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INSTRUMENTATION

Maklumat Subjek (Anak Pekak)

1. Nama : _____
2. Tarikh lahir : _____
3. Punca menjadi Pekak : _____
4. Tahap kepekakan (dB) : _____
5. Telinga (satu atau dua) : _____
6. Penyakit lain (jika ada) : _____
7. Pada umur berapa ketika didapati Pekak : _____
8. Bila diagnosis? : _____

Pendidikan Anak Pekak

1. Apa pendidikan telah diterima:

2. Kekerapan komunikasi (MySL) dengan subjek dalam hidup seharian:

Penjagaan Anak Pekak

1. Siapa menjaganya sepanjang hari (jika kedua-dua ibu bapa bekerja)?

2. Pusat apa yang menjaganya?

3. Apakah cadangan ibu bapa terhadap anak Pekak ini?



FAKULTI BAHASA DAN LINGUISTIK
UNIVERSITI MALAYA, KUALA LUMPUR

Kajian Penguasaan Bahasa Isyarat Anak Pekak

Adalah dimaklumkan bahawa saya, Chong Vee Yee (TGC080046), pelajar ijazah lanjutan di Fakulti Bahasa dan Linguistik, Universiti Malaya, Kuala Lumpur sedang menjalankan satu penyelidikan bahasa seperti yang disebutkan di atas.

Jika saudara/i turut serta dalam penyelidikan ini:

1. Data demografi saudara/i dan anak saudara/I akan diambil.
2. Penguasaan bahasa isyarat anak Pekak akan dikaji melalui beberapa sesi pelajaran.
3. Pemerhatian pergaulan anak Pekak dilakukan di dalam dan di luar rumah.
4. Sesi pelajaran dan pemerhatian akan divideokan dan dikaji.

Semua maklumat yang saudara/i beri akan disimpan rahsia.

Terima kasih atas kerjasama saudara/i berikan. Sekiranya saudara/i ada sebarang pertanyaan, boleh hubungi saya, Chong Vee Yee 012-3387934.

Terima kasih.

Yang benar,

(Chong Vee Yee)

Persetujuan Iubapa dan Penjaga Subjek

Saya, _____ bersetuju untuk turut serta dengan sukarela dalam penyelidikan yang dijalankan dan membenarkan data-data yang saya beri digunakan dalam penyelidikan tersebut sahaja. Saya juga sedar bahawa saya boleh menarik diri daripada penyelidikan ini bila-bila masa sahaja.

Tandatangan subjek

Tarikh: _____

Appendix 1: Materials used in the learning activity sessions

- a) Putting Round Chips into Board Columns.



- b) Matching Picture to Picture.



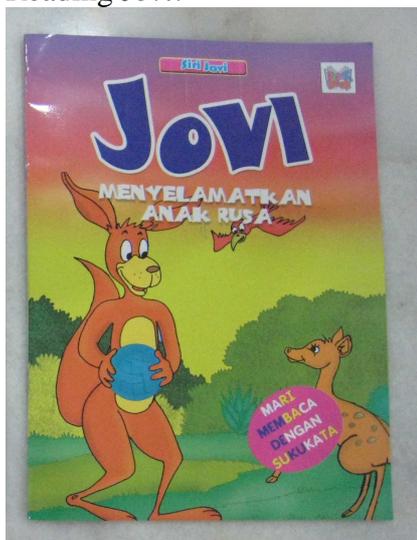
- c) Animal Farm.



d) Cutting and Cooking.



e) Reading *Jovi*.



Appendix 2: Interview questions with the Parent

- a) What are your jobs?
- b) How and when you become Deaf?
- c) How did your child become Deaf? What is the cause of the deafness?
- d) How did you find out that the child is Deaf?
- e) How did their doctor confirm the disabilities? What procedure do they need to do?
- f) In what way the child has communicated with you as parents, his grandparents, your friends and strangers? How did the child do these communications?
- g) Are there any special patterns of behaviour the child has shown?
- h) Did the child has started to pick up languages through education, enrichment activities?

Appendix 3: Interview question with the babysitter

- a) Is the subject your first Deaf client to be taken care? When did it start?
- b) In what way, you try to get the child to respond to them?
- c) Do you know sign language? How many sign vocabulary do you know?
- d) How will you understand the child when you are trying to talk to him, i.e. asking for milk, need to go to toilet, he indicating that he is hungry?
- e) How did you teach the child to behave well in the place he is in?
- f) What challenges you have been experiencing when the child is under your care?
- g) How the subjects interact with other children at the centre?

Appendix 4: Convention on the Rights of the Child

Convention on the Rights of the Child
Adopted and opened for signature, ratification and accession by General Assembly
resolution 44/25 of 20 November 1989
Entry into force 2 September 1990, in accordance with article 49

...

Article 23

1. States Parties recognize that a mentally or physically disabled child should enjoy a full and decent life, in conditions which ensure dignity, promote self-reliance and facilitate the child's active participation in the community.

2. States Parties recognize the right of the disabled child to special care and shall encourage and ensure the extension, subject to available resources, to the eligible child and those responsible for his or her care, of assistance for which application is made and which is appropriate to the child's condition and to the circumstances of the parents or others caring for the child.

3. Recognizing the special needs of a disabled child, assistance extended in accordance with paragraph 2 of the present article shall be provided free of charge, whenever possible, taking into account the financial resources of the parents or others caring for the child, and shall be designed to ensure that the disabled child has effective access to and receives education, training, health care services, rehabilitation services, preparation for employment and recreation opportunities in a manner conducive to the child's achieving the fullest possible social integration and individual development, including his or her cultural and spiritual development

4. States Parties shall promote, in the spirit of international cooperation, the exchange of appropriate information in the field of preventive health care and of medical, psychological and functional treatment of disabled children, including dissemination of and access to information concerning methods of rehabilitation, education and vocational services, with the aim of enabling States Parties to improve their capabilities and skills and to widen their experience in these areas. In this regard, particular account shall be taken of the needs of developing countries.

...

Appendix 5: Interview Reports

Interview with AE's parents and babysitter

At the time of the interview, AE was 26 months old. According to the mother, since both she and her husband are Deaf, the doctor had recommended that she brought her baby in for a hearing test as soon as he was born. The mother however did not believe he is Deaf until AE was about 12 days old, when she observed that he did not respond to the sound of the door banging. It was not until AE was a month old, that she took him to see a doctor who diagnosed AE as profound Deaf. However, she was not convinced with the diagnosis; therefore she took AE for a second diagnosis at another hospital. The second diagnosis confirmed that AE is profound Deaf.

When asked whether she would seek ways to help her son hear, she responded that she had not thought of any methods yet. She said it was difficult to make a decision on whether she would like her son to have a cochlear implant put in. AE's father was born deaf to a hearing family and has succeeded in both career and education. He uses signs to communicate with his family members. AE's mother has a Deaf sister. Since both her sister and she are able to speak, they usually speak to their parents. Due to this family background, AE's mother would like her son to develop both signing and speaking abilities despite the hearing loss.

AE has a Hearing elder sister who his mother reported as able to understand the signs they use at home and had no problem communicating with both parents and AE. The father on the other hand struggled in understanding AE's signing as he spent less time with AE. The mother had to explain to the father whenever he failed to understand what AE was trying to express. The father usually took them out for an outing when he was off work and AE was often observed as being very curious about his surroundings and asked his father many questions about the things he saw and his father would try to explain them to him.

AE's mother reported that when she asked AE to do something, he showed that he understood her request by getting it done for her. When she was angry with AE, she would sign "angry" to him and her son would then throw a tantrum, by crying, lying on the ground or upturn the chair. When she asked AE where his dad was by signing "father where", according to the mother, although AE showed that he understood the sign "father" yet he did not look for his father.

AE's mother concluded that AE was able to recognize most of the household things and everyday actions. For instance, he would take off all his clothes when the mother signed "bath" and he would quickly sit down at the table when called for meals. The mother admitted that her son was unable to express the signs but, most of the time, he was able to understand the signs she signed to him and he would be able to take action accordingly. AE's mother had been struggling to understand AE's babbling (accompanied by some vague signing). She tried to teach him new signs every day, for example during meal times, she taught AE the signs for the dishes she had prepared such as "fish", "chicken", and "rice".

Due to the sister's hearing and speaking ability, she often received more attention from the mother. AE was able to see his sister's advantage, so he would try to mouth and sign to his mother so that the mother would pay more attention to him. The mother had

difficulty in treating them in same way and fairly. When he did not get the attention, AE would show his irritation at his mother.

AE and his sister are usually sent to a nursery close to the school where their mother works as a teacher during weekdays. According to the owner of the center, AE is the first and only Deaf child registered at the center. AE was first sent to the center when he was 2 months old. The owner of the center, who is known as Ibu, said she used a few very basic signs to communicate with AE. Sometimes, his sister would help to ease the communication between them. Ibu had no problem in understanding AE's requests. For example, AE would use the sign "milk" to indicate when he wanted to drink and the sign "smelly" when he wanted to defecate.

When asked about the communication between AE and the other children under Ibu's care, she said they were just children and they had no problem in understanding each other. However she added that it can be difficult to discipline AE to behave due to his deafness and there was no formal education provided to him while he was under her care.

Interview with HW's parents and babysitter

HW was 30 months old at the time of the interview. His mother felt that HW had hereditary deafness since HW did not suffer any illness. When HW was just one year old, she tried catching his attention by clapping her hands, or shouting at him and hitting on objects. HW did not respond to her at all so she decided to bring him to a doctor for testing. HW was confirmed Deaf after the first doctor tested HW's level of hearing ability and a second doctor carried out a series of psychology and behaviour tests. His father said that HW will be fitted with a pair of hearing aids on a six-month trial soon to see if he is able to accustom himself to the hearing aids.

Four months after his birth, his parents began signing to him and after one year, HW could sign some simple vocabulary. His first signs were "father" and "toilet" with some phonological errors such as wrong handshape and improper movement. HW could understand and communicate well with his maternal grandparents and some of his parents' friends but not with his paternal grandparents. The mother has several Deaf members in her family. If HW met a stranger, he was able to say "hi".

HW's favourite animal signs were "lion" and "tiger"; he signed mostly animal words such as "deer" and "horse". He liked playing with his toy car and touching his book – he must have his book with him when he sleeps. At 9.15pm every night, at least six days per week, HW's mother would teach him how to sign but he did not pay attention all the time in the few first months. Slowly and patiently, she taught him and now, after seven to nine months of teaching, HW has picked up some simple sign words. HW liked comics and picture books best. If his mother brought him a new thing or toy, HW would get excited and quickly match the things/toys with the pictures in his book. He would usually point at the pictures and his mother would teach him to sign the pictures. She said he is smart as she would only need to teach him once and he would be able to sign the word the next time. HW's father observed that his son could solve animal puzzles on his own and concluded that HW has an excellent memory.

When HW was four months old, his mother 'told' him she was tired of breastfeeding him but HW was not able to understand. Upon reaching six months, HW did a baby sign for "diaper" which surprised his mother. Thereafter, she decided to teach HW signs

and HW has already started picking up baby signs. The baby signs are just the same as the Deaf adults' signs for all phonologies, i.e. movement, location, handshape and palm orientation. The difference is that the baby signs are selected to just to allow the babies to express their needs to their parents. When the baby uses signs, they will not be able to produce correct phonology. HW was nine months old when he told his mother "want to eat...milk" in a cute and happy way.

HW could respond to his mother's signs when he was 1 year 6 months old. His mother related an example when she asked him to wash his face but he refused. She asked him again and HW told her to wait. Only when she decided to walk away from him did HW follow her to wash his face. She was surprised by his ability to imitate her action. She also mentioned that HW could open the bottle cover on his own, which was an indication that he learns through imitation.

HW enjoyed reading books. His mother would let HW choose a book to read when they were at a bookshop and she would buy it for him if the book was good. She is planning to set up HW's library in the house by giving him a few books a time. At times, HW would ask his mother what the word means and if she was unsure, she would consult her friends before explaining to HW. Most of the time, she was the one who teaches HW because his father usually worked very long hours and HW would be asleep by the time he reached home. His father said that HW has improved a lot in his language acquisition as the mother has been working with him.

While carrying out an interview session at HW's babysitter's place, the babysitter who has been taking care of HW since he was 1 month old, said that she had to learn some important signs in order to communicate with HW. She usually looked into the sign book which she has borrowed it from HW's parents for signs whenever it was necessary to communicate and she did know all the signs. When the HW threw a tantrum, the babysitter would have to be firm with him by showing a serious facial expression.

According to her, HW and the other hearing children who were under her care usually communicate with each other with visual language. HW would use the sign "milk" whenever he wanted it and the babysitter understood him. The babysitter related one incident where HW taught her the alphabets when he was playing with the alphabet mat on the floor. When asked about the vocabulary HW may have acquired, the babysitter simply replied that he is clever. Sometimes she heard HW producing sounds like "ahh" and "mumm". She had some difficulties getting HW's attention when he had his back to her or when he was at a distance from her. She described HW as very active child who made a lot of noises.

Interview with NC's parents and babysitter

NC was 31 months old at the time of the interview. Based on the interview with NC's mother, she admitted that she does not know what caused the deafness of her elder daughter, and of her son, NC. She believes it is hereditary. She has two Deaf brothers. When NC was 3 months old, she suspected he could be Deaf like his elder sister. Therefore, she took him to a hospital for testing and the doctor confirmed that NC is Deaf. She said she accepted his son as he is.

When asked about NC's main language, she said sign language is the first language for NC as all of her family members are Deaf. She added that she attempted to teach signs to NC however, NC was not able to pay attention to her. She had to repeat each sign

many times before he can get it. The family usually used simple signs or home signs to communicate with NC's grandparents who are Hearing. According to his mother, NC did not have many signs in his vocabulary. Most of the time, she only saw him signing "toilet", "eat" and "milk". She said that NC understood most of the time she tried to communicate to him. She began teaching him sign language only when he was one year old.

NC was 6 months old when he was first sent to the babysitter; since about two and half years ago. The babysitter said sometimes NC responded to the sounds around him, however, she did not communicate with him so much except when disciplining him on what he could and could not touch in the house. She did not have any problem with NC. NC did not communicate much with her even though he was the only child she was looking after.

Interview with JK's parents and babysitter

JK was 28 months old at the time of the interview. When JK first had an appointment with a doctor for her hearing check, the doctor diagnosed her as not Deaf. Her grandmother accepted the diagnosis but her mother did not and suspected that JK is Deaf because many times JK did not respond to the sound of door banging while she was sleeping. One year later, there was an occasion when it was observed that JK did not respond to the sound of her mother clapping and JK often used her hands to convey a message. Therefore, her mother took her for a hearing diagnosis at a private hospital. JK's deafness was confirmed twice because she had to go through another hearing check at a government hospital in order to allow them to apply for the *Orang Kurang Upaya* (OKU) card, which is a welfare card entitling disabled people in Malaysia for special provisions.

When JK's mother was asked about whether she has considered any procedures that could bring JK's hearing ability back she nodded and said that her mother (JK's grandmother) wanted JK to have a cochlear implant. JK's mother was actually against the idea as she did not want JK to undergo another surgery after her two heart surgeries. JK had had a heart surgery when she was just a day old and another when she was 25 months old. When JK's grandmother was provided more information on cochlear implants and its implication in JK's life, she decided that she would leave the decision to JK's mother.

JK's mother added that since JK was put under her grandmother's care, JK was often confused as to who her mother and father are. Sometimes, she took her uncle and aunt as her parents. She even signed "father" to every man she met. JK's mother had to correct her many times. JK's mother was relieved when JK finally understood what "father" and "mother" really meant and she has pointed to the correct person when people asked her for father and mother.

JK would sign "don't know" as a response whenever adult strangers asked her some questions. JK's mother would teach her new signs and practice signing on a regular basis. JK's mother used real objects to help JK understand better. For example, when she was teaching the sign for "ball", she would take a ball out to show to JK so she would understand and remember better.

When in the car, JK would sign the things she sees (for example a house or a tree) automatically. If there were things she did not know how to sign, she would ask her

mother. But this did not happen very often. In terms of talking with people, she would take some time to communicate with people she was not familiar with. Every night, JK would bring a book to her mother and ask her to teach signs according on the pictures in the book before she went to bed.

JK's mother reported that JK usually understands when she signed "pick up your clothes" and JK would be able to do the task on her own. JK is also able to sign correctly if she wants to go to the washroom. JK is very independent and wants to do most things by herself. For example, she will not allow her mother to touch her diapers because she wants to change her diapers on her own. Her mother would allow her to do so but helps her along. JK is also able to make her own decision for example when her mother chose a dress she thinks is pretty for JK, JK would reject it if she does not think the dress is pretty.

JK's grandmother has been taking care of JK since birth. Although her grandmother is Hearing she uses sign language to communicate with JK. The grandmother was a teacher for Deaf students and has two deaf children; therefore she is proficient in sign language. According to her grandmother, she has taught many signs to JK and tried to expose her to new things. Although she was a teacher for the Deaf, she did not provide formal education in the house for JK. She felt she was not good enough to be JK's teacher. Normally every night, JK would get a book to learn more signs until she is ready to go to bed.

Her grandmother would like JK to produce signs to make a request, for example "drink milk" to ask for milk, and to sign "book" when she wants a book. Each time she produced the correct signs, her grandmother would grant her requests. Sometimes, JK would ask "why" to her grandmother's requests or questions, and her grandmother assumed that this means JK understood her. JK often did things on her own, for example using chopsticks to eat noodles, getting her grandmother to open a drawer so that she can get chocolates. It was her mother who was often surprised to see JK using signs that her grandmother has taught her. For example, JK's mother was surprised that JK could express the sign "delicious". JK has a good memory, and can remember things and signed very well. Her grandmother said it can be difficult and very tiring to take care of JK as she can be very temperamental and stubborn. Her grandmother added that JK also often changed her clothes even though there was just a small dirty spot on it and she usually did it herself. Normally she would sign "thumbs up" once she was done with the things she did herself and her grandmother would respond by signing the same, that is "thumbs up".

Appendix 6: Observation Reports

Observation on AE

At home

Event 1

AE was sitting at the dinner table when his maternal grandmother and Deaf aunty came. AE quickly got down from the chair, and ran to the door to greet them and then took his grandmother's and aunt's hands at the door and greeted them, as a sign of respect in Malay culture.

Upon his return to the table, he expressed a facial expression, closing eyes hard with lips pressed together, indicating the food he was eating is sour. He saw the packets of chocolates brought for him and asked his aunt to open it up for him by giving back the chocolate to his aunt. There was no verbal communication between AE and the people around him.

Event 2

When his mother asked him whether the food tasted nice by signing "delicious", AE ignored her, looking elsewhere. His mother tried to teach AE to sign "chocolate" but AE totally disregarded her. Nevertheless, his mother continued to teach him. He did not want to sign, so he turned his head to another direction, looking blank. Then suddenly, AE changed his mood, and pointed to other things and asking what they were. His mother answered him there was a lorry outside by producing sign vocabulary "lorry".

According to his mother, AE loves his Deaf aunt very much, because she's a Deaf and was able to sign, and he cannot talk. He took a tennis ball for the aunt after the aunt signed "ball there take". Soon after that, his mother asked AE to get the big purple ball from the store room, he was able to understand the sign for "play" and "ball". Hence, he followed the mother to the room and took the ball. On one occasion, his aunt asked him about his mum (signing "mother"), he pointed to his grandmother instead. The mother had taught him how to sign "grandmother" but he did not repeat the sign. Instead, he continued playing with the ball.

Event 3

The mother got him to sit and tries to teach AE the colours in the phone screen. There were red, black and green. Although the mother signed "colour", "red", "black" and "green", AE responded, by signing after the mother, with incorrect handshape. AE did not make correct handshape "G" for green, and "1" for black for instance. He also signed "phone" after his mother. The mother grabbed the phone and taught him colours sign again, but he only managed to sign "red". However, he still did not get it right. Instead of "r" handshape finger on the lips, he signed handshape "1" on the lips, rolling it down to his chin.

AE's mother then took out a pictorial book while AE continued to pretend talking on the phone. The pictorial book was about human parts. His mother pointed to the picture and then AE responded by way of pointing to the corresponding parts on his body. Initially, AE did not want to pay attention as he wanted to continue playing with his phone. In the end, his mother had to put the phone away from his sight in order to have him respond to her. Then he signed "phone" on his own.

Finally, AE's mother taught him some lips movement. The first sign was "mother" and then "father". She wanted to make sure her son's lips move correctly, so she asked him to repeat the moving of lips as "mama" and "father" as well. AE signed "mother" and "father" after the mother.

At supermarket

Event 4

He was eating his sweet candy, smiling and posing. When his mother came over to show him some fruits and taught him those fruits sign, he did not sign the fruits after her. For most of the signs the mother was trying to teach him, he did not repeat after her. The only sign produced by AE was "apple".

Event 5

While his parents were pushing the trolley, he continued to eat his candy. When the adults were busy signing, he stared at other directions. His father made some stops, asking him about the posters in the supermarket. There were some pictures of football players, the father explained by signing "run" but he responded by moving his legs, as if trying to kick something. It was because those were pictures of football players.

Event 6

AE's mother showed to him a toy car, asking him what it was. He did not respond to her. Although the mother signed "car", he just smiled. His father then pushed the trolley and then made another stop, where a model toy was wearing sunglasses. He expressed sunglasses by just slightly moving his hands around his eyes. The father produced the sign of "sunglasses" and AE did the same after him.

Event 7

While waiting at the cashier queue, a friend tried to communicate with him. He was more interested in the new things surrounding him, and receipting signs. When he saw the coin slot on his trolley, the friend immediately taught him to sign money, showing him money from her wallet. He then grabbed RM1 note from her, trying to slot the note into the coin slot. However, realising he was unable to slot the note; the friend gave him a 50 cent coin. Since he was unable to put extra coin in the trolley, the friend requested him to give her back the money, and then signed "thank you".

Event 8

The friend asked him why there was a wound on his chin by pointing to his chin. He didn't understand her; instead he put his fingers inside his mouth. In one incident he accidentally kicked her, his mother immediately asked him to apologise to her. He did not respond, just looked at his mother.

Event 9

When paying at the counter, his mother asked him to hand over the packet of sweets to her (signing "sweets"), as the cashier needed to scan it. He responded by giving the packet willingly to her. While waiting, the friend made some other attempts to teach him new signs, by showing him the groceries and signing to him. He responded well to her and repeated her signs for "wash", "aerosol" and "mosquito". According to his mother, he would respond to her at home, but ignored her when they were out.

After getting back his packet of sweets, he continued eating it. The researcher asked him for a sweet by pointing the sweets and signing to him the handshape "1". AE gave him

one; and signed “thank you” as well. The friend tried to ask him whether the sweets tasted good, but he did not give any response.

Observation on HW

At home

Event 1

HW’s father showed him a small book with pictures of animals. Initially HW did not want to respond to his father as he wanted to play with his toys. HW feared that his father might take his toys away; hence he hid it behind his back. He could sign the animals’ signs but there were also some “home sign” he did such as “bird”.

Event 2

HW put the toys one by one on the pillow, and signs the colours. HW was able to identify well the colours but does not sign the correct hand shape for “yellow”. This activity was repeated twice, and her son repeats the same incorrect phonology for “yellow”, where the handshape is supposed to be “y” but he was using the handshape “s”. The other signs HW was able to produce himself are “green”, “blue”, and “red”.

Event 3

The third activity was showing him another book with lots of pictures of body parts, fruits, transport, animals, etc. There were two ways his father asked him to sign; by pointing to the picture and asking him to sign it, and by signing the item and asking HW to point to the matching picture. It was quite surprising to see HW able to answer almost all pictures correctly. Even though, there were also some signs he could not do properly on his own and was making a lot of phonology errors he could repeat after his father with the correct sign. The signs HW has shown are tiger, elephant, deer, rhino, lion, rat, rabbit, bird, dog, cat, frog and beetle.

Event 4

HW could put jigsaw puzzles together and when he was unsure whether it was the correct piece or location, he would look at his father for confirmation. Sometimes, his father would tell him to turn the piece to the right position, and he would try to do so. In this activity, his father communicated with him using sign language and gesture expression so that he was able to finish playing jigsaw.

Event 5

He was identifying individuals such as father, mother, himself (name sign), friends and other people’s name sign. He was able to identify them correctly but if some of the individuals were not there, he would point towards the door, indicating that these people were somewhere outside.

At supermarket

Event 6

HW was aware of the researcher’s existence. He always ensured that the researcher was nearby with them by asking his mother “friend where”. His mother had been asking him to sign fruits, colours and alphabets. HW responded very well, except that he was not able to sign with the proper hand shape for “yellow” and “y”. The other signs HW has shown are banana, apple, orange, grape, milk, toothbrush, shoes and bicycle.

Event 7

He learned new signs that day; “pink” and “purple”. However, he got mixed up between “red”, “pink” and “purple” as those colours were similar to him. In the end, he signed more than one colour (for eg: purple and pink) when his mother pointed at a red object and asked for the colour.

Event 8

HW could recognize alphabets from A-Z in a pictorial book as well. When his mother pointed those alphabets out one by one, he managed to sign them correctly, except for a few with wrong locations, such “Q” that he signed was in a similar location with “G”. As for numbers, he manages to sign from 1 – 11, although gets mixed up from number 6 to 9.

Event 9

When his mother asked him to do something, for example putting back the toys into the display area or to zip up his own bottle bag, he responded well to these instructions, except for the last toy which he loved so much that he refused to leave it behind.

At church

Event 10

When it was time for everyone to give donation, they all stood up. HW’s mother asked him to stay where he was and to wait for her to get the money, HW just focused on her direction, ignoring the surroundings, except once where a boy passed by to look. She asked HW to put the money into a donation basket. After doing so, he walked towards his mother. When she asked him where the money was, and whether he had put the note into the basket, he did not reply her.

Event 11

The mother signed “see” and “book”, and asked him to look in front. He responded by looking to the front but did not response with any sign. When she signed “butterfly”, he did not repeat after her.

Event 12

Next, there were some pictures in front on the white board. She signed “Jesus”, and “Woman Mother”. Her son repeated her signs “Jesus” and “Mother Woman”. A few moments later, HW lost his focus and kept ignoring his mother.

Event 13

He signed “good” to his mother, but when his mother asked him “what is good about”, he did not explain further. When the mother asked him to look at what was in front, it was a picture of a tree, and he signed “tree”. He looked at his mother again, and when she signed “tree”, he repeated after her and nodded his head. The sign vocabulary “root” was also seen exchanged between HW and his mother.

Event 14

When the picture showed a boy saying a prayer, his mother signed “pray” and he repeated “pray” and “amen”. He also signed “book” and “girl” when he saw other pictures. He also signed “red” when the presenter was holding a red card. The mother warned HW not to play, and to sit on the chair when HW played with the chair near his mother. HW obeyed. He even signed “silent” and “pray” but did not sit on the chair.

Event 15

There was another short conversation between the mother and the child, where she asked what those pictures are about, and he replied. He signed “talk”, repeating after his mother signed. While the presenter was showing some white eggs, he signed “white” and “eggs”.

Event 16

At the moment, the children in the room were having light snacks. HW was not keen to sit still at the table. He walked around in the room and observed what others were doing. He was quite attracted to people surrounding him. He knew to sign “thank you” when his mother instructed him after getting biscuits from others.

Observation on NC

At home

Event 1

The mother tries to get her son to read book but her son simply isn't interested. Instead, her son keeps focusing on the video camera that's recording him. Hence, he wouldn't see to what the mother is trying to sign to him. She is unable to get him to sit still so that she could teach her some signs. His sister is trying to teach him some sign vocabulary, however it works only for short time. His sister manages to get NC to sign “cow” and that is the only the vocabulary ever been seen during the observation. The mother is unable to get NC engaged for some communication, even for 1 minute.

At supermarket

Event 2

The mother takes NC to a supermarket and as she points him things and sign to him, he tries to follow. Sitting in the trolley cart, he begins to copy mom's signing as she points to the particular things. For this case, he signs “drink” and “butter” after his mother. However, he couldn't sign the vocabulary correctly. His mom signs “cow” but he merely places both his hands on head. At the biscuits section, he shows some interest by pointing to some particular biscuits product. She signs “biscuit” to him as a response and he manages to copy. He is also able to sign “milk” when he saw the milk on the shelter. When he is put on the floor so that he can walk on his own, he is likely signing “toilet” and his mother sees it and then replies him back by signing the same vocabulary – toilet.

At church

Event 3

At the end of the play session, all the children returned the toys back into the basket, NC's mother signed “keep” to him and pointed towards the basket. He responded. He got up and took the toy towards the basket and throws it in. As he walked back, he looked at another child and his mother signalled ‘no’ to him as he was about to move to the child and asked him to come towards her instead which he did.

Event 4

As they were with another group, she signed “sit” to him again and again. He did not respond to her request and even if he did he only sat for a very short time and then got up again. While the mother was talking with a group of people next to her, she sat NC down. She signed “quiet” to him. NC sat down and started taking out his water bottle

from the bag. Shortly after that, NC got up and was running around in the hall. She signed to him “wrong, play wrong” but he did not bother and turned away to walk around in the hall.

Event 5

NC was misbehaving, he laid down on the floor to go against his mother. She signed “wrong” but he remained lying down on the floor. She signalled to “carry” him and yet he did not bother. In this situation, it is the mother signing most of the time and she never got proper response from NC. NC did not express any sign vocabulary in the hall.

Observation on JK

At home

Event 1

JK’s mother signed to ask if JK wanted to drink water but she didn’t quite respond but signed “boat” probably as a result of what she had seen an image of boat in the computer, next to her. The mother tried to initiate conversation with her but JK just looked at her mother. Although she seemed focused, she did not respond. The mother then brought her out into their living room and gave her a pictorial book. The mother signed to JK “sit-down” and JK obeyed. Her mother attempted to get JK to sign after her for the vocabulary “apple” and “ball”. The mother repeated the sign of these objects. However, JK did not respond so much on what is being asked. Eventually JK replied a home sign of “cap”, which she put her open hand on her head, instead of using handshape of A and swing it slightly near to the forehead. with a home sign for “cap”.

After tried for some time, her mom decided to take away the book and brings along JK’s favourite whiteboard. She started drawing on the board but still JK did not respond to anything that was asked. She felt that JK could not be shy or pretending not to know. Then, JK’s grandmother came and sat together with her looking at JK. After much asking, JK also managed to sign “fish” and ‘flower”. JK then played with the “apple” puzzle and when asked what it was JK signed “apple”. After she finished the “banana” puzzle, JK produced “banana” in sign language. JK’s mother said she has to sign repeatedly and constantly to make sure that JK saw one of the repeated signs. JK often gave her mother nods during these sessions but she did not always respond with a sign. It was noticed that JK constantly looked at her mother as if she is seeking for clarification on what they are going to do next.

At church

Event 2

JK walked to the piano and her mother signed to her that it is wrong to touch the piano as JK tried to flip over the cover. Perhaps JK understood her mother because she did not touch the piano. Instead, they both went into the children’s area where there toys and coloured pens were. The mother sat her down to play with a set of toys with cars/garden/houses and tried to get JK to sign and communicate, however, JK did not respond. The only time she signed was when she dropped some of her tit bits on the floor and the mother picked them up and signed to her “where to throw?” and JK responded “where” with a blank look.

In the car

Event 3

In the car on the way home, JK was eating her chocolate and sitting next to her mom. JK was very aware of the video camera and as she stared into the camera, she showed a certain sign of trying to know what this “thing” in front of her was. She signed her home sign for “delicious” as she was eating her chocolates. When she was shown the video camera screen of herself and her mother, she instantly, she showed sign for “mother”. When she saw herself on the screen, she expressed the sign vocabulary “me”. When her mother was signing something to her, she could straight away respond by nodding as a sign of understanding.

Appendix 7: Children sign vocabulary development prior to the learning activity sessions

Subject 1: AE

Specific nominals

(nil)

General nominals

Milk

Action words

Drink

Defecate

Come

Clap

Modifiers

Mine

Good

Personal social words

Good bye

Thanks

Keep-quiet

Grammatical function words

Yes

No

“Shaking”

Illustrated sign vocabularies examples:



GOOD-BYE



MILK



THANKS



FINISH



QUIET



MINE

Subject 2: HW

Specific nominals

House Father Mother Mid Valley

General nominals

Hearing-aid	Banana	Bird*	Baby	Birthday
Ball	Bag	Blue	Cow	Cat
Chair	Car	Camera	Comb	Dog
Diaper	Hair band	Fish	Fan	Flu
Thunder*	Friend	Flower	Ice-cream	Penguin
Lion	Lemon	Lamp	Moon*	Milk*
Money*	Medical*	Pink	Red	Rain
Shoes	Sun	Tiger	Toilet	Telephone*
Toothbrush	Tree	Towel	You	Yellow
Water	We	White		

Action words

Break	Bless	Bathe*	Care	Cry
Cough	Close	Catch	Drink	Eat
Find	Finish	Fall*	Keep	Pray
Lost	Laugh	See	Defecate*	Sleep
Vomit	Wash	Write	Work	Wait
Wash up				

Modifiers

Angry	Afraid*	Big	Beautiful	Cold
Clean	Dirty	Hot	Happy	Pain
Slow	Sick	Sad	Silent	Wrong

Personal social words

Amen Not

Grammatical function words

Where (1)* Where (2)

Illustrated sign vocabularies examples:



BLUE



CAMERA



CLOSE



BANANA



AMEN



ANGRY

Subject 3: NC

Specific nominals

Father

General nominals

Milk Orange Toilet

Action words

Eat Defecate

Modifiers

(nil)

Personal social words

Thanks Good bye

Grammatical function words

(nil)

Illustrated sign vocabularies examples:



MILK



FIND



TOILET



FATHER



MILK



THANKS

Subject 4: JK

Specific nominals

Father Mother Grandfather Grandmother Friend

General nominals

Toilet Clothes Rice Water Shoes
 Book Ice-Cream House Tree Apple
 Chicken Baby Milk Dog* Cat
 Bird Fish Key Ant Banana
 Uncle Medicine Dustbin Hair Soup
 Handphone Balloon Spectacles Flower Chocolate

Action words

Defecate Change Drink Eat Sleep
 Bathe Work Brush-teeth Wash up Sit*
 See* Take* Vomit

Modifiers

Dirty Good Know Wrong Delicious
 Cool Hot Nothing Beautiful

Personal social words

No

Grammatical function words

Where What

Illustrated sign vocabularies examples:



FATHER



DEFECATE



DIRTY



RICE



FRIEND



WATER

Note: There are some sign vocabularies marked with asterisk () in the list and these are considered as home-based signs.*

Category	Sign Vocabularies uttered by				
	Subject:	AE	HW	NC	JK
Specific nominals		<i>nil</i>	4	1	5
General nominals		1	48	3	30
Action words		4	26	2	13
Modifiers		2	15	<i>nil</i>	9
Personal social words		3	2	2	1
Grammatical function words		3	2	<i>nil</i>	2
		13	97	8	60

Appendix 8: Learning Session Data Collection

Session 1 with subject AE

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> <i>(sign the vocabulary)</i>	<i>Reception</i> <i>(show action)</i>	<i>Imitation</i> <i>(sign the vocabulary)</i>	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green			1111	
Purple				
Learning Activity: Matching picture to picture				
Burger			1	
Tomato	11			
Soup				
Jelly				
Learning Activity: Animal Farm				
Chicken			1	
Sheep			1	
Car				
Cow			11	
Horse			1	
Apple				
Goat			1	
Man				
Duck				
Learning Activity: Cutting and cooking				
Bread				
Tomato				
Cabbage				
Egg				
Corn				
Onion				
Spoon				
Fork				
Knife				
Plate				
Cheese				
Vegetable				
Learning Activity: Reading "Jovi"				
Kangaroo				
Kancil				

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> <i>(sign the vocabulary)</i>	<i>Reception</i> <i>(show action)</i>	<i>Imitation</i> <i>(sign the vocabulary)</i>	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green			1	
Purple			1	
Learning Activity: Matching picture to picture				
Burger			1	
Tomato				
Soup	1			
Jelly				
Learning Activity: Animal Farm				
Chicken			1	
Sheep				
Car			1	
Cow	1		1	
Horse			11	
Apple			1	
Goat			11	
Man			1	
Duck				
Learning Activity: Cutting and cooking				
Bread				
Tomato				
Cabbage				
Egg				
Corn				
Onion				
Spoon				
Fork				
Knife				
Plate				
Cheese				
Vegetable				
Learning Activity: Reading "Jovi"				
Kangaroo				
Kancil				

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> <i>(sign the vocabulary)</i>	<i>Reception</i> <i>(show action)</i>	<i>Imitation</i> <i>(sign the vocabulary)</i>	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green				
Purple				
Learning Activity: Matching picture to picture				
Burger				
Tomato				
Soup				
Jelly				
Learning Activity: Animal Farm				
Chicken				
Sheep		1		
Car				
Cow		1		
Horse				
Apple			1	
Goat				
Man				
Duck				
Learning Activity: Cutting and cooking				
Bread				
Tomato				
Cabbage				
Egg			1	
Corn				
Onion				
Spoon				
Fork				
Knife				
Plate				
Cheese				
Vegetable				
Learning Activity: Reading "Jovi"				
Kangaroo				
Kancil				

Session ___1___ with subject ___HW___

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> <i>(sign the vocabulary)</i>	<i>Reception</i> <i>(show action)</i>	<i>Imitation</i> <i>(sign the vocabulary)</i>	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green	111			
Purple	1111111			11
Learning Activity: Matching picture to picture				
Burger	11		1	
Tomato		1	111	11
Soup	1	1	11	1
Jelly	1		11	1
Learning Activity: Animal Farm				
Chicken	1	11		
Sheep		111	11	1
Car	1	1	1	
Cow	11	1	1	
Horse	1	111		11
Apple	1	1		
Goat		11	11	1
Man			1	
Duck				
Learning Activity: Cutting and cooking				
Bread			1	
Tomato				1
Cabbage	1			
Egg	1			
Corn			1	
Onion			1	
Spoon	1			
Fork	1			
Knife	1			
Plate				
Cheese				
Vegetable				
Learning Activity: Reading "Jovi"				
Kangaroo	1			
Kancil				

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> <i>(sign the vocabulary)</i>	<i>Reception</i> <i>(show action)</i>	<i>Imitation</i> <i>(sign the vocabulary)</i>	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green				
Purple				
Learning Activity: Matching picture to picture				
Burger	11	111		
Tomato	11	11		
Soup	11	11		
Jelly	1	11	1	1
Learning Activity: Animal Farm				
Chicken	11			
Sheep	11	11		
Car	1	1		
Cow	11	11		
Horse	1	11		
Apple	11			
Goat	1	11		
Man		11	1	
Duck	1	1		
Learning Activity: Cutting and cooking				
Bread				
Tomato				
Cabbage				
Egg			1	
Corn				1
Onion				1
Spoon				
Fork				
Knife	1			
Plate				
Cheese			1	
Vegetable				
Learning Activity: Reading "Jovi"				
Kangaroo	1			
Kancil		11		

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> <i>(sign the vocabulary)</i>	<i>Reception</i> <i>(show action)</i>	<i>Imitation</i> <i>(sign the vocabulary)</i>	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green		11		
Purple		1		
Learning Activity: Matching picture to picture				
Burger	11	11		
Tomato	111	11		
Soup	11	11		
Jelly	1	11	1	
Learning Activity: Animal Farm				
Chicken	1	1		
Sheep	11	1		
Car	1			
Cow	1		1	
Horse	11	11		
Apple				
Goat	1	1		
Man	1			
Duck				
Learning Activity: Cutting and cooking				
Bread			1	
Tomato				
Cabbage				
Egg			1	
Corn			1	
Onion			1	
Spoon				
Fork				
Knife	1			
Plate				
Cheese				
Vegetable				
Learning Activity: Reading "Jovi"				
Kangaroo				
Kancil				

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> <i>(sign the vocabulary)</i>	<i>Reception</i> <i>(show action)</i>	<i>Imitation</i> <i>(sign the vocabulary)</i>	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green				
Purple				1
Learning Activity: Matching picture to picture				
Burger				
Tomato				
Soup				
Jelly				
Learning Activity: Animal Farm				
Chicken		1	1	
Sheep			111	1
Car		1	1	
Cow		1	1	
Horse		1	11	1
Apple		1	1	1
Goat	1	1	11	
Man			1	1
Duck				
Learning Activity: Cutting and cooking				
Bread				
Tomato				
Cabbage				
Egg				
Corn				
Onion				
Spoon				
Fork				
Knife				
Plate				
Cheese				
Vegetable				
Learning Activity: Reading "Jovi"				
Kangaroo				
Kancil				

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> <i>(sign the vocabulary)</i>	<i>Reception</i> <i>(show action)</i>	<i>Imitation</i> <i>(sign the vocabulary)</i>	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green				
Purple				
Learning Activity: Matching picture to picture				
Burger		1		1
Tomato		1		11
Soup		1		1
Jelly		1		1
Learning Activity: Animal Farm				
Chicken	1			
Sheep			11	
Car			1	1
Cow	1		11	1
Horse	11	11		
Apple				1
Goat	11	1		1
Man				1
Duck				
Learning Activity: Cutting and cooking				
Bread			11	
Tomato				
Cabbage				
Egg			1	
Corn			1	
Onion			1	
Spoon			1	
Fork			1	
Knife				
Plate				
Cheese				
Vegetable				
Learning Activity: Reading "Jovi"				
Kangaroo				
Kancil				

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> <i>(sign the vocabulary)</i>	<i>Reception</i> <i>(show action)</i>	<i>Imitation</i> <i>(sign the vocabulary)</i>	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green				
Purple	1			
Learning Activity: Matching picture to picture				
Burger		1		11
Tomato	1	1	11	1
Soup		11		
Jelly	1	11		1
Learning Activity: Animal Farm				
Chicken		1		1
Sheep				
Car			1	1
Cow	1			1
Horse			1	
Apple			11	
Goat				1
Man	1			
Duck				
Learning Activity: Cutting and cooking				
Bread			1	
Tomato				
Cabbage			1	
Egg				
Corn			1	
Onion			1	
Spoon				
Fork			1	
Knife			1	
Plate				
Cheese			1	
Vegetable				
Learning Activity: Reading "Jovi"				
Kangaroo				
Kancil				

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> (sign the vocabulary)	<i>Reception</i> (show action)	<i>Imitation</i> (sign the vocabulary)	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green				
Purple				
Learning Activity: Matching picture to picture				
Burger				
Tomato		1		
Soup				
Jelly				
Learning Activity: Animal Farm				
Chicken				
Sheep		1		
Car				
Cow				
Horse		1		
Apple				
Goat				11
Man				
Duck				
Learning Activity: Cutting and cooking				
Bread				
Tomato				
Cabbage				
Egg				
Corn				
Onion				
Spoon				
Fork				
Knife				
Plate				
Cheese				
Vegetable				
Learning Activity: Reading "Jovi"				
Kangaroo				
Kancil				

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> <i>(sign the vocabulary)</i>	<i>Reception</i> <i>(show action)</i>	<i>Imitation</i> <i>(sign the vocabulary)</i>	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green				
Purple				
Learning Activity: Matching picture to picture				
Burger		111		
Tomato		11		
Soup		11		
Jelly		11		
Learning Activity: Animal Farm				
Chicken				
Sheep				
Car				
Cow				
Horse				
Apple				
Goat				
Man				
Duck				
Learning Activity: Cutting and cooking				
Bread		11		
Tomato				1
Cabbage				
Egg		1		1
Corn		1		
Onion				1
Spoon		1		
Fork				
Knife				1
Plate				
Cheese			1	1
Vegetable		1		
Learning Activity: Reading "Jovi"				
Kangaroo				
Kancil				

Targeted Sign Vocabulary	Frequency of Responses			
	<i>Expression</i> <i>(sign the vocabulary)</i>	<i>Reception</i> <i>(show action)</i>	<i>Imitation</i> <i>(sign the vocabulary)</i>	<i>Wrong response</i>
Learning Activity: Putting round chips into board columns				
Green				
Purple				
Learning Activity: Matching picture to picture				
Burger	1	1	11	1
Tomato	11		1	
Soup		1		1
Jelly	1	1	1	
Learning Activity: Animal Farm				
Chicken			1	
Sheep				
Car		1		
Cow	1		11	
Horse			1	
Apple				
Goat	1		111	1
Man		1		
Duck	1		1	
Learning Activity: Cutting and cooking				
Bread				
Tomato				
Cabbage				
Egg				
Corn				
Onion				
Spoon				
Fork				
Knife				
Plate				
Cheese				
Vegetable				
Learning Activity: Reading "Jovi"				
Kangaroo				
Kancil				