

THE IMPACT OF A SIGN BILINGUAL INCLUSIVE PROGRAM ON DEAF AND HEARING YOUNG CHILDREN IN TAIWAN

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Abstract

Sign bilingual co-enrollment programs have been executed well in Hong Kong in Asia. The aim of the study is to explore if a sign bilingual inclusive program beneficial for both deaf and hearing young children in Taiwan. Subjects of the study are 4 deaf kindergarten-level children of a local deaf school. Research tools consist of PPVT, CDIIT, sign language tests, Mandarin WIPI tests, interviews and questionnaires data to related parents and teachers. Four deaf students were sent to a hearing class for partial inclusion two afternoons a week for one year; and a Deaf teacher taught together with a hearing teacher in the hearing classroom. In the 2nd semester, two times of one-week-long full-inclusion were tried. Main result findings are summarized below: 1. For hearing students in the experimental group, their receptive (hearing) vocabulary improved significantly ($t=-2.219$, $p<.05$); however, there is no significant difference between students in the experimental group and control group through ANCOVA analysis. 2. For deaf students, through the CDIIT evaluation, they improved most at the social area (average rate of growth 2.60), followed by language and overall development. And the deaf case A was no longer a child with developmental delay. 3. Hearing students enjoyed deaf teachers and peers; deaf students enjoyed the inclusion experience. All hearing parents and teachers supported this program. 4. Challenges we faced are lack of enough professional collaboration and sign language trainings. It is concluded that this sign bilingual inclusive program is beneficial for both deaf and hearing young students.

Introduction

Sign bilingual co-enrollment programs have been executed well in the world, especially Hong Kong in Asia. According to Tang (2013), positive correlation between vocabulary knowledge and reading understanding was found in some research findings; besides, if deaf children are exposed to sign language in early years, it will benefit their development for future literacy and reading understanding abilities as well as benefit their cognitive

theory of mind (Schick, de Villiers, de Villiers, & Hoffmeister, 2007; Tomasuolo, Valeri, Di Renzo, Pasqualetti & Volterra, 2012, cited from Tang, 2013).

From research findings from Marschark, Tang, & Knoors (2014), we know that many different countries in the world are doing sign bilingual programs. Sign bilingual programs were first begun by Ahlgeen (1994) in Sweden. Their study proved that bilingual deaf children, who received 240 hours of sign language input, showed better performance than deaf children who received oral mode. After that, sign bilingual program rapidly started to be developed in England, USA, and Australia. Their goals are to help deaf children acquire first language (through signing), to include sign language, deaf culture, and deaf teachers, and to master their second language (through reading and writing) and social emotional development; the deaf students' academic improvement was also expected. Co-enrollment is a balanced bilingual education. The philosophy is to emphasize spoken and sign language together; the model is nicely executed in Hong Kong and Netherlands. For example, sign language pathologists were included in the experimental team in Hong Kong. Roles of sign bilingual model teachers (1 deaf for SL, and 1 hearing for spoken language) are cooperated together; instead of repeating messages, they complement with each other.

Concerning the benefits of sign bilingual deaf programs, according to Marschark, Tang, and Knoors (2014), benefits of sign bilingual programs include cognition (Capirci, 1998), academic (Kreimeyer, Crooke, Drye, Egbert, & Klein, 2000), and social interaction (McCain & Antia, 2005; Yiu & Tang, 2014). And their conclusion was that sign language would not impede students' oral language development.

Although this model has been supported from theories in Northern Europe (such as Denmark, Sweden, and Netherlands), there are still few studies support the practical execution of sign bilingual co-enrollment programs. Yet Hong Kong's long term 7 years of program showed very positive results. It was found that the concept of "critical mass" is also emphasized as a effective principle to execute a wonderful sign bilingual co-enrollment program, proven by Hong Kong's program.

In Taiwan, Hsing started to copy Hong Kong's sign bilingual co-enrollment model and revised it as a sign bilingual partial inclusive experiment in 2011. In the first year, the aim was to explore if a 1-year sign bilingual plus partial inclusion experiment promote both deaf and hearing kindergarten students' development in language and social interaction in Taiwan. Two deaf young

children (one 5 years old, DC/DP, and one 4 years old, microtia) at the local deaf school joined the experiment. They went to the hearing kindergarten for inclusion twice a week for 100 minutes each in the afternoon. During the learning time, a deaf teacher taught together with a hearing teacher and all students learned sign language songs or picture books with signing. The deaf students received extra 30 minutes of sign language picture book reading instruction. The 1st year experiment ended on June 2012. Results findings (Hsing, 2013) are that firstly, most hearing students' parents hold positive perspectives toward the program. Besides, the deaf students' parents and teachers agreed that sign language learning facilitated deaf students' spoken language and learning speed (when speak and sign). Moreover, these two deaf students enjoyed going to hearing classroom to learn with hearing peers and their social interaction gradually increased. Deaf students also improved their reading and sign language abilities. There is six months of duration between pre-test and post-test. From the paired *t*-test, it shows that sign language learning facilitated experimental-class hearing students' vocabulary recognition abilities ($t=2.255, p<.05$).

Hsing, M. (2014) reported some sign bilingual programs in different cities (Taipei, Taichung, Tainan) conducted by Dr. Chang, Dr. Liu, and Dr. Hsing. All of the programs hired a deaf instructor to teach deaf children. The temporary research findings, especially from parents and teachers' interviews, were positive. It is regretful that two of three programs, due to lacking continuous financial support, stopped after one year. Yet the research findings were collected and would be reported soon.

The aim of the study is to explore if a sign bilingual inclusive program beneficial for both deaf and hearing young children in Taiwan. This program is still ongoing for the second year till now.

Method

Subjects: Subjects of the study are 4 deaf kindergarten-level children of a local deaf school (1 with Auditory Neuropathy Spectrum Disorder, ANSD and 3 deaf children who could speak; 3 with 5-year-old and 1 with 4-year-old) and 52 4-year-old hearing kindergarten students (27 in experimental class and 25 in a controlled class).

Research tools: Research tools consist of PPVT, CDIIT (a comprehensive development tool for deaf students), teacher-made sign language vocabulary tests, Mandarin WIPI tests (designed by Siouwen Chang & Ann Geers), interviews and questionnaires data to related parents and teachers. Four deaf students were sent to a hearing class for partial inclusion

two afternoons a week for one year; and a Deaf teacher taught together with a hearing teacher in the hearing classroom. In the 2nd semester, two times of one-week-long full-inclusion were conducted.

Procedures of the experiment: For hearing students, they received SL learning from a Deaf teacher for 30 minutes on Wednesdays, and 2 afternoons each week with 4 deaf peers from a local deaf school kindergarten. In the 2nd semester, two tries of one-week-long inclusion in the morning time were executed respectively in March and in May. During the first full inclusion week, the emphasis was placed on the hand-on activities; during the second full inclusion week, a certified sign language interpreter was hired to expedite the understanding between the deaf and the hearing teacher. Teacher meetings before and after the experiment were held

Concerning mode of sign bilingual and co-enrolment programming, we followed HK's sign bilingual co-enrollment model in the kindergarten level by adopting sign bilingual partial inclusion model. During the second semester, I used two times of one-week-long full inclusion model in March and May respectively.

Concerning the patterns of use of signed language, the hearing teachers spoke or used speech plus sign (SC mode) for key words; most of time, they controlled the computer screen for the teaching content (either sign language songs or picture books; the deaf teacher used sign language (TSL) only and she also used speech-reading strategy to understand the hearing teacher's messages. During the second full inclusion week, a sign language interpreter was there full-time to assist the deaf teacher and the hearing teacher. Roles of two teachers are complementary; when the deaf teacher was the main role, the hearing teacher assisted her by controlling the teaching content (picture book or children song vocabularies and Q&A) and sometimes spoke to students. Before they started to teach, these two teachers would have meetings to discuss how to prepare next-session contents. The hearing teacher would use sign language or handwriting to communicate with the deaf teacher.

For teachers' hearing status, at the hearing kindergarten classroom, there are 2 hearing teachers and 1 deaf teacher joined this experiment. Concerning the teaching content during the partial inclusion learning time, hearing teachers used picture books or children song or nursery rhymes to teach both deaf and hearing students.

Results

Main research findings are summarized below:

1. For hearing students in the experimental group (n=27), their receptive vocabulary performance improved significantly better than hearing students in the control group (n=25) ($t=-2.219$, $p<.05$). For deaf students (n=3, excluding case A, a deaf with additional disabilities), they also improved at the PPVT, but there was no significant difference ($t=-.584$, $p>.05$). It was noted that deaf students made bigger learning gain than hearing students.
2. For deaf students, through the CDIIT evaluation, they improved most at the social area (average rate of growth 2.60), followed by language and overall development.
3. For the deaf case A (who is ANSD) was no longer a child with developmental delay after she joined the sign bilingual program for one year (Pretest: PR=1, DQ=55; posttest: PR=12, DQ=82; the cut-off for developmental delay is DQ 77.5, -1.5SD). Her biggest improvement is at the motor development area (from PR 27, DQ 60, to PR 84, DQ 90).
4. All three deaf students improved their Mandarin WIPI. For example, deaf case B (male, 5 years old), his performance of picture listening discrimination performance improved a lot from 13 items correct out of 25 items (pretest) to 23 items correct (posttest).
5. Hearing students enjoyed deaf teachers and peers; deaf students enjoyed the inclusion experience. All hearing parents and teachers supported this program.
6. Perspectives from the hearing parents of hearing children in the experimental class:

Parents all agreed that the sign bilingual program was successful (through a 4-point scale of questionnaire survey). Some parents also expressed that their hearing children were eager to share what they learned to their parents or even taught them some signs; and most HC enjoyed SL learning and they liked to assist their deaf peers.

Perspectives from deaf school teachers: From the teacher interview, the homeroom teacher of the deaf students at the local deaf school confirmed that deaf children enjoyed the inclusion experience. One teacher Ms. Lin pointed out that deaf students could join the hearing class discussion, and they enjoyed the inclusion learning experience. She also noted that two deaf students with ADHD characteristics improved their visual attention abilities. She pointed out that changes of the 2nd inclusion week (hiring a professional SL interpreter, more teacher preparation

collaborative meetings, and adding one more deaf assistant for helping deaf case A as one-to-one basis) made the sign bilingual instruction effectiveness more successful.

7. Advantages of the program

This is a relatively new experiment in Taiwan, especially in a hearing kindergarten stage (one deaf teacher and one hearing teacher who cooperate to teach together; and 28 hearing students plus 4 deaf students learn together).

Advantages are that

- a. Deaf students could watch the deaf teacher to learn sign language
- b. Hearing students could learn sign language; they enjoyed the learning and their vocabulary understanding abilities improved.
- c. Deaf students enjoyed learning with hearing peers together, and they tried to communicate with hearing peers sometimes.

8. Challenges of the program

Challenges that we found include:

- a. Time issue—a need for a reasonable duration for an effective sign bilingual program: It takes time (at least 5 years) to conduct a good sign bilingual program (e.g., Hong Kong, China, USA programs).
- b. Lack of concrete support from the educational authorities: It seems the government officials in Taiwan do not strongly support such model since it costs money.
- c. Training parents, teachers TSL signing skills, and training deaf teachers become better teacher through collaboration and in-service training.
- d. Lacking excellent experienced deaf teachers to offer consultations to train young deaf teachers.
- e. Lacking qualified sign language interpreters who know deaf education and early childhood education.

Conclusion and suggestions

It is concluded that this sign bilingual inclusive program is beneficial for both deaf and hearing young students. Although there are obstacles and challenges, the road to bilingualism has already been opened in Taiwan.

Suggestions made are listed as follows.

1. We hope to get more support and consultations from international cooperation through technology, e.g., Hong Kong, China, USA, etc.
2. We need more communications: Keep contacting with government officials and parents by establishing workshops and dialogues and getting media's attention, support and propaganda.

3. It is better to set at least a 5-year period proposal (like China) for a steady bilingual program evaluation, with more related experimental classes in north, middle, and south areas.
4. More training for deaf and hearing teachers are needed; it's also true for SL interpreters.

Recently, we are celebrating Deaf Education 100th year in March 2015. It is our sincere hope that deaf education could improve a lot than before in the near future in Taiwan.

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