agree to be the most significant challenge facing persons with visual impairment throughout the world: “Access to decent employment.”

In the case of future efforts the following key issues deserve more attention:

1. Exploring important internal factors impeding gainful employment and strategies that should be used to help students address these potential limitations.
2. Identification of the most important external factors contributing to the limited use of blind or low vision employees.
3. Innovative strategies to help potential employers address and change the status quo.
4. Identifying and sharing resources, individual and collective, that are already working effectively in the employment sector.
5. Exploration of the major gaps in terms of knowledge of the master trainers, existing training modules, monitoring tools to measure the success of employment, prevocational skills, mechanism to reduce attrition from job placement, to name a few.
6. Enumerating additional resources that should be developed to address gaps in current best practices.
The experience of our project partners clearly demonstrates their confidence that a systematic approach to transition does lead to successful employment for ever increasing numbers of persons with visual impairment. The inspiring case studies from both students and employers help us to better understand the many nuances that must be considered as we deal with the process of transition. This publication underscores that addressing the transition issues is vital and that while progress has been made there are still many miles to walk.

ICEVI is grateful to The Nippon Foundation for their support of this publication. The publication team also places on record its sincere thanks to Larry Campbell - Mentor of the Higher Education Project, the managements, staff and students of the Resources for the Blind, Pertuni and the Sao Mai Centre for their excellent cooperation in the successful completion of this publication.
## Appendix : List of Acronyms used

### A
- **ABC**: Accessible Books Consortium
- **ABM**: Accounting, Business and Management

### C
- **CIP**: Center for Inclusive Policy
- **CSR**: Corporate Social Responsibility

### D
- **DAISY**: Digital Accessible Information System
- **DepEd**: Department of Education
- **DOLE**: Department of Labor and Employment
- **DOST-SEI**: Department of Science and Technology- Science Education Institute

### E
- **E-pub**: Electronic Publishing
- **ELS**: Equitable Learning Service

### G
- **GAS**: General Academic Strand

### H
- **HUMSS**: Humanities and Social Sciences Strand

### I
- **IBM**: International Business Machines Corporation
- **ICEVI**: International Council for Education of People with Visual Impairment
- **IT**: Information Technology
- **IPO**: Intellectual Property Office

### J
- **JAWS**: Job Access With Speech

### L
- **Lao PDR**: Laos People’s Democratic Republic

### M
- **MNAB**: Myanmar National Association of the Blind
- **MNFB**: Mongolian National Federation of the Blind
- **MOU**: Memorandum of Understanding
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>NGOs</td>
<td>Non-Governmental Organizations</td>
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<tr>
<td>NVDA</td>
<td>Non Visual Desktop Access</td>
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<td>ON-NET</td>
<td>Overbrook-Nippon Network on Educational Technology</td>
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<td>PA</td>
<td>Personal Assistant</td>
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<tr>
<td>PAVIC</td>
<td>Parents Association of Visually Impaired Children</td>
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<td>PESO</td>
<td>Public Employment Service Office</td>
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<td>PPHB</td>
<td>Philippine Printing House for the Blind</td>
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<td>RBI</td>
<td>Resources for the Blind Inc.</td>
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<tr>
<td>STEM</td>
<td>Science, Technology, Engineering and Mathematics</td>
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<tr>
<td>SPED</td>
<td>Special Education</td>
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<tr>
<td>TNF</td>
<td>The Nippon Foundation</td>
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<tr>
<td>ToT</td>
<td>Training of Trainers</td>
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<tr>
<td>TTS</td>
<td>Text-To-Speech</td>
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<tr>
<td>UNICEF</td>
<td>United Nations International Children's Fund</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<tr>
<td>VSO</td>
<td>Volunteer Service Overseas</td>
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<tr>
<td>WBU</td>
<td>World Blind Union</td>
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<tr>
<td>WIPO</td>
<td>World Intellectual Property Organization</td>
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The Nippon Foundation (TNF) was established in 1962 and is the largest non-profit philanthropic organization in Asia. The Foundation is engaged in many activities, not only in Japan, but around the world.

For more than 50 years, one area of focus has been capacity building programs for persons with disabilities with the aim of achieving their fullest possible inclusion within their communities.

Within Japan the Foundation has provided support in a number of areas including: the deployment of more than 40,000 welfare vehicles, the establishment of The Nippon Foundation Paralympics Support Center for the 2020 Tokyo Paralympic Games, and the implementation of a telecommunication relay service enabling deaf and hard of hearing persons to access telephone services using sign language interpreters.

The Nippon Foundation is actively involved in supporting overseas programs for persons with disabilities with a special focus on programs that improve quality of life for persons with vision, hearing and mobility impairments.

The Foundation’s support to deaf and hard of hearing persons emphasizes use of local and natural sign language together with the written national language. This is implemented through a network that covers all regions of Asia and is sharing sign linguistics and achieving legal recognition of sign languages.

Their support for persons with mobility impairment has focused on the training over 600 prosthetists and orthoptists in six countries in Asia. To date, these programs have provided prosthetics to 500,000 persons over the past 30 years.

The Foundation’s support to blind and partially sighted people began in 1989 when it established a special endowment fund at the Overbrook School for the Blind in the United States. In 1998 a second special endowment fund was created at Overbrook allowing for the creation, in Southeast Asia, of the “Overbrook-Nippon Network on Educational Technology” (ON-NET).

The ICEVI Higher Education Network was initiated in 2006 and has benefitted over 2800 higher education students with visual impairment in the East Asia Region.

In recognition of the continuing global challenges in achieving access to quality education for the millions of out-of-school children with blindness and partial sight, the International Council for Education of People with Visual Impairment (ICEVI), founded in 1952 in the Netherlands, is a membership organisation with a mission to promote access to inclusive, equitable, and quality education for all people with visual impairment.

**Goals**

**Goal 1** : Promoting access to quality education for people with visual impairment including those with blindness, partial sight, deafblindness and additional disabilities.

**Goal 2** : Influencing governments’ and relevant stakeholders’ implementation of the SDGs and UNCRPD in the area of education of people with visual impairment.

**Goal 3** : Improving networking, information sharing and collaboration at national, regional and global levels.

**ICEVI Regions**

The 7 regions of ICEVI - Africa, East Asia, Europe, Latin America, North America and the Caribbean, Pacific and West Asia include over 180 countries.

**Networking with other organizations**

ICEVI works closely with International Non-Governmental Development Organizations (INGDOs) and UN bodies such as United Nations Economic and Social Council (UN-ECOSOC), UNESCO, UNICEF, and WHO.

**Publications**

ICEVI’s biannual magazine “The Educator” is available in electronic version in both English and Spanish and is also posted on our website [www.icevi.org](http://www.icevi.org). ICEVI also publishes a biannual electronic newsletter that is currently distributed to more than 4000 individuals and organizations.

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For further details, please contact:

**Dr. M.N.G. Mani, Chief Executive Officer**
International Council for Education of People with Visual Impairment (ICEVI)
No.3, Professors’ Colony, S.R.K. Vidyalaya Post, Coimbatore - 641 020, Tamil Nadu, INDIA
Telefax : 91-422-2693414  E-mail : ceo201922@gmail.com  Website : [www.icevi.org](http://www.icevi.org)