



Press Release

An Effectiveness Study on E-learning Modes among Adults and Students with Visual Impairment Improve Learning Efficiency and Eliminate the Digital Divide

A new semester will commence soon in September, where students with print disabilities (Note 1) will face extra challenges again. Fortunately, information technology has gradually improved this situation. The Hong Kong Blind Union (HKBU) launched the Jockey Club E-Learning For All (ELFA) Project with sponsorship from The Hong Kong Jockey Club Charities Trust. The project aims to minimise the learning gap between students with reading impairment and typical students by making the best use of e-learning in their academic pursuit. In 2017, HKBU cooperated with the Faculty of Education at the University of Hong Kong (HKU) and conducted a two-year longitudinal study about the effectiveness of e-learning.

A press conference was held by HKBU on August 27, 2019 (Tuesday) to disseminate research findings. Mr Chong Chan-yau, the President of HKBU, said that persons with visual impairment can broaden their learning horizon and stay close to the ever-changing society via assistive technology. With the assistance of screen readers, persons with visual impairment can use mobile phones and personal computers to learn and to integrate into campus life. This longitudinal study aims at finding useful data for information technology experts to develop assistive devices which fit the practical needs of persons with print disabilities. Recently, HKBU has extended the scope of the project to cater to the reading needs of adults with visual impairment.

Dr Allan Yuen, Deputy Director, Centre for Information Technology in Education (CITE), Faculty of Education, HKU, stated that the present study focused on people with visual impairment. This study was a two-year longitudinal study with three time-points data collection. The framework of Technology Acceptance Model (TAM) (Note 2) was adopted in the present study. A total of 50 participants including primary and secondary school students as well as adults with visual impairment were recruited. A mixed method design was adopted, in which both quantitative and qualitative data were collected for examining the effectiveness of screen readers and exploring areas for improvements. The students with visual impairment who participated in this study had already used screen readers for two to three years. Therefore, their acceptance of screen readers was relatively stable according to the TAM index. In addition, there was a higher frequency and an increasing trend in using screen readers for instant communication among students with visual impairment. Moreover, students with visual impairment reflected in the focus group interview that they mainly used screen readers in language classes at school. They commented that the use of screen readers could replace traditional Braille textbooks, which could reduce the weight of their school bags and increase their reading speed.

As for adults with visual impairment, more than 60% of the respondents were 60 years old or above. Most of them were first-time users of information technology. In light of this, they needed to spend more time to learn how to use and adopt screen readers. However, after a learning period of one year, the five domains all showed an upward trend according to the TAM index. In particular, there was a significant increase in continuance intention, which had increased from 2.7 to 3.6. These adults generally believed that screen readers could help them cope with difficulties in their daily lives.

Dr Yuen suggested programme developers to consider the compatibility between screen-reading software when developing their software, so as to provide more software for use by people who are visually impaired.

He also recommended that schools should provide sufficient computers to students with visual impairment for classroom and after school learning.

Two users who are visually impaired also shared how screen readers and e-books had enhanced their learning effectiveness. Mr Wong Ka Ho, who was the first registered ELFA Project user, expressed that e-learning facilitated him to search for academic literature and produce suitable learning materials. E-learning was also an essential tool in helping him to complete his Bachelor's degree in social work and Master's degree in family counselling. Even after graduation, he kept using the service under the ELFA Project and produced e-books for job-related purpose.

Mr Yang En Hua, a Secondary 6 student, said: "Braille books are difference from printed copies used by teachers. I need to spend extra time to follow teachers' pace in classes." Mr Yang said that e-learning facilitated him to keep up with the teachers' pace during lessons. In addition, HKBU also produced e-books other than textbooks for users with visual impairment, which facilitated him to read more extracurricular books.

For media enquiries, please contact Ms Emily Cheung, Senior Manager (Development and Communications), Faculty of Education, HKU (Tel: 3917 4270 / email: emchy@hku.hk); or Ms SoSo Wu, Communications Officer, Hong Kong Blind Union (Tel: 2339 0666 / 6194 1181/ email: pswu@hkbu.org.hk). Please visit <http://web.edu.hku.hk/press> to view the e-version of the press release and photos.

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Note 1: Print disability includes visual impairment, physical impairment (unable to hold or manipulate a book) and dyslexia

Note2: Technology Acceptance Model (TAM) includes "Perceived usefulness", "Perceived Ease of Use", "Attitude", "Satisfaction" and "Continuance intention".

About The Jockey Club E-Learning for All (ELFA) Project

The Hong Kong Jockey Club Charities Trust supports the ELFA Project since 2013. The project aims to bridge the learning gap between students with and without disabilities by providing various kinds of supportive services for print disabled students so that they can make the best use of e-learning in their academic pursuit. Starting from April 2019, ELFA will continue to be supported by the Trust under The Hong Kong Jockey Club Community Project Grant.

About Hong Kong Blind Union

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

About the Centre for Information Technology in Education (CITE)

The Centre for Information Technology in Education (CITE) was established in June 1998 to provide intellectual leadership and support to promote the use of information and communication technology (ICT) for quality education in Hong Kong.

CITE supports several quality academic programmes coordinated by the Division of Information and Technology Studies of the Faculty of Education. These programmes are offered to teachers, educators and education-related professionals to meet their increasing needs and interests in furthering their studies and to equip them with the necessary academic and professional knowledge about IT in education.

In addition, the Centre provides in-service professional development training to teachers and principals in the use of IT in teaching and learning. Besides, CITE is also committed to provide consultancy services to the community on various aspects of the development of the educational use of IT and to establish close connections with the education, technology and business sectors of the community at large.