IDENTIFICATION OF CONDUCTIVE HEARING LOSS IN A PRESCHOOL COMPUTER ENVIRONMENT: A PILOT STUDY

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ABSTRACT
A pilot study was conducted to identify the prevalence of conductive hearing loss among preschool children in a computer-learning environment. The purpose of this pilot study was to examine the relationship between conductive hearing loss of preschool children and their social behaviors in a computer-learning environment. This study was designed to compare the verbal and physical interactions (collaborative interactions) of normally hearing dyads and a mixed of normally hearing - conductive hearing loss dyads. There were a total of 225 preschool children, ranging in age of pre-testing from 5 years, 10 months to 6 years, 3 months (mean = 5 years, 11 months). At the time of post-testing, 174 children were excluded for analysis, due to lack of parent consent and of those who did, screening test indicated that they did not exhibit conductive hearing loss. A final sample comprised of 51 children (25 boys and 26 girls), who attended preschools in Kuala Lumpur and rural and urban areas of Selangor Darul Ehsan. The children were placed into either normally hearing dyads (collaborative groups) or mixed of normally hearing - conductive hearing loss dyads (non-collaborative groups) and worked on a computer presentation of a storytelling task. The main finding of this pilot study was the children's verbal interaction’s (collaborative interactions) and manipulation of the physical materials were adapted by the mode of presentation. There were no significant differences between groups of dyads in the paper presentation of the task. However, in the mixed of normally hearing - conductive hearing loss dyads, normally hearing children dominated both the amount and type of verbal interaction (collaborative interaction) and the control of the activities on the computer screen. Results are interpreted in terms of processes of social comparison, which appear to be more potent in this situation than any straightforward domination of resources. This pilot study has not only complements other studies made earlier on learning difficulties and hearing loss, but also provides information on their computer learning environment.

Keywords
Computer integration, collaborative learning, conductive hearing loss, early childhood education, single display groupware (SDG)

1. INTRODUCTION
Computers are becoming increasingly common in schools. Originally intended as a means to provide individualised instruction, they are now often used to support collaborative learning (Littleton & Light, 1999). Although there is general enthusiasm for the greater use of computers, there are also concerns that these changes may exacerbate inequalities and that children with minor hearing problems could be disadvantaged when making use of information technology in education (Schildroth & Hatto, 1993; Levy-Shift, & Hoffman, 1985; Littleton, 1996).

Many deaf or hard-of-hearing children attend their local public schools (Schildroth & Hatto, 1993). One intended benefit of placing children in public schools is to integrate children with and without disabilities socially (Kaufman, Gottlieb, Agard, & Kukic, 1975). Research on mainstreamed deaf or hard-of-hearing children’s social integration has examined how much these children interact with their normally hearing peers (Arnold & Tremblay, 1979; Levy-Shift, & Hoffman, 1985) and how well they are accepted by their normally hearing peers (Elser, 1959; Kennedy, Northcott, McCauley, & Williams, 1976). The results of