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FOREWORD

Mr. CHONG Chan Yau, MBE, President of Hong Kong Blind Union

"In my old school days there were always a number of thick Braille books in my school bag and it was like carrying a pile of slates every day I went to school." I think that it has been the common situation for many visually impaired friends in their school days. In order to learn, visually impaired persons do not mind paying extra effort. However with the advancement of information technology, I believe that visually impaired persons should have better learning environment and support to learn with ease.

In his Policy Address 2011, the Chief Executive announced that the Government would proactively develop e-learning in future, and hoped that students could utilize the widely available information technology and Internet to acquire information and new knowledge in a convenient and effective way. In order to allow the visually impaired students to equally enjoy the benefits of information technology, Hong Kong Blind Union launched the innovative "Accessible E-Learning Support Project" in May 2011. The Project helps people with print disabilities, including dyslexia, visually, or physically impaired students in primary and secondary schools, by converting textbooks and learning materials into ebooks, providing free assistive software to facilitate reading, and training students, teachers and parents who need to use e-Learning materials. Through this Project, print disabled students can learn without barrier, achieving our aim of "tackling barrier with e-learning".

Ebooks are more portable than conventional Braille books, students can store the files in computers, tablets and USB flash drives. This greatly reduces their burden of carrying heavy school bags. Besides, students can use the search function to quickly and easily locate the content they want to read. Another advantage of using ebook is that students can add marks and comments onto the documents as their personal notes to the materials, which significantly enhances the effectiveness and efficiency of learning.

In this casebook, students, parents, teachers, school staff and volunteers share every bit of the changes in their lives after they have joined the Project. We hope these could make more people understand the special needs of print disabled persons, more

students can enjoy equal opportunities to receive education, and Hong Kong a barrier-free inclusive society.

Mr. Kenneth CHEN, JP, Under Secretary for Education

Mr LAU Hiu-Fung, often known as the Stephen HAWKING of Hong Kong, passed away in early April. While Hiu-Fung's life spanned only 28 short years, he had never succumbed to his paralyzing condition. With hands that could only move two sticks, he graduated with First Class Honours from Hong Kong Polytechnic University and was recognized as one of the Ten Outstanding Young Persons in Hong Kong in 2010. I hope that Hiu-Fung's courageous life will be an inspiration to all young people. I would like to thank the Hong Kong Blind Union for launching this innovative "Accessible E-Learning Support Project" to help those with reading difficulties. And it is my wish that the students who participate in this programme will be grateful for the opportunity and emerge from the experience with renewed confidence in their future!

Mrs. Fanny LAM, BBS, Chief Executive Officer of Ebenezer School & Home for the Visually Impaired

We are very pleased to note that the innovative "Accessible E-learning Support Project" has been successfully launched by the Hong Kong Blind Union. The project facilitates printed textbooks or reading materials to be turned into an electronic format, thus making them accessible on the computer to students with problem reading the print version. This is a breakthrough in terms of learning to our visually impaired students at Ebenezer School. Our visually impaired students can read or listen to the ebooks on their computer by means of Braille display or screen reading software. The Project would not only facilitate the reading of linear text but also offer a better alternative to Braille in representing non-linear text like diagrams and tables. The reading facilities thus made available to visually impaired students by the Project will go a long way to meeting the needs of our students in extending their learning experiences and opportunities in today's knowledge-based society.

ABOUT

HONG KONG BLIND UNION

Hong Kong Blind Union was established in 1964. It is the first self-help group organized and managed by people with visual impairment. It aims at promoting the spirit of “self-help” and “mutual-help” among visually impaired persons as well as striving for equality, opportunities and independence for them.

ACCESSIBLE E-EARNING SUPPORT PROJECT GOALS AND OBJECTIVES

To bridge the learning gap between students with and without disabilities by providing various kinds of support services for print disabled students so that they can make the best use of e-learning in their academic pursuit.

TARGET

Students with print disabilities, including:

- visual impairment
- physical disability(unable to hold or manipulate a book)
- dyslexia

Their parents and teachers

Agencies serving students with print disabilities

SERVICES

Production of e-learning materials

- To convert textbooks, reference books and other learning materials into accessible format for the study use of print disabled students;

Training and support

- To compile guideline on accessible formats of e-learning materials for reference of teachers and publishers;
- To provide technical support and consultancy service to students, parents and teachers on the use of assistive devices;

Assistive tools research and development

- To evaluate latest technical aids and develop suitable software for the use of the target students.

ASSISTIVE LEARNING AIDS

A sharpened tool is necessary for a craftsman to excel in his job. In order to have good results in school, personal effort is indispensable. But more support in the process of learning will definitely help students with print disabilities to learn more easily. Print disabled students have to overcome more difficulties than those without in learning. Assistive learning aids are therefore important to them. Below is an introduction on some commonly used assistive learning aids.

Desktop CCTV

This can magnify words in ordinary documents or books for the people with low vision to read.

Scanning & Reading Appliance

This can scan and read aloud printed text for visually impaired persons to comprehend the documents content.

Screen Magnifying Software

This can magnify words or images shown on computer screen for people with low vision to read.

Tactile Image Enhancer

This connects with the computer to produce tactile images and Braille dots for visually impaired persons to comprehend by touching.

Screen Reading Software

This can read aloud the text shown on the computer screen, or display it with a Braille display for visually impaired persons to know what is being shown on the screen.

Electronic Notebook

Electronic notebook with Braille or voice output can be used by visually impaired persons.

Braille Display

This connects with the computer to let screen reading software show the contents on the computer screen with a Braille display so as to let visually impaired persons comprehend by touching.

Optical Character Recognition (OCR) System

It converts scanned printed documents into text for visually impaired persons to understand what the documents are about by using other assistive aids, such as Braille display or computer screen reading software.

SHARING

The Hardship of the Last Batch of HKALE Candidates

Interviewee: Ka Ho

Ka Ho is the first user benefited from the Project. He is currently attending form 7 in a mainstream secondary school in Ma On Shan, and this is also his fifth year there. He recalls the thrilling moment 2 years ago when he was preparing for HKCEE. Ka Ho said that, because of the immense amount of learning materials for the public examination, and the long time needed for converting them into Braille, the materials of some subjects were not completely available even by few days before the examination. Ka Ho could not help being more worried and frustrated while facing the examination pressure.

In his past studying life, Ka Ho always faced the problem of not catching up with the teaching progress due to the slow speed of converting printed materials into Braille. Once he thought about asking his classmates help input texts into computers to create text files. But he worried that it would bothered them too much. So at last he asked his classmates to record the notes with voice instead. However, it was very time consuming and inconvenient whenever he tried to locate the points.

Since the launch of this Project, Ka Ho often sends notes, references, past HKALE examination papers to the staff of Hong Kong Blind Union for helping him to convert into electronic format to facilitate his studying and revision. Apart from shortening the time of waiting for learning materials, the Project has brought about another unexpected change. Ka Ho said: “In the past, our teachers wouldn’t distribute hand-written notes to my classmates because of fairness; they didn’t want to give other classmates notes that I couldn’t read. Now, through this Project, teachers can convert the notes into electronic version before distributing to all classmates. Unexpectedly, this Project benefits other classmates as well.”

Jacky has studied together with Ka Ho for many years and always helped Ka Ho to prepare notes and read teaching materials. Jacky said that his workload has become eased after Ka Ho joined the Project. They can now use more time to exchange notes and key points in revision, form a studying group, and hope to obtain good results in the last year of HKALE.

As learning becomes more effective after using e-learning materials, Ka Ho feels that he is more relaxed at present than in the past. Previously he needed to carry six Braille books to school, each of which was thick like a dictionary. Now the number has been reduced to four. Moreover, during classes, teachers always ask students to write down key points. Ka Ho used to jot down the beginning and the end of the key sentences and organize the notes at home, which was time-consuming, and some points would be forgotten. After ebooks are available, he can add marks to the key areas and concentrate on revision after class. This also save his time of copying the notes.

Ka Ho's secondary school life almost coming to the end. He hopes that the Project could be extended to cover tertiary students in the future to benefit more students, enhancing more students' learning effectiveness.

Blind Student Prepares for Study Life in Mainstream School

Interviewee: Joyce

Joyce is currently studying form 3 in Ebenezer School, and will start learning in a mainstream school next academic year. She understands that the learning environment in mainstream schools and Ebenezer School is completely different, so she has already started her preparation for new school life, including using ebooks and electronic assistive aids such as Braille Notetaker in classes for note taking, and beginning to do homework with computer, and hoped that it would be easier to communicate with teachers and fellow classmates.

Joyce said: “Using screen reading software to review e-learning materials does not only reduce the trouble of carrying Braille books back home, but is also easier when asking parents questions about homework.” As Joyce is a non-resident student, i.e. a student who needs to go home after school, in the past she needed to begin carrying her Braille books bit by bit to her home for revision a week before the test or examination, and when asking her parents questions about homework, she needed to retrieve a separate printed book to compare the content. However, after using ebooks, a portable USB flash drive is good enough to carry numerous ebooks, and her parents can know about the progress of her revision through checking the computer screen.

Nowadays, many textbooks contain lists of web addresses to facilitate students’ collection of information. Joyce said she was afraid of visiting these websites in the past, because she had to remember the web addresses and then input them to the computer, a tiny memory error could be her barrier to these recommended study materials. The advantage of ebooks is that she can reach the website with just one click away, quick and easy indeed.

Read with Ear – How Visually Impaired Students Learn

Interviewee: Ah Wah

Ah Wah, a student enrolled in Fortress Hill Methodist Secondary School, has a right eye completely blind and a left eye with only 10% to 20% of normal vision. When he reads, he often needs to spend more effort. Therefore he feels tired more easily than people with normal eye sight.

Although Ah Wah has basic knowledge of Braille, he is not used to reading Braille books. In order to reduce the burden on his eyes for “reading”, he now uses screen reading software more frequently to read with his "ears" on sound.

"With this screen reading software, I can reduce the amount of time used for revision, and the energy spent on reading. When I am tired, I can use screen reading software to listen." he said.

Besides using screen reading software for revision, Ah Wah also use it to collect information, articles and read newspapers online. "I seldom surfed the Internet in the past, I found it boring. I sometimes felt tired while looking at those texts, and then my eyes just didn't want to look at the computer screen anymore." But since he started to use screen reading software, Ah Wah now enjoys surfing the Internet.

Screen reading software has another benefit to Ah Wah. It can fix his pronunciation. He said: “Screen reading software has fixed many of my pronunciation problems. For instance, in the past I pronounced ‘國家’ as ‘角家’. Now after I listen frequently to the voice output of the screen reading software, I know that it should be read as ‘國家’.”

Apart from that, Ah Wah also uses our ebook conversion service. He thinks that this service has helped him a lot. He can now read by putting the files in computer or tablets, and no longer need to rely upon his family to read out the content for him. Another advantage is that he does not have to carry the endless piles of thick books to school any more, greatly reducing his burden.

Spare Our Teachers to Focus on Teaching

Interviewee: Ms. Lai Yin Sin, Teacher of Ebenezer School

Ms. LAI Yin Sin has been teaching in the Ebenezer School for years. In the past she taught with Braille materials like her fellow teachers. There was a certain level of difficulty in production and communication for Braille materials. Contents compiled by teachers had to be converted into Braille by clerical staff before being printed and distributed to students. As the supporting manpower was scarce with wide coverage to various grades and subjects the clerical staff workload became hectic and the lead time was long. In order to expedite the process, teachers often contributed their personal time to help translating Braille materials.

With the advancement of information technology, the production of e-learning materials is much easier than those of Braille materials. With the ebook the waiting for their clerical colleagues' Braille translation is over. The teachers can directly use the electronic documents for teaching or producing assignments with minor alternation. The more handy and efficient teaching process spares more time for teachers to focus on the students' needs in learning and growth.

E-learning also improves the communication between students and teachers. In the Braille textbook age, teachers had to spend extra time to identify the areas of the students' questioning because the different pagination between printed and Braille versions, before they could provide answers or further explanation. Now those teachers can monitor the learning progress through computer screens because the whole classroom is using the same electronic version that enhances the communication as well as effectiveness.

Ms. LAI thinks that the "Accessible E-Learning Support Project" benefits the Ebenezer students under integrated education most. When students leave Ebenezer for mainstream schools, many of them can only rely on oral information in classroom with unsynchronized Braille textbook for class and review. Now, mainstream schools or the needy students can register as users of the Project, and receive the assistance of converting printed materials into e-learning materials free of charge. This facilitates students' learning and revision with desirable progress.

Turning Pages Isn't Easy at All – How Do the Physically Disabled Students Overcome Reading Obstacles

Interviewee: Siu Fong

Although Siu Fong, a secondary 5 student, was born without arms, her learning motivation is not affected. Before using ebooks, she used ordinary printed books for reading and revision. Without arms, her desk and chair have to be adjusted to a lower height to allow her to turn pages with her feet. Therefore, she needed to lean forward in order to see the content of the book, which put constant pressure on her lumbar and cervical vertebrae, made her tired easily and strained her bones.

She thinks ebooks help her a lot, as she can read learning materials with tablets, and no longer has to turn book pages with her feet. She said: “Now I just have to sweep the screen lightly to turn a page, far easier than using printed books. And tablets can store multiple files at the same time, lightening the burden of carrying school bags.”

Since she joined the “Accessible E-Learning Support Project”, Siu Fong now has more readable ebooks. This solves her difficulty in learning. She will participate in the HKDSE next year. For these examination of subjects that require more writings, she will answer with computers, and for others she will use her feet to answer the questions. She hopes to be provided with examination papers in electronic format so that she could read more easily.

Needs of Students with Physical Disabilities

Interviewee: Ms. Louisa WONG, Occupational Therapist of Hong Kong Red Cross Princess Alexandra School

Hong Kong Red Cross Princess Alexandra School is a special school mainly takes care of students with physical disabilities. There are also some students with intellectual disabilities, visual impairment, or brain damage such as spastics. To take care of the needs of students with physical disabilities is not easy at all, because the degrees of their disabilities are different and the school needs to decide how to provide assistance based on individual situations. Now with the help of information technology, their conditions for learning are greatly enhanced.

Louisa, an Occupational Therapist of the school, said that the presence of screen reading software solved the difficulties of reading among their students. Students can surf the Internet, read ebooks or newspapers with the screen reading software. They can also read texts, sample articles and exam papers, etc. in classes, and this improves their efficiency in learning. After the school joined the “Accessible E-Learning Support Project”, NVDA screen reading software, provided free of charge by the Project, were installed to some of the computers in the school to facilitate the students’ use.

Besides, Louisa finds that some students have improved a lot in learning after they started to use the ebook conversion service provided by the Project. Students can lighten their school bags by storing files of ebooks in tablets, which is a great convenience particularly to students with coordination disorder. Using ebooks also enhances their self-learning and self-care abilities. This is because, in the past, when they used printed books, they needed to spend great energy to take out the books from their school bags and read, now they can open ebook and review by themselves without much difficulty, and thus enhances their confidence in learning.

Louisa finds that ebooks are also helpful to the intellectually disabled students. They can more easily grasp the forms, pronunciations, and meanings of words through the voice output function of screen reading software and thus improve the language ability.

Seen But Incomprehensible – The Learning Difficulties of Dyslexia Students

Interviewee: Ah Fai

Ah Fai was found having learning difficulties as early as in primary 6, and later diagnosed as having dyslexia. Because of this difficulty in comprehending texts, he felt frustrated during classes, especially when reading textbooks and trying to understand their content. Now at secondary 6, he often fails to associate their pronunciations and meanings when reading words. He said: “Once I spent longer than three hours but still couldn’t figure out the general idea of an article.”

Despite that, Ah Fai has no problem understanding text content through sound. So Ah Fai said that learning had been much easier since he used screen reading software. Currently preparing for HKDSE, he will use screen reading software for revision once the school produce the electronic documents. He said that using screen reading software was like having someone to explain the text right beside him, while he could review at any time and place according to his own need and schedule, and because of which he no longer had to ask for help from parents or classmates, and worried about giving troubles to others.

Ah Fai has used screen reading software for quite sometimes. He said: “Using screen reading software for revision does not only helps understanding text content, but also deepen my memory.”

Ah Fai often found the sound of the screen reading software he used before unclear. And the frequency of updates from most screen reading software developers fail to keep pace with the requirements of newer operating systems and related software. After he joined the Project through his school and tried the NVDA (Hong Kong version) developed by Hong Kong Blind Union, Ah Fai found it far better than other screen reading software. For instance, he can control with mouse, and hear clearer sound. It also provides a more convenient way for searching extra-curricular articles and news apart from helping his learning. “After using the NVDA, my knowledge is enriched and I know more about the world,” Ah Fai said at last.

Taking Care of Student's Special Learning Needs and Improving Learning Effectiveness

Interviewee: Mr. Jason CHOI, Teacher of Fortress Hill Methodist Secondary School

Fortress Hill Methodist Secondary School is a secondary school which provides education service to the students with learning problems. In teaching, the school faces different learning needs of students, and hopes to support the students through a variety of services.

Mr. Jason CHOI, a teacher in the school, points out that the students with special learning needs are not necessarily weaker than ordinary students if the parents and schools are able to provide sufficient assistance and support, these students can perform very well in learning. For instance, dyslexic students usually fail to associate pronunciations and meanings to the printed words they see, which lead to difficulties in comprehending the texts. Since the school joined the “Accessible E-Learning Support Project” of Hong Kong Blind Union in late 2011, NVDA screen reading software has been installed to 100 computers in the 3 computer labs. It has created one more channel for students to “read” textbook content. “Listening to” notes and learning materials through computers and screen reading software allows dyslexic students to understand texts more easily, and helps them acquire new knowledge as well as review old materials.

Moreover, Jason finds that students' learning attitudes have changed to be more active after screen reading software were installed to the school computers. The students voluntarily utilize their spare time after classes, such as recesses, lunch times or after school, to use the computers for revision and find related information on the Internet to broaden their horizons.

Other than using the screen reading software at school, the participating students also can obtain the software free of charge. This allows them to effectively review and work on assignments at home, reducing their worries about studying.

Volunteers Never Care about the Reward

Interviewee: Tony

Tony had worked in a telecommunication company for 32 years and retired in 2011. After retirement, he wanted to contribute to society apart from taking care of his family. Because his niece was blind, he deeply felt the difficulty of the visually impaired persons in learning, including the lack of adequate Braille learning materials.

The main duty of the Project volunteers is to assist the production of ebooks, which can be considered boring, but Tony finds it suitable for himself as he is quiet person and likes reading. He does not feel boring facing the learning materials for students.

At present, Tony goes to the Project Office four mornings per week to help producing ebooks. He thinks the most difficult part of the production process is adding descriptions to the images. The key is to describe images in textbooks precisely with concise language to help visually impaired students understand the image content.

Tony thinks that producing ebooks does not only help people in need, but also allow him to improve and consolidate his knowledge. He said: “Some words I forgot for a long time how to express literally, such as the exact wordings of ‘playing on a swing’ in Chinese. In order to express correctly, I will look for reference information on the Internet.”

After becoming a Project volunteer, as a father, he feels that his son is very fortunate, because he owns more than many other students, and does not need to worry about not having enough learning materials. This motivates him to do even better in producing ebooks so as to help more print disabled students.

Interviewee: Stella

Stella retired two years ago. Having worked as a teacher, she hoped she could find volunteer jobs that helped students. A year ago, she conducted tutorials for visually impaired students. She found that it was very difficult to study with Braille books. During tutorial sessions, because she could not understand the content of Braille books, her students often needed to read her the content. This took time and therefore the amount of time available for revision became limited.

Introduced by her friend, Stella got to know Hong Kong Blind Union and its “Accessible E-learning Support Project”, and became a volunteer of the Project. Currently her main duty is to interpret images in textbooks with words to facilitate visually impaired students’ understanding. She enjoys doing this kind of editing work as she is not really fond of joining social activities.

Stella has experienced the benefits of ebooks to the students with disabilities. Apart from continuing to assist in the production of ebooks, she asked her daughter to help as well, in order to accelerate the speed of converting ebooks.

Sharing from Volunteers

After I've learned about the Project, I realized this programme can genuinely help visually impaired persons in the learning process. Although this is a pilot project, We should give it our support so as to improve our education system.

Benna

Learning should be equal to everyone. Students with learning disabilities should receive equal learning opportunities.

Sandy

Visually Impaired students have to overcome more difficulties in learning. By making use of information technology, the volunteers can help them by sparing a small amount of time for this Project. It's very meaningful. Knowing that the students can benefit, I really hope that more volunteers can participate in this Project.

Alan

Actually, I am so impressed by the learning attitude of the visually impaired students as they work harder than ordinary students. My volunteering work involves mainly to provide text description for graphs and photos, which is only a tiny contribution. I hope that my work can help visually impaired students to better grasp the content of their textbooks.

Ellata

I have a new understanding on sight vision after joining this Project as a volunteer. Being patient and empathy are important in communication. This is a delighted and meaningful volunteer work.

Henry

Frankly speaking, I am a bit lazy and careless in my daily work. But I work more seriously after joining this Project as a volunteer. It is because I know that I am helping those students with special needs. I realized that the students with disabilities are facing a lot of difficulties but they are with great fortitude in learning. It seems that I am helping others but it helps myself indeed!

Jo

All you need is to have a computer at home to join this Project by helping proofread and describe the pictures in textbooks. I am happy to continue participating in this Project so that more students can benefit.

Teresa

It is a nice experience to be able to participate in e-book production as I can be in touch with the current curriculum.

Sam

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Volunteers Helping Ebooks Production