

SIGN LANGUAGE IN CO-ENROLLMENT EDUCATION FOR DEAF CHILDREN

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ABSTRACT

When inclusive education is the norm, a legitimate question to ask is whether or not, or how, sign language can be adopted to support deaf and hard-of-hearing (DHH) children who are studying in a regular school setting. In Hong Kong, an experimental deaf education program in a regular school has been set up that combines the concepts of sign bilingualism and co-enrollment in educating both DHH and hearing students inclusively. In this approach, about 5-7 DHH children study with hearing peers in the same class at each grade level, co-taught by a hearing teacher who primarily uses speech and a deaf teacher who signs. In this paper, we will examine the effects of creating such a sign bilingual community on the bimodal bilingual development, social and academic integration of DHH children. Data from a variety of tools were collected, focusing on DHH children's oral Cantonese, vocabulary and grammar in written Chinese, Hong Kong Sign Language, and academic status as well as social integration between the deaf and hearing children. Research findings suggested that there was positive growth among the DHH children's oral language development, and their growth rate was even better than those "deaf singletons" studying in conventional mainstream education. There was no evidence indicating that acquiring sign language adversely impacted their oral Cantonese or written Chinese grammar. Last, positive outcomes were observed in social and academic integration. Taken together, bimodal bilingual communication rendered by DHH and hearing teachers and peers in a regular school setting offer promising results.

ROLE OF SIGN LANGUAGE IN INCLUSIVE EDUCATION

Over the past few decades, the prevailing education philosophy for children with hearing loss saw a drastic shift from special (or segregated) education to inclusive education. Notwithstanding DHH students' diverse background such as nature of hearing loss, hearing levels and speech perception abilities, age of hearing aids fitting and types of hearing aids, age of language exposure and medium of communication, nowadays, almost 80-90% of DHH students are channeled individually to regular schools. However, DHH students in mainstream schools constantly face challenges in their language development, classroom communication and social integration with their hearing peers as well as academic attainment. DHH students of regular schools, on average, still perform below par on skill measures relating to language, literacy, mathematics and cognitive reasoning (Marschark & Hauser, 2008). In addition, emotional support that permeates the deaf schools before is now being replaced by DHH students' feelings of "loneliness" when they study in regular schools. Low involvement in social interactions and low peer acceptance are the major difficulties facing DHH students studying in the mainstream settings. Xie, Potmėšil and Peters (2014) identified language delay, poor speech intelligibility and lack of strategies to repair communication breakdowns as the major factors affecting DHH students' degree of integration into the majority hearing classroom. Advanced technology does help improve DHH students' speech perception ability, but success in oral language development by solely relying on hearing aids or cochlear implantation is variable (Humphries et al., 2012). An alternative strategy is to expose DHH children also to signed language to safeguard against linguistic deprivation during the critical period. Tang, Lam and Yiu (2014) proposed to promote bimodal bilingual schooling in regular school settings. By so doing, both DHH and hearing students in school will develop bimodal bilingualism and use these languages to engage themselves in classroom learning and social interactions. The strategy to create such an environment to nurture masses of bimodal bilingual students, both DHH and hearing, is by way of 'co-enrollment'.

CO-ENROLLMENT PROGRAM IN HONG KONG

Similar to other co-enrollment programs, the Sign Bilingualism and Co-enrollment (SLCO) Program in Hong Kong stresses the importance of enrolling a critical mass of DHH students to study with a larger group of hearing peers using an appropriate deaf-hearing ratio of about 1:3 or 1:4. Another feature of the program is the adoption of bimodal bilingual instruction through collaborative teaching between a regular teacher and a Deaf individual who can sign fluently in Hong Kong Sign Language (HKSL). The Deaf teacher aides, who possess a functional role of a “Deaf teacher” in class, support the establishment of a sign bilingual school environment. They not only provide rich linguistic resources and Deaf identity to the students, but also give support to the regular teachers on developing sign language skills and awareness to the needs of DHH children. To ensure bilingual development of DHH students, speech therapists, backed up by signed language training, conduct speech and language therapy in groups or individually. Surely, a wealth of oral language input from hearing students and teachers is readily available in this bilingual school context. The presence of sign language (and Deaf teacher) helps modify the eco-system that supports bimodal bilingual communication between and among DHH and hearing students in the classroom. Efforts were made to create a language-rich environment by engaging both DHH and hearing students in education and support their language development in both languages by means of a ‘two-way immersion’ from the perspective of bilingual acquisition and bilingual education (Baker, 2006).

The co-enrollment practices described above aim to cultivate an inclusive educational environment in which both DHH and hearing students receive education and access the same curriculum through the use of both signed and spoken language. DHH students are able to enjoy a full membership in the educational process, thus preventing them from becoming ‘visitors’ and/or ‘marginal bilinguals’. Since 2006, a series of programs have been established. In addition to the baby signing program and the pre-kindergarten, HKSL-supported Chinese literacy program, there are eight cohorts with a total of fifty-eight DHH students receiving formal education in the SLCO Program, from kindergarten, primary to secondary education.

In this paper, we will report on the language development of the SLCO DHH students during their primary education (i.e. Primary 1-6). We will also discuss about their outcomes in terms of their social and academic integration.

BILINGUAL DEVELOPMENT IN A CO-ENROLLMENT ENVIRONMENT

It has been a common concern from some parents and educators that learning a signed language of a DHH child will hinder the development of his or her spoken language although no evidence has ever been established in empirical studies (Marschark, 2007). Recent studies further confirmed that sign exposure does no harm to speech processing of DHH children (Giezen, Baker, & Escudero, 2014). In Tang, Lam and Yiu (2014), a study was conducted to investigate how DHH students in co-enrollment programming develop their sign language and spoken languages (including oral Cantonese and written Chinese). Twenty severe to profoundly deaf students from primary one to five were assessed of their syntactic and morphosyntactic knowledge of HKSL, oral Cantonese and written Chinese. Correlational analysis revealed that the students’ performance on the three language assessments was positively correlated, representing that the three languages they possessed develop alongside with each other. The combined effects of early signed language exposure, early fitting of hearing aids and better speech perception abilities support the development of language foundation at an early age and a more balanced overall development of the three languages on a long-term basis (Tang, Lam & Yiu, 2014).

LITERACY DEVELOPMENT OF SLCO DHH STUDENTS

To examine literacy development in Chinese of the DHH students in the SLCO

Program, two studies were conducted: one on their development in expressive and receptive vocabulary in Chinese and another on their grammatical knowledge. Based on the performance of 18 SLCO DHH and 60 hearing students collected at four time points, from term-start of Primary 1 to term-end of Primary 3, Li et al. (2014) found that DHH students under the SLCO environment made significant difference in their Chinese vocabulary knowledge over time. Though DHH students' development continued lagging behind their hearing peers, the difference was primarily in expressive vocabulary. No significant difference between DHH and hearing students could be found in their receptive vocabulary abilities. The discrepancies found in their expressive vocabulary could be due to task effects arisen from the speech production requirement of the respective assessment.

In Li et al. (2014), the DHH students' Chinese grammatical knowledge was assessed and compared with their hearing peers in the SLCO Program. Data were collected at five assessment time points, from term-start of Primary 1 to term-end of Primary 4. Results found that significant difference between the two groups could only be found at one time, that is the end of Primary 1. No difference between them could be found from Primary 2 onwards. In sum, sign bilingualism does not impede Chinese literacy development of DHH students in a co-enrollment setting. There shows positive growth in their expressive and receptive vocabulary as well as grammatical knowledge when compared to their hearing counterparts.

ORAL LANGUAGE DEVELOPMENT OF SLCO AND MAINSTREAM DHH STUDENTS

Study by Lee et al. (2014) compared the performance of twelve DHH students in the SLCO Program with sixteen DHH students who were being mainstreamed individually without exposure to HKSL. They examined the students' oral language development over a period of three years using the Hong Kong Cantonese Oral Language Assessment Scale (HKCOLAS) (T'sou et al., 2006), a standardized oral language assessment with six subscales: Cantonese Grammar (i.e. CG), Textual Comprehension (i.e. TC), Lexical-Semantic relations (i.e. LS), Story Retelling (i.e. RS), Word Definition (i.e. WD) and Expressive Vocabulary (i.e. EC). Based on the performance of the students according to their education background (i.e. SLCO vs non-SLCO), school grades (Primary 1-3) and initial oral language ability at the first point of language assessment, Lee and her team compared their language growth of these two groups of students in three years (from Primary 4 to 6). By controlling for their degree of hearing loss and speech perception levels, statistical analysis suggested that DHH students in the SLCO Program developed oral Cantonese at a significantly faster rate than the individually mainstreamed DHH students in their overall performance in HKCOLAS and four out of the six subscales (including CG, TC, LS and RS), covering both receptive and expressive language abilities; as well as syntactic and morphosyntactic knowledge of the language.

There was no evidence in the study indicating that acquiring sign language adversely impacted their oral Cantonese grammar. In the opposite, positive developmental outcomes are observed (Lee et al., 2014). In other words, DHH students with HKSL support progressed more positively in their oral Cantonese than those without, pointing to the potential benefits of bimodal bilingualism in supporting the language development of DHH children in their early years.

SOCIAL AND ACADEMIC INTEGRATION

A majority of DHH students are integrated in the mainstream settings, they are at most time mixing with their hearing peers at the same physical setting. However, many DHH students placed in mainstream settings individually may perceive themselves as "visitors" rather than "members" of their school/class communities (Antia et al., 2002). Communication barriers facing DHH students are always a factor affecting social and academic integration of DHH students. By creating a school environment with dual language immersion to enrich bimodal bilingual development of both DHH and hearing students, communication barriers may

thus be reduced. Yiu and Tang (2014) examined the social acceptance between DHH and hearing students based on three psychosocial measures: i) peer ratings; ii) hearing students' attitudes toward DHH students; and iii) DHH students' attitudes toward their own deafness. Sixteen DHH and 289 hearing students from Primary 4 to Primary 6 participated in the study. Results from peer ratings revealed that DHH and hearing students in the SLCO environment showed positive peer acceptance toward each other. Yiu and Tang (2014) also found that with a positive attitude towards their own deafness, DHH students received more positive ratings from their hearing peers. Hearing students, with growing acceptance toward DHH students in the environment, they also received more positive peer ratings or social acceptance from their DHH peers. Interestingly, sign language ability of DHH students is associated with more positive ratings received from hearing students. This relationship reflected that sign language in this class environment has established a role that is well accepted and respected.

When academic integration of DHH students is considered, Yiu (in prep.) found that both DHH and hearing students showed positive perceptions on their classroom communication with their peers and teachers during classroom learning in the SLCO Program, based on the Chinese version of Classroom Participation Questionnaire (CPQ) with four subscales (see Antia, Sabers, & Stinson, 2007). There was no significant difference between the combined scores of CPQ subscales by the DHH and hearing students, but DHH students showed to have less negative feelings about their participation in class. Further scrutiny from the scores of individual items indicated that DHH students may have more difficulties in joining group discussions and understanding other students' responses to teachers.

CONCLUSION

In this paper, we have provided some empirical evidence on the performance of the DHH students in this educational environment. There is a positive growth among the DHH children's oral language development, and their growth rate was even better than those "deaf singletons" studying in conventional mainstream education. There was no evidence indicating that acquiring sign language adversely impacted their oral Cantonese or written Chinese grammar.

From a language acquisition perspective, the sign bilingual and co-enrollment education setting provides a lot of opportunities for social and classroom interactions between and among the teachers and students, deaf and hearing alike, thus creating many naturalistic contexts for comprehended input to bolster the DHH students' language development. The strategy of total, dual language immersion has been behind the planning of the curriculum and extra-curricular activities at the school, promoting use of HKSL and to cultivate Deaf awareness in the school environment. The presence of Deaf teacher not only supports sign language development of both DHH and hearing students, Deaf-hearing co-teaching in class also supports social integration between DHH and hearing students and academic integration in terms of classroom participation. Their day to day collaboration set as an example, demonstrating how deaf and hearing persons can be interacting and cooperating with each other with sole respect. Taken together, bimodal bilingual communication rendered by DHH and hearing teachers and peers in a regular school setting offer promising results.

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