CHAPTER III

PRESENTATION AND ANALYSIS OF THE DATA

The discussion in this chapter focuses on data presentation and analysis of the respondents. The data is the transcribed speech of the three mentally retarded students of SLB Cacat Mental Aditama Bagian C Wisma Permai Surabaya. The data is classified based on their place of articulation and analyzed based on three main types of phonological alteration: deletion, metathesis and insertion, and the development of those alterations.

3.1. RESPONDENT A

As stated previously in chapter I, respondent A is Dwi Marenza H. She is a female mildly retarded student with IQ level of 86. When this research was done, she was eleven years old. She can speak, but she alters some phonemes when she speaks. She often deletes and replaces sounds or combines both alterations.

3.1.1. Deletion of respondent A

When respondent A speaks, she sometimes deletes sounds in initial and medial position, but retains sounds in final position.

3.1.1.1. One sound consonant deletion in initial position

Table A.1

No.	Word	Pronounced
1.	tipe	/ ipə /
2.	siap	/ iyap /
3.	buku	/ uku /
4.	yakin	/ akin /

From the table above, we can see that respondent A deletes:

/ t / in *tipe* becomes / ipə /

/ s / in *siap* becomes / iyap /

/ b / in *buku* becomes / uku /

/ y / in *yakin* becomes / akin /

Respondent A deletes *apikodental* / t /, *lamino alveolar* / s /, *bilabial* / b /, and *mediopalatal* / y /, in initial position.

3.1.1.2. One sound consonant deletion in medial position

Table A.2

No	Word	Pronounced
1.	engsel	/ ɛsɛl /
2.	bunga	/ bua /
3.	waktu	/ watu /
4.	tahu	/ tau /

From the table above we can see that respondent A deletes :

/ ŋ / in *engsel* becomes / ɛsɛl /

/ ŋ / in *bunga* becomes / bua /

/ k / in *waktu* becames / watu /

/ h / in *tahu* becomes / tau /

Respondent A deletes *dorsovelar* / k / and / ŋ / and *laringal* / h / in medial position.

3.1.2. Metathesis of respondent A

When respondent A speaks, she replaces some sounds with other sounds either in initial, medial or final position.

3.1.2.1. One sound consonant metathesis in initial position.

Table A.3

No	Word	Pronounced
1.	roti	/ lɔti /
2.	vas	/ pas /
3.	zat	/ jat /

From the table above, we can see that respondent A replaces:

/ r / with / l / in *roti* becomes /lɔti /

/ v / with / p / in *vas* becomes / pas /

/ z / with / j / in *zat* becomes / jat /

Respondent A replaces *apiko alveolar* / r / with *apiko alveolar* / l /, *labiodental* / v / with *bilabial* / p / and *lamino alveolar* / z / with *medio palatal* / j /.

3.1.2.2. One sound vowel metathesis in initial position

Table A.4

No.	Word	Pronounced
1.	enak	/ inak /

From the table above, we can see that respondent A replaces :

/ e / with /i / in *enak* becomes / inak /

Respondent A replaces *front middle upper vowel* / e / with *front high upper vowel* / i / in initial position.

3.1.2.3. One sound consonant metathesis in medial position

Table A.5

No.	Word	Pronounced
1.	lari	/ lali /
2.	urus	/ ulus /
3.	udara	/ udala /
4.	kafan	/ kapan /
5.	azas	/ ajas /
6.	asyik	/ asik /

From the table above we can see that respondent A replaces :

/ r / with / l / in *lari* becomes / lali /

/ r / with / l / in *urus* becomes / ulus /

/ r / with / l / in *udara* becomes / udala /

/ f / with / p / in *kafan* becomes / kapan /

/ z / with / j / in *azas* becomes / ajas /

/ ʃ / with / s / in *asyik* becomes / asik /

Respondent A replaces *apiko alveolar* / r / with *apiko alveolar* / l /, *labiodental* / f / with *bilabial* / p /, *lamino alveolar* / z / with *medio palatal* / j / and *lamino palatal* / ʃ / with *lamino alveolar* / s / in medial position.

3.1.2.4. One sound consonant metathesis in final position

Table A.6

No.	Word	Pronounced
1.	diam	/ dian /
2.	pinggir	/ piŋgil /
3.	iseng	/ isən /
4.	otot	/ɔtɔk /

From the table above we can see that respondent A replaces :

/ m / with / n / in *diam* becomes / dian /

/ r / with / l / in *pinggir* becomes / piŋgil /

/ ŋ / with / n / in *iseng* becomes / isən /

/ t / with / k / in *otot* becomes /ɔtɔk /

Respondent A replaces *bilabial* / m / with *apiko alveolar* / n /, *apiko alveolar* / r / with *apiko alveolar* / l /, *dorsovelar* / ŋ / with *apiko alveolar* / n /, *apiko dental* / t / with *dorsovelar* / k / in final position.

3.1.2.5. Diphthong metathesis in medial position

Table A.7

No.	Word	Pronounced
1.	saudara	/ɔdala /

From the table above we can see that respondent A replaces:

/ au / with / / in *saudara* becomes / dala /

Respondent A replaces *up closed backward diphthong* / au / with *back middle lower monophthong* /ɔ/ in medial position.

3.1.2.6. Diphthong metathesis in final position.

Table A.8

No.	Word	Pronounced
1.	nilai	/ nilɛ /
2.	amboi	/ ambɔ/
3.	lampau	/ ampɔ/

From the table above we can see that respondent A replaces

/ ai / with / ɛ / in *nilai* becomes / nilɛ /

/ oi / with /ɔ/ in *amboi* becomes / ambɔ/

/ au / with /ɔ/ in *lampau* becomes / ampɔ/

Respondent A replaces *up closed forward diphthong* / ai / with *front middle lower monophthong* / ɛ /, *back close forward dipthong* / oi / with *back middle lower monophthong* /ɔ/, *up closed backward diphthong* / au / with *back lower monophthong* /ɔ/ in final position.

3.1.2.7. More than sound metathesis

Table A.9

No.	Word	Pronounced
1.	syarat	/ salat /
2.	khawatir	/ hawatil /
3.	tarikh	/ talik /

From the table above, we can see that respondent A replaces more than one sound within a word as follows:

- replaces / ʃ / with / s / and / r / with / l / in *syarat* becomes /salat/
- replaces / kh / with / h / and / r / with / l / in *khawatir* becomes / hawatil /
- replaces / r / with / l / and / kh / with / k / in *tarikh* becomes /talik/

3.1.3. Combination of deletion and metathesis

When respondent A speaks, she sometimes combines deletion and metathesis in producing speech.

Table A.10

No.	Word	Pronounced
1.	Saudara	/ɔdala /
2.	Lampau	/ ampɔ/
3.	Fiktif	/ fifik /
4.	Akhir	/ ail /
5.	tarikh	/ talik /

From the table above, we can see that respondent A deletes and replaces sounds in one time:

- deletes / s /, replaces / au / with /ɔ/ and replaces / r / with / l / in *saudara* becomes / dala /
- deletes / l / and replaces / au / with /ɔ/ in *lampau* becomes / ampɔ/
- deletes / k /, replaces / k / and / t / with / f / and replaces / f / with / k / in *fiktif* becomes / fifik /
- deletes / kh / and replaces / r / with / l / in *akhir* becomes / ail /

3.1.4. Analysis of respondent A

From the data described above, we can see that deletion of respondent A only occurs in initial and medial position. There is no case of deletion in final position. Respondent A frequently deletes *lamino alveolar* / s / in initial position as in *siap* that becomes / iyap /. The more frequent deletion occurs when respondent A tries to pronounce *dorsovelar* / k / and / g /. Instead of producing / k / and / g / sounds, in which she has to raise back of the tongue to the soft palate, she deletes them in initial and medial position. For instance, respondent A deletes / k / in *waktu* becomes / watu / and deletes / t / in *tipe* becomes / ipə /. All deletion produced by respondent A when she speaks only occurs towards consonant sounds. There is no evidence of vowel deletion in any possible position. She is able to pronounce vowel sounds quite well. Moreover, all deletion is one sound deletion, there is no multiple deletion in which respondent A deletes more than one sound in producing one word. Other deletion made by respondent A is individual. For instance, she deletes *bilabial* / b / in *buku* becomes / uku / and deletes *medio palatal* /y/ in yakin becomes /akin/.

The data also show metathesis made by respondent A. A general line can be drawn from the data that her metathesis occurs in any possible position; initial, medial and final. She always replaces *apiko alveolar* /r/ with another *apiko alveolar* sound / l / in any position. *Apiko alveolar* sounds are produced by raising the tip of the tongue to the alveolar ridge. Both sounds / r / and / l /, are produced in similarly the same way, but respondent A prefers to replace / r / with / l /. For instance, she replaces / r / with / l / in *roti* becomes / lɔti / and in *lari* becomes / lali /.

She also often replaces *labiodental* / f / and / v / sounds with bilabial / p / in initial and medial positions. Instead of moving lower lip and upper front teeth to produce *labiodental* sounds, she prefers to replace them with bilabial / p / which can be produced more easily, only moving the tongue and lips together. For example, she replaces / f / with / p / in producing *kafan* so that it becomes / kapan / and replaces /v/ with / p / in producing *vas* so that it becomes / pas /.

Another constant metathesis is replacing *lamino palatal* / ʃ / with *lamino alveolar* / s / in initial, medial and final positions. *Lamino palatal* sound is more difficult to pronounce because she has to raise blade of the tongue to the alveolar ridge. Therefore, she replaces it with / s /, which comes to be almost similar but produced more easily-by using tip of the tongue. For example, respondent A pronounces *asyik* becomes / asik / and *syarat* becomes / salat /.

Respondent A also replaces *lamino alveolar* / z / with *medio palatal* / j / in initial position like in *zat* becomes /jat/. Replacement is also happened in / kh / which is exchanged into *dorsovelar* / k / like in *tarikh* which becomes / talik /.

Interestingly, most of respondent A's metathesis only involves consonant sounds. Only one vowel exchange found during the research. Respondent A replaces front middle upper vowel / e / with front high upper vowel / i / in initial position. She exchanges / e / with / i / in pronouncing *enak* which becomes / inak /. No other vowel metathesis was found.

Yet, one interesting point which can be viewed is that even though respondent A almost never replaces vowel sounds, she can not pronounce diphthong at all she always replaces diphthongs with monophthongs in medial and final positions. One constant diphthong metathesis is / au / sound. Respondent A always replaces *up closed backward diphthong* / au / with back middle lower monophthong /ɔ/. For instance, she pronounces the word *lampau* becomes / ampɔ /. All description above involves only one sound metathesis. In fact, in some cases, informant A replaces more than one sound in pronouncing certain words. For example, in pronouncing the word *syarat*, she replaces / ʃ / with / s / and / r / with / l / so that it becomes / salat /. So, in this case, respondent A replaces two sounds in one time.

Even though there are many alterations concerning deletion and metathesis of phonemes, there is no case of insertion was found in respondent A's speech. She never inserts or adds new phonemes, either in initial, medial or final position, while she is speaking. In some cases, she may delete or replace phonemes in producing certain words at the same time. For example, in producing the word *saudara*, she pronounces it as /ɔdala /. She deletes / s /, replaces / au / with /ɔ/ and replaces / r / with / l /. Yet, there is no case of insertion-deletion or

insertion-metathesis alterations was found in her speech since respondent A never adds new phonemes. In general, respondent A can speak adequately well. She may alter some phonemes which come to be constant alteration, like replacing diphthong / au / with monophthong / ɔ/ or replacing / r / with / l /. Yet, her alterations are mostly single phonemes. Multiple-phonemes alteration was found only in few cases.

3.2. RESPONDENT B

As stated previously in chapter II, respondent B is Andi Sasongko Kurniawan. He is a male mildly retarded student with IQ level of 65. When this research was done, he was nine years old. He can speak, but he alters some phonemes when he speaks. He often deletes and replaces sounds or combines both alterations.

3.2.1. Deletion of respondent B

When respondent B speaks, he sometimes deletes sounds in initial and medial position, but remains sounds in final position.

3.2.1.1. One sound consonant deletion in initial position

Table B.1

No	Word	Pronounced
1.	kita	/ ita /
2.	sate	/ ate /
3.	papa	/ apa /
4.	tipe	/ ipə /
5.	toko	/ oko /
6.	siap	/ iyap /
7.	buku	/ uku /
8.	lima	/ ima /
9.	siul	/ iyul /
10.	yakin	/ akin /
11.	saya	/ aya /

12.	gigi	/ igi /
13.	gabung	/ abuŋ /
14.	timah	/ imah /

From the table above, we can see that respondent B deletes :

/ k / in *kita* becomes / ita /

/ p / in *papa* becomes / apa /

/ t / in *tipe, toko,* and *timah* becomes / ipə /, / oko /, and /imah /

/ s / in *sate, siap, siul,* and *saya* becomes / iyap /,/ iyul /, and /aya/

/ b / in *buku* becomes / uku /

/ l / in *lima* becomes / ima /

/ y / in *yakin* becomes / akin /

/ g / in *gigi* and *gabung* becomes / igi /, and / abuŋ /

Respondent A deletes *bilabial* / p / and / b /; *dorsovelar* / k / and / g /, *apikodental* / t / and / d / ; *lamino alveolas* / s /, *apiko alveolar* / l / and *medio palatal* / y / in initial position

3.2.1.2. One sound consonant deletion in medial position

Table B.2

No	Word	Pronounced
1.	engsel	/ ɛsɛl /

From the table above, we can see that respondent B deletes :

/ g / in engsel becomes / ɛsɛl /

Respondent B deletes *dorsovelar* /g / in medial position

3.2.1.3. More than one sound deletion

Table B.3

No	Word	Pronounced
1.	waktu	/ atu /
2.	khawatir	/ awati /

From the table above, we can see that respondent B deletes more than one sound with in one word:

- deletes / w / and / k / in *waktu* becomes / atu /

- deletes / kh / and / r / in *khawatir* becomes / awati /

3.2.2. Metathesis of respondent B

When respondent B speaks, he replaces some sounds with other sounds either in initial, medial or final position.

3.2.2.1. One sound consonant metathesis in initial position

Table B.4

No	Word	Pronounced
1.	roti	/ lɔti /
2.	vas	/ pas /
3.	jiwa	/ diwa /
4.	zat	/ jat /

From the table above, we can see that respondent B replaces:

/ r / with / l / in *roti* becomes / lɔti /

/ v / with / p / in *vas* becomes / pas /

/ j / with / d / in *jiwa* becomes / diwa /

/ z / with / j / in *zat* becomes / jat /

Respondent B replaces *apikoalveolar* / r / with *apikoalveolar* / l /, *labiodental* / v / with *bilabial* / p /; *medio palatal* / j / with *apikodental* / d / and *lamino alveolar* / z / with *medio palatal* / j / in initial position.

3.2.2.2. One sound consonant metathesis in medial position

Table B.5

No	Word	Pronounced
1.	lari	/ lali /
2.	urus	/ ulus /
3.	asyik	/ asik /

From the table above, we can see that respondent B replaces:

/ r / with / l / in *lari* becomes / lali /

/ r / with / l / in *urus* becomes / ulus /

/ ʃ / with / s / in *asyik* becomes / asik /

Respondent B replaces *apikoalveolar* / r / with *apiko alveolar* / l /, and *lamino palatal* / ʃ / with *lamino alveolar* / s / in medial position.

3.2.2.3. One sound consonant metathesis in final position

Table B.6

No	Word	Pronounced
1.	mulut	/ muluk /

From the table above, we can see that respondent B replaces:

/ t / with / k / in mulut becomes / muluk /

Respondent B replaces *apikodental* / t / with *dorsovelar* / k / in final position.

3.2.2.4. Diphthong metathesis in medial position

Table B.7

No	Word	Pronounced
1.	saudara	/ɔdala /

From the table above, we can see that respondent B replaces: diphthong / au /with / ɔ / in *saudara* becomes /ɔdala /

Informant B replaces up closed *backward diphthong* /. au / with *back middle lower monophthong* / ɔ/ in medial position.

3.2.2.5. Diphthong metathesis in final position

Table B.8

No	Word	Pronounced
1.	nilai	/ nilɛ /
2.	lampau	/ ampɔ/

From the table above, we can see that respondent B replaces:

/ ai / with / ɛ / in *nilai* becomes / nilɛ /

/ au / with / ɔ/ in *lampau* becomes / ampɔ/

Respondent B replaces *up closed forward* / ai / with *front middle monophthong* / ɛ / and replaces *up closed backward diphthong* / au / with *back middle lower monophthong* / ɔ/ in final position.

3.2.2.6. More than one sound metathesis

Table B.9

No	Word	Pronounced
1.	iseng	/ ∂s∂n /
2.	akhir	/ ahil /
3.	syarat	/ salat /

From the table above, we can see that respondent B replaces more than one sound with in one word:

- replaces / i / with / a / and replaces / ŋ / with / n / in *iseng* becomes / ∂s∂n /

- replaces / kh / with / h / and replaces / r / with / l / in *akhir* becomes / ahil /

- replaces / ʃ / with / s / and replaces / r / with / l / in *syarat* becomes / salat /.

3.2.3. Insertion of respondent B

When respondent B speaks, he rarely inserts sound when producing speak. In fact, the case of insertion only occurs once in initial position.

Table B.10.

No	Word	Pronounced
1.	otot	/ pɔtɔt /

From the table above, we can see that respondent B inserts:

/ p / in initial position of *otot* becomes / pɔtɔt /

Respondent B inserts *bilabial* / p / in initial position.

3.2.4. Combination of deletion and metathesis

When respondent B speaks, he sometimes deletion and metathesis in producing utterances.

Table B.11.

No	Word	Pronounced
1.	Pinggir	/ iŋgil /
2.	saudara	/ dala /
3.	lampau	/ ampɔ/
4.	fiktif	/ ifif /
5.	kafan	/ afaf /
6.	gizi	/ isi /
7.	bunga	/ una /
8.	tarikh	/ aik /

From the table above, we can see that respondent B deletes and replaces sound in one time:

- deletes / p / and replaces / r / with / l / in *pinggir* becomes /iŋgil/
- deletes / s / replaces / au / with /ɔ/ and replaces / r / with / l / in *saudara* becomes /ɔdala /
- deletes / l / and replaces / au / with /ɔ/ in *lampau* becomes /ampɔ/.
- deletes / f / and replaces / k / and / t / with / f / in *fiktif* becomes /ifif/
- deletes / k / and replaces / n / with / f / in *kafan* becomes / afaf /
- deletes / g / and replaces / z / with / s / in *gizi* becomes / isi /
- deletes / b / and replaces / ŋ / with / n / in *bunga* becomes /buna/
- deletes / t / and / r / and replaces / kh / with / k / in *tarikh* becomes /aik/

3.2.5. Analysis of respondent B

From the data described above, we can see that deletion of respondent B only occurs in initial and medial position. Respondent B mostly deletes phonemes in initial position. Yet, there in no case was found concerning deletion in final position. In initial position, respondent B often deletes *apikodental* / t / as in pronouncing the word *toko, tipe* and *timah* which becomes / oko /, / imah /, and /imah/. He also frequently deletes *apiko alveolar* / l / as in *lima* that becomes /ima/

Another frequent deletion is in producing *dorsovelar* sound, / k /,/ g /, and /ŋ/. Dorsovelar is found to be quite difficult sound to produce because a speaker must raise back of the tongue to the soft palate. As in the process of children language acquisition, *dorsovelar* sounds are usually acquired latter after other sounds like *bilabial* / p /, / b /, and / m /. Therefore, instead of producing *dorsovelar*, respondent B prefers to delete them, as can be seen in *kita* which become / ita /, *gigi* which becomes / igi / and engsel which becomes / ɛsɛl /.

Interestingly, respondent B does not only delete quite difficult sounds like *dorsovelar*, but the also deletes easier ones like *bilabial* / p / and / b /. Respondent B deletes / p / and / b / in initial position. For instance, respondent B deletes / p / in *papa* becomes / apa / and deletes / b / in buku becomes / uku /. Respondent B also frequently deletes *lamino alveolar* / s / as in *sate* and *saya* that are altered in to / ate / and /aya/.

All deletion of respondent B only occurs toward consonant sounds. There is no evidence of vowel deletion. For instance, he deletes *labiodental* / w / and *dorsovelar* / k / in *waktu* so that it becomes / atu /. Other deletion made by respondent B is very individual. He deletes, for instance, *medio palatal* / y / in *yakin* so that it becomes / akin /.

The data also show metathesis made by respondent B. A general like can be drawn that metathesis of respondent B's speech happens in all possible position: initial, medial and final. He always replaces *apiko alveolar* / r / with another *apiko alveolar* / l / in any possible positions. This change seems has been realized as in children language acquisition that generally, children will acquire / l

/ first before / r / or using / l / to replace / r /. This exchange can be seen when respondent B produces the word *roti*, he turns this to be / lɔti / and in *lari* that becomes / lali /.

Another constant metathesis is replacing *lamino palatal* / ʃ / with *lamino alveolar* / s / in initial, medial or final position. Instead of raising blade of the tongue to the back of the alveolar ridge to produce / ʃ /, he prefers to replace it with / s / as in the word *asyik* that becomes / asik /.

Respondent B also replaces *labiodental* / v / with bilabial / p / as in producing the word *vas* that becomes / pas /. Another replacement is exchanging / kh / into / h / in medial and final position as sound in *akhir* becomes / ahil / and in *tarikh* which becomes / aik /. Respondent B also exchanges *lamino alveolar* / z / with *medio palatal* /j/ in initial position, but / z / will be pronounced as *lamino alveolar* / s / in medial position. For example, / z / in initial position like in *zat* will be / jat / and / z / in medial position like in *gizi* will be / isi /.

After all, almost all respondent B's metathesis is concerned with consonant exchanges. He happened to exchange vowel only once, in a multiple metathesis respondent B exchanges *front high upper vowel* / i / with *central middle vowel* / ə / in producing the word *iseng*, which comes to be / əsəŋ /. No other vowel metathesis was found.

Interestingly, even though vowel metathesis was discovered only once in respondent B's speech, he is not able to pronounce any diphthong sounds. He always exchanges diphthongs with monophthongs. One constant exchange in this case is replacing *up closed backward diphthong* / au / becoming *back middle*

lower monophthong / ɔ / in medial and final position as in the word *lampau* that becomes /ampɔ/.

All description above involves only one sound metathesis. In fact, in some cases, respondent B may replace more than sound in producing certain words. In pronouncing the word *akhir*, for instance, respondent B replaces / kh / with / h / and replaces / r / with / l / so that it becomes / ahil /. Also in the word *syarat*, respondent B exchanges / ʃ / with / s / and exchanges / r / with / l / becoming / salat /. So, in those cases, respondent B replaces two sounds in one time. This phenomenon is also called multiple metathesis.

Unlike respondent A in which no case was found concerning insertion, an addition of phonemes occurred once in respondent B. In producing the word *otot*, he insert a *bilabial* / p / in initial position so that it becomes / p t t /. Since this insertion only occurred once and it involves consonant, therefore, no other insertion in any case was found.

In fact, respondent B does not only delete or replace sounds, but he also combines both alterations. In certain cases, respondent B may delete and replace sounds in one time. For example, in producing the word *bunga*, he turns this to be /una /. It means that he deletes / b / and replaces / ŋ / with / n /. Another example is the word tarikh that becomes / aik /, it means that respondent B deletes / t / and / r / and replaces / kh / with / k /. Yet, the only alteration combination occurred is deletion metathesis. No evidence was found regarding alterations of deletion - insertion or insertion - metathesis combination.

In general, we may say that respondent B can speak, but he alters many phonemes very often. It may be related to this IQ level, which comes only 65, that enables him to develop well and to acquire language well.

3.3. RESPONDENT C

As stated previously in chapter II, respondent C is Achmad Ainur Rofiq. He is a male mildly retarded student with IQ level of 59. When this research was done, he was nine years old. He can speak, but most of this speech is altered. He often deletes and replaces sounds or combines both alterations.

3.3.1. Deletion of respondent C

When respondent C speaks, he often deletes sound in all positions : initial, medial and final position

3.3.1.1. One sound consonant deletion in initial position

Table C.1

No	Word	Pronounced
1.	Kita	/ ita /
2.	Sate	/ ate /
3.	Tipe	/ ipə /
4.	Roti	/ lɔti /
5.	mulut	/ ulut /
6.	siap	/ iyap /
7.	buku	/ uku /
8.	lima	/ ima /
9.	diam	/ iyam /
10	siul	/ iyul /
11	saya	/ aya /
12.	gigi	/ igi /
13.	bunga	/ uŋa /

14	timah	/ imah /

From the table above, we can see respondent C deletes:

/ k / in *kita* becomes / ita /

/ t / in *tipe* and *timah* becomes / ipə / and / imah /

/ r / in *roti* becomes / lɔti /

/ m / in *mulut* becomes / ulut /

/ s / in *sate, siap, siul* and *saya* becomes / ate /, / iyap /, / iyul / and / aya /

/ b / in *buku* and *bunga* becomes /uku/ and / uŋa /

/ l / in *lima* becomes / ima /

/ d / in *diam* becomes / iyam /

/ g / in *gigi* becomes / igi /

Respondent C deletes *bilabial* / p / and / b /, *apikodental* / t / and / d /; *apiko alveolar* / r / and / l / *lamino alveolar* / s / and *dorsovelar* / g / in initial position.

3.3.1.2. One sound consonant deletion in medial position

Table C.2

No	Word	Pronounced
1.	engsel	/ ɛsɛl /
2.	waktu	/ watu /
3.	tahu	/ tau /

From the table above, we can see that respondent C deletes:

/ ŋ / in *engsel* becomes / ɛsɛl /

/ k / in *waktu* becomes / watu /

/ h / in *tahu* becomes / tau /

Respondent C deletes *dorsovelar* / k / and / g / and *laringal* / h / in medial position.

3.3.1.3. One sound consonant deletion in final position

Table C.3

No	Word	Pronounced
1.	emas	/ ∂ma /
2.	azas	/ aza /

From the table above, we can see that respondent C delete:

/ s / in *emas* and *azas* becomes / ∂ma / and / aza /

Respondent C deletes *lamino alveolar* / s / in final position.

3.3.1.4. One sound vowel deletion in initial position

Table C.4

No	Word	Pronounced
1.	esa	/ sa /

From the table above, we can see that respondent C deletes:

/ e / in esa becomes / sa /

Respondent C deletes *front middle upper vowel* / e / in initial position.

3.3.1.5. More than one sound deletion

Table C.5

No	Word	Pronounced
1.	Iseng	/ s∂ /
2.	Bulan	/ ula /
3.	Fiktif	/ fiti /
4.	Gabung	/ abu /

5.	Khawatir	/ ti /
6.	Akhir	/ ai /

From the table above, we can see that respondent C deletes more than one sound within one word;

- deletes / i / and / ŋ / in *iseng* becomes / sə /
- deletes / b / and / n / in *bulan* becomes / ula /
- deletes / k / and / f / in *fiktif* becomes / fiti /
- deletes / g / and / ŋ / in *gabung* becomes / abu /
- deletes / kh /, / a /, / w / and / r / in *khawatir* becomes / ti /
- deletes / kh / and / r / in *akhir* becomes / ai /

3.3.2. Metathesis of respondent C

When respondent C speaks, he often replaces sounds in all positions: initial, medial and final position.

3.3.2.1. One sound consonant metathesis in initial position

Table C.6

No	Word	Pronounced
1.	Jiwa	/ diwa /
2.	Zat	/ jat /

From the table above, we can see that respondent C replaces :

/ j / with / d / in *jiwa* becomes / diwa /

/ z / with / j / in *zat* becomes / jat /

Respondent C replaces *medio palatal* / j / with *apikodental* / d / and replaces *lamino alveolar* / z / with *medio palatal* / j / in initial position.

3.3.2.2. One sound consonant metathesis in medial position

Table C.7

No	Word	Pronounced
1.	lari	/ lali /
2.	udara	/ udala /

From the table above, we can see that respondent C replaces:

/ r / with / l / in *lari* becomes / lali /

/ r / with / l / in *udara* becomes / udala /

Respondent C replaces *apiko alveolar* / r / with *apiko alveolar* / l / in medial position.

3.3.2.3. Diphthong metathesis in medial position

Table C.8

No	Word	Pronounced
1.	Saudara	/ɔ dala /

From the table above, we can see that respondent C replaces:

Diphthong / au / with / ɔ / in *saudara* becomes /ɔdala /

Respondent C replaces *up closed backward diphthong* / au/ with *back middle lower monophthong* / ɔ / in medial position.

3.3.2.4. Diphthong metathesis in final position

Table C.9

No	Word	Pronounced
1.	nilai	/ nilɛ /
2.	amboi	/ ambɔ/
3.	lampau	/ ampɔ/

From the table above, we can see that respondent C replaces :

Diphthong / ai / with / / in *nilai* becomes / ɛ /

Diphthong / oi / with /ɔ/ in *amboi* becomes / ambɔ/

Diphthong / au / with /ɔ/ in *lampau* becomes / ampɔ/

Informant C replaces *up closed backward diphthong* / ai / with *front middle lower monophthong* / ɛ / ; replaces *back closed forward diphthong* / oi / with *back middle lower monophthong* / ɔ/; replaces *up closed backward diphthong* / au / with *back middle lower monophthong* /ɔ/ in final position.

3.3.2.5. More than one sound metathesis

Table C.10

No	Word	Pronounced
1.	saudara	/ɔdala /
2.	tarikh	/ talik /

From the table above, we can see that respondent C replaces more than one sound within one word:

- replaces / s / with / c / ; replaces / au / with / ɔ / ; and replaces / r / with / l / in *saudara* becomes / cɔdala /
- replaces / r / with / l / and replaces / kh / with / k / in *tarikh* becomes / talik /.

3.3.3. Combination of deletion and metathesis

When respondent C speaks, he often combines deletion and metathesis in producing speech.

Table C.11

No	Word	Pronounced
1.	pinggir	/ ilil /
2.	toko	/ oto /
3.	urus	/ ulu /
4.	paku	/ atu /
5.	lampau	/ ampɔ/
6.	kafan	/ sa /
7.	vas	/ sa /
8.	gizi	/ isi /
9.	syarat	/ ala /
10.	asyik	/ sik /
11.	hujan	/ da /
12.	yakin	/ ti /

From the table above, we can see that respondent C deletes and replaces sounds in one time:

- deletes / p /, replaces / ŋ / and / g / with / l / and replaces / r / with / l / in *pinggir* becomes / ilil /
- deletes / t / and replaces / k / with / t / in *toko* becomes / oto /
- deletes / r / with / l / and delete / s / in *urus* becomes / ulu /
- deletes / p / and replaces / k / with / t / in *paku* becomes / atu /
- deletes / l / and replaces / au / and / with / ɔ/ in *lampau* becomes

/ amp /

- deletes / k /, / a /, and / n / and replaces / f / with / s / in *kafan* becomes / sa /
- replaces / v / with / s / and deletes / s / in *vas* becomes / sa /
- deletes / g / and replaces / z / with / s / in *gizi* becomes / isi /
- deletes / l / and / t / and replaces / r / with / l / in *syarat* becomes / ala /
- deletes / a / and replaces / ʃ / with / s / in *asyik* becomes / sik /
- deletes / h /, / u / and / n / ; and replaces / j / with / d / in *hujan* becomes / da /
- deletes / y /, / a / and replaces / k / with / t / in *yakin* becomes / ti /

3.3.4. Analysis of respondent C

From the data described above, we can see that deletion of respondent C occurs in all possible positions; initial, medial and final. One constant deletion is concerned with *dorsovelar* sound / k /, / g / and / ŋ /. Omission of those sounds was found in all positions. For example, in the word *kita*, respondent C deletes / k / so that it becomes / ita /. In the word gigi, he turns this to be / igi / and in the word *engsel*, it is turned to be / ɛsɛl /. Another deletion is concerned with *apikodental* / t / in initial position. He frequently deletes it as can be seen in the word *tipe* and *timah* which become / ipe / and / imah /. Respondent C also often deletes *lamino alveolar* / s / in initial and final position in initial position, / s / is deleted as in *sate* and *saya* that become / ate / and / aya /. In final position, / s / is omitted as in *azas* which become / aza /.

Interestingly, respondent C also often deletes *bilabial* sounds / p /, / b / and / m / in initial position, like in *buku* that becomes /uku/ and in *mulut* which becomes

/ulut/. As other respondents in this study, respondent C deletes vowel sounds very rarely. Only one vowel deletion was found during the research. Respondent C deletes *front middle upper vowel* /e/ in initial position in the word *esa* that becomes / sa /. Yet, in producing certain words, respondent C may delete more than one phoneme, like in the *bulan*, he deletes / b / and / n / so that it becomes / ula /. Other example is in the *khawatir*, he deletes / kh /, / a /, / w / and / i / so that it becomes only / ti /. Other deletion of respondent C is very individual as deleting *apiko alveolar* / l / in *lima* so that it becomes /ima/ and deleting *apikodental* /d/ in *diam* so that becomes / iyam /.

The data also show metathesis produced by respondent C. One constant metathesis is concerned with the replacement of *apiko alveolar* / r / with another *apiko alveolar* / l / in any possible positions: initial, medial or final. For instance in the word *lari*, he exchanges this into /lali/ and in the word *udara* that becomes /udala/.

Respondent C also always replaces *lamino palatal* / ʃ / with *lamino alveolar* / s / and replaces / kh / with / k /. Another interesting metathesis involves *lamino alveolar* / z /. In initial position, / z / is replaced with *medio palatal* / j / as in the word *zat* which becomes / jat /. In medial position, / z / is replaced with *lamino alveolar* / s / as in the word *gizi* that becomes / isi /. All of the respondent C's metathesis is dealing with consonant sounds, none could be found regarding vowel metathesis.

Yet, even though respondent C is able to pronounce vowel sounds adequately well, he can not pronounce any diphthong at all. One constant diphthong metathesis is replacing *up closed backward diphthong* /au/ with *back middle lower monophthong* /ɔ/ in any possible position like in the word *lampau* which becomes / ampɔ/. In some cases, respondent C may replace more than one sound in producing one word. For instance, he replaces / s / with / c /; replaces / au / with / / and replaces / r / with / l /

in *saudara* so that it becomes / cɔdala /. Other metathesis is individual and it is very difficult to draw a general conclusion on that.

Even though there are so many alterations concerning deletion and metathesis of phonemes, none could be found considering insertion of phonemes. Respondent C does not add any new phoneme to any possible positions in producing any words. Yet, in some cases, respondent C does not only delete or replace phonemes, but also combines both alterations. For example, in producing the word *urus*, he replaces / r / with / l / and deletes / s / so that is becomes / ulu /. Many alternations were found concerning this combination. Meanwhile, other alternation combinations, deletion – insertion and insertion- metathesis, were not found during the research.

In general, we may say that respondent C's speech disorder is quite profound. He alters many phonemes in various types very frequently. It is difficult to draw a general conclusion of his speech disorder because it is very individual. It may be assumed that his low IQ score, 59, affects his development and his language acquisition quite profoundly.

3.4. INTERPRETATION OF THE DATA

Phonological alterations that are found among the three mentally retarded students at SLB Cacat Mental Aditama Bagian C Wisma Permai Surabaya are very various. Some types of phonological alterations may occur consistently among the three informants and some may not. Their speech shows different language development. It may be affected by their different IQ scores. It has been described preciously that IQ level for children with mental retardation affects their cognitive development, including language ability. The lower the IQ score, the more profound speech disorder may be found. Respondent A who has IQ level of 86, can speak

adequately well even though she alters several phonemes when she speaks. Respondent B, who has IQ level of 65 also alters many phonemes in all position. Yet, the most profound alterations are found in respondent C, who has IQ level of 59. He alters most phonemes when he speaks.

This interpretation seemed to be supported by Stanovich (cited in Schwartz and Johnson, 1985: p. 282) that mentally retarded children are slower perceptual information processes than non-mentally retarded children. So the lower the IQ level, the slower they process the information-including in producing utterances and the bigger the possibility to have speech disorders.

CHAPTER IV

CONCLUSION AND SUGGESTION