Brain Child Article (Volume 12, no.1, November 2011)

Topic: Experience of free AAC resource sharing in Hong Kong – Computer Rehabilitation Resource Station (C-Rehab)

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Communication and Augmentative and Alternative Communication (AAC)

Communication is a process of information conveyance which requires a sender, a message and a recipient. Successful communication means that a recipient completely receives sender's message, which is important for survival, relationship development, or emotion expression. Human communication can be classified into nonverbal, visual, oral and written communication. Gesture, body language, facial expression and eye contact are representations of nonverbal communication. Visual representations, for example, photographs, signs, and drawings, to convey messages are visual communication. Oral communication and written communication refer to spoken verbal communication and written communication respectively. People with various disabilities may have different level of difficulties in communication. Thus another form of communication is needed for them to express needs and ideas. That is augmentative and alternative communication (AAC).

Local Free Resource - C-Rehab

Computer is a machine processing logical operations, and it is very common in Hong Kong. It is a useful assistive device as well as an AAC device. With the development of internet, communication is no longer limited by time and location. The Hong Kong Jockey Club Community Project Grant: Computer Rehabilitation Resource Station (C-Rehab) is a free AAC resource for people with various disabilities. C-Rehab (http://crehab.emv.org.hk) is an on-line training website specially designed for people with intellectual disability and elderly. It provides well-designed therapeutic training programs to enhance their daily living skills and general knowledge so as to achieve independence and community integration. In addition to a wide range of training programs, C-Rehab consists of other services such as "Student Zone", "Photo library", "Teaching Materials DIY", "Rehabilitation Information", and "Therapist Blog" etc. The application of the training programs and services of C-Rehab to meet the needs of people with disabilities is illustrated below.

Index Page of C-Rehab

Autism and Communication Book

People with autism have impairments in communication and social interaction, but they are strong in capturing visual images. If they have difficulties to deliver both verbal and written messages to recipients, visual communication such as photographs or pictures are suitable media to convey their ideas. Communication book is common tool for people with autism to convey messages to other people. Users can point out photographs and words in communication book to express their needs and ideas. One of main services in C-Rehab - "Photo Library" consists of clear and colorful photographs in area of food, beverages, clothing, public transport, and cooking utensils etc. Teachers or parents can download the photographs freely and design their own communication book.

Photographs of daily objects inside "Photo Library"

Oral Motor Delay and Blowing Exercise

People with mild intellectual disability or physical disability may have oral motor delay. Oral motor delay may affect one's oral motor control, chewing, speaking or language development, hence oral motor training is needed. Blowing exercise is an useful oral motor training. It can be in form of playing woodwind and brass instruments, singing, blowing paper boat, or blowing bubbles. Besides, computer equips with a microphone and suitable training program can also provide interactive blowing exercises. C-Rehab has designed several training programs to train blowing. The activities include blowing bubble, petal, dandelion, or acting as wolf in the story "Three Pigs and the Wolf". Progress record and reusability are the major advantages of computerized oral motor training.

Exercise blowing in a simulated environment in C-Rehab

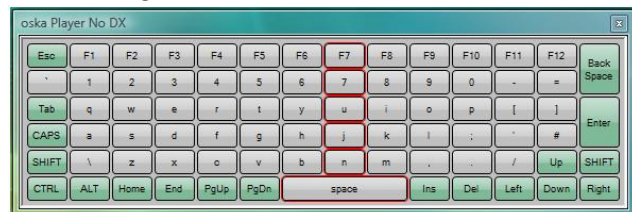**Severe Intellectual Disability and Emotion Expression Game**

People with severe intellectual disability cannot meet normal intellectual development markedly including the aspect in speech development. Even though they have own feelings and emotion, they have difficulties to express them verbally. Self stimulating or self injury behavior may happen to fulfill their emotional or sensory needs. C-Rehab consists of a series of interactive sensory stimulation training programs, which can facilitate them to express by pressing one switch only and passively receive visual and auditory stimulation. The ultimate goal is to prevent self injury behavior. Different topics are provided to suit various needs and interests, for example, flower garden, ocean, forest and Hong Kong scenery.

Interactive sensory stimulation training program to smooth emotion

Physical Disability and Scanning Function Training

People with physical disability may have limitations in fine motor control, hence they have to put great effort in using standard computer keyboard or mouse. Therefore, a cross scanning function program is developed to provide adaptation to input bundle of information by using one switch only. The program can scan either row by row or column by column. Users only need to select the mode by pressing one switch, and finally select the character using the same method. C-Rehab has several training programs equip with scanning function. Users can learn the concept of scanning function and practice using that function. Users can learn the concept of scanning function and practice its use.

One step on cross scanning

Scanning function inside C-Rehab's training program

Provision

Apart from C-Rehab's AAC programs illustrated above, other topics are further developed to suit the needs and interests of people with disabilities. Programmable, interactive and cultural specific communication board software is an option other than conventional communication book for people with autism. Moreover, software training programs have precise body motion or eye blinking detection function to train people with physical disabilities to practice their head control or eye blinking. C-Rehab also hyperlinks another free AAC resource developed by our Association, namely Rehabilitation Software Encyclopedia, in short Resopedia. Freeware and shareware for people with disabilities are collected and illustrated there. AAC software, such as text-to-speech program for people with visual impairment, word prediction program for people with specific learning difficulties are also available. Computer has multiple usage and application on AAC development can greatly benefit people with disabilities.

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