

Efficacy of Computerized Listening training for Kannada speaking children with Hearing Loss.

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Abstract- The current study attempted to justify the efficacy to develop computerized listening training software focusing on kannada speaking children who is having hearing loss (HL). In addition, we also attempted to develop the same software in all INDIAN regional languages to determine, if there are any improvements in listening the level of training modules will also increases.

Keywords: auditory training, computer-based, auditory rehabilitation, software, Hearing Loss

1. Introduction:

Hearing loss (HL) is well known to cause breakdowns in communication. The existence of hearing loss has increased over time and reached alarming levels. As per World Health Organization (WHO), 2012, there are 360 million (5.3% of the world's population) people in the world with disabling hearing loss out of which 32 million (9%) are children. Rehabilitation after fitting of amplification device has evolved over the years from lip reading to methods such as, Auditory Verbal Therapy. It has been proven to be effective in the rehabilitation of hearing aid users (Seetow& Palmer, 2005; Sabes&Seetow, 2007; Wu, Yang, Lin & Fu, 2007).

A. Objectives:

The merits and demerits of the current literature were reviewed in order to analyse further researches, the current researches is like, how the diseased people will take a capsules in a daily basis to cure the disease, like that the HI children will use this software in a daily based access. To increase the level of hearing skills and listening skills, the software is user friendly that to in his/her own mother tongue, the children can take the test daily as many times as possible, and also he/she can view their own test reports on a daily basis.

B. Data Synthesis:

The study included two phases- development of software and administration of the software. Computer based auditory training for Kannada speaking children who is having hearing loss has been developed considering some of the practically important aspects involved in auditory rehabilitation of children having hearing loss. The training was provided with the software for twenty participants for initially who is having hearing loss (10 in control and 10 in experimental group). The results show that the training was beneficial leading to increase the level of growing in listening age for experimental group compared to their counterparts. In addition, the improvement was also acknowledged by the parents of children who are having Hearing loss. The participant, intervention, Control, outcome and study design (PICOS) criteria were used for the inclusion of articles.

C. Development of software

The frontend of the modules was developed using HTML and PHP (Hypertext preprocessor). The database for client records was developed by using MYSQL (My Structures Query Language). The software consisted of home page, admin login page, modules and reports. The home page had a brief introduction to the contents and purpose of the software. Following this, the client has to register by taking help from an audiologist and them he can able to login page to his respective page where the real software exists. The new registration page requires the user to enter demographic and other case details. The software consisted of five modules namely, awareness, identification, discrimination, memory & sequencing and comprehension. Each of these

modules had training and test phase. Following a brief regarding the meaning, importance and application of each module, the audiologists /parent was led to the page with training phase first and then test phase. In every module and level, a pass criterion of 70% was set, and before taking test the child can take practice test and then move on to the real test, after which the child was moved to the next level only the child has to complete the levels in chronological order. All these modules were built in appropriate hierarchy implementing suitable auditory stimulus accompanied with visual representations with some animated images. Upon completion of the software, it was reviewed by three different audiologists who were highly skilled in auditory rehabilitation. They were asked to rate the software on the following aspects – familiarization, correctness, ambiguity, audibility and cultural acceptance of the test stimulus (audio/pictures/videos). Here the audio, which is available only in kannada language. The children who can read and understand kannada language can make use of this software.

2. Conclusions

The efficiency of the software modules which was developed only in kannada language and the software efficiency will also be measured by giving test to the children who is having hearing loss and by the performance of the children. As the number of users increases, the efficiency of the software will also increase thus motivates us to develop the same software in all INDIAN regional languages, hence the software can reach each and every person who is having hearing loss and also we are incorporating the latest trends like developing a mobile app to conduct test in real time in irrespective of the languages.

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