Phonological Process in Toddlers’ Single-Word Production: An Explorative Study of Alveolar Sounds in English

Muhammad Ali Shahid 1, Ali Furqan Syed 2, Syed Kamran Ali Razi 3, Saira Sajid 4 and Ijaz Hussain 5

1Principal, The Hope College of Science & Management Sillanwali, Sargodha, Pakistan
2Lecturer, The University of Lahore, Sargodha Campus, Pakistan
3Lecturer, Government Training College for Teachers of the Deaf Gulberg, Lahore Pakistan
4Lecturer, University of Education, Joharabad Campus, Pakistan

Corresponding Author: Ali Furqan Syed, E-mail: ali_syed786@yahoo.com

ABSTRACT

The production of phonological patterns is a very complicated process especially when alveolar consonant sounds are pronounced in International Phonetic Alphabet (IPA). The toddlers ageing 2-3 years as well as the language handicaps find it more complicated to cope with this sound process. The present study on toddlers aims at investigating the alveolar consonant sounds in keeping with single word production. The Iowa Test of Consonant Perception by Jason Geller was implemented to investigate sound productions in the perspective of Substitution Process proposed by Burnthal and Rankson (2004). Non-probabilistic Sample of twenty-five toddlers was given 125 words; a five-word set to every toddler to pronounce repeating at least five times at the top of his voice the articulators at length. Data was collected by means of informants’ close observations. The comparison between the pronunciation of original words and that of produced words with their phonetic transcription provided evidence of the shift in alveolar sound patterns during the phonological process by the toddlers. The results implicated that the toddlers made good use of articulators with ease and without any special training. They simplified the complicated consonant sound patterns at their own convenience. The study will be equally beneficial for speech pathologists, linguistic scholars, and keen phonology learners.

1. Introduction

This study aimed to investigate the substitution in the alveolar consonant sounds (/s/, /z/, /t/, and /d/) by the toddlers ageing 2-3 years and how they unknowingly made it without any training. Generative Phonological Theory (1957) introduced by Noam Chomsky elaborated syntactic concepts and phonological processes in a language. He categorized the phonological processes as syllable structure processes, substitution processes, or assimilatory processes. Syllable structure process explains the modification that affect the syllable structure, substitution process explicated the exchange of phonemes and assimilation process elucidates the effect of other sounds on neighboring one. Burnthal and Rankson (2004) propounded the classification of Phonological Process as: i. Whole-word Process, ii. Substitution Process, and iii. Assimilation Process. The change in the present study was substitution process as the class of sound was affected by the change of place or manner of sound production. Odden (2005) convinces that phonological rules combine the speech sounds of a language. Phonological process is both in word level as well as phrase level. In word level, the sound of a phoneme is influenced by the other phoneme and at phrase level the change is caused by syntactic factors. Heidi Hanks (2008) claims that children find it difficult to pronounce /t/ and /d/ sounds and they substitute these sounds with /k or θ/ and /g/ or /ð/ respectively because they are unable to raise their tongue toward the right place to produce these sounds. As per Bowden (2011), lisping in toddlers as well adults are Functional Speech Disorder (SPD) which cause for them to articulate difficult pattern of consonant sounds. The cause or root of this
disorder is not known. The children make up this deficiency with the passage of time and the adults deficient in learning speech can be treated. Toddlers, with SPD, very often are unable to pronounce interdental /s/ and /z/ sounds; they change /s/ into /tʃ/ or /θ/ sound and /z/ into /dʒ/ or /ð/. He further adds that lisping does not affect the intellect and intelligibility of the lispers; their speech can easily be understood by keen listeners. According to Michael Hinck (2018), “A Lisp is a term used to portray mispronunciation of words. The most well-known type of lisping happens when a youngster makes a “th” sound when attempting to make an /s/ sound. This commonly happens when the kid pushes their tongue out when making these sounds as opposed to keeping it behind their top teeth”. There are four sorts of lips:

- A palatal lisp implies that when your youngster attempts to make an /s/ or a /z/ sound, his tongue contacts the delicate sense of taste.
- A parallel lisp implies that air goes out of one or the other side of the tongue. Kids with a sidelong stutter produce /s/ and /z/ sounds that sound “slushy.”
- A centralized lisp implies that your kid’s tongue connects with his teeth while delivering the “s” and “z” sounds.
- An interdental stutter, here and there called a frontal drawl, implies that the tongue pushes forward through the teeth, making a “th” sound rather than an “s” or “z” sound.

2. Problem Statement
The process of production of consonant sounds is very hard for the learners of English as a Second Language. It becomes even harder for the toddlers and the hardest for the patients of with language impairment. The present study on toddlers investigates the Substitution in the production of complicated alveolar consonants. Applied Phonetics helped the researcher determine how toddlers naturally simplify the complex sounds at their own convenience.

3. Importance of the Study
The study will provide precious knowledge of toddlers’ speech, especially how they produce single words with ease and simplify complex patterns of alveolar sounds into easy-going speech flow. Linguistic scholars, speech pathologists, researchers and the keen learners will find this study very beneficial.

4. Objectives of the Study
   i. To describe alveolar sounds in International Phonetic Alphabet.
   ii. To explore the shift of alveolar sounds in Toddlers’ single-word production.

5. Research Questions
   i. What are the alveolar sounds in International Phonetic Alphabet?
   ii. How do the toddlers shift alveolar sounds in the single-word production?

6. Delimitations of the Study
The study will focus on the phonological process of how toddlers produce single words single-word production with ease by reducing and shift the sounds. It will spare the research gate for other research to enhance the level of the study to investigate the phonological process regarding the language impairment in some other context.

7. Research Design
Iowa Test of Consonant Perception (ITCP) by Jason Geller (2021) was implemented to investigate sound production by the toddlers in the qualitative research design. Twenty-five cases were registered on a non-probabilistic sampling. Data was collected from five informants teaching at as tutors who had small kids at their homes. The informants’ minute and close observation made it very easy to figure out how toddlers articulate alveolar consonants (/s/, /z/, /t/ and /d/) and they manipulate the shift in sounds at ease by themselves. This manipulation of toddlers is merely based on the art of being child and not out of any phonological disorder. The observations were based on single word-production by the toddlers. Each toddler was given five-word set to produce; each word repeating at least for five times. The voice was recorded by the by particular informant. Original words and produced words with their phonemic transcription were compared to assess the shift in alveolar sounds during the phonological process by the toddlers.

8. Data Analysis
T1: Mother, Father, Glass, Jug, Rat

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Mother         | / mʌð.ə/      | Moothel        | / mʌðəl/      |
| Father         | / fɑːð.ə/     | Fathel         | / fæθəl/      |
| Glass          | / glɑːs/      | Gach           | / ɡɑːtʃ/      |
A1 was given five words to produce; each word was to produce five times in a row. The perception was that he reduced /r/ sound to /l/ and in the word father he also shortened the vowel sound /a:/ into /ʌ/. Fricative sound /s/ in glass was changed into affricate /ʃ/. Velar sound /g/ was also changed into affricate /dʒ/. In word /rat/ final consonant /t/ was missing.

T2: Cut, Plate, Chair, Table, Madam

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Cut            | /kʌt/         | Cu             | /kʌt/         |
| Plate          | /pleɪt/       | Play           | /pleɪt/       |
| Chair          | /tʃeə/        | Chay           | /tʃeə/        |
| Table          | /tɛb.l/       | Able           | /tɛb.l/       |
| Madam          | /mæ.dəm/      | Mam            | /mæm/         |

Final /t/ sound was missing in ‘cut’ and ‘plate’ and /r/ sound was missing in ‘chair’ and initial /t/ sound was not pronounced in ‘table’ and middle /d/ sound in ‘madam’ was not articulated.

T3: Cartoon, Moto Patlo, Tom and Jerry, Rudra, Donald Duck

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Cartoon        | /kɑː.tuːn/    | Catoon         | /θɑːtʊn/      |
| Moto Patlo     | /ˈməʊ.təʊ.pətləʊ/ | Moto Pato    | /ˈməʊ.təʊ.pətləʊ/ |
| Tom and Jerry  | /təm and ˈdʒe.ri/ | Thom and Thelly | /ˈθəm and ˈdʒe.ri/ |
| Rudra          | /ruːdra/      | Luthla        | /lʊðələ/      |
| Donald Duck    | /dəʊn.də.k/   | Thonal Thuck  | /ˈθənəl ˈθək/ |

Long vowel sound /u:/ was shortened to /ʊ/ in cartoon. Sound /l/ was omitted in moto patlo. in tom and jerry, alveolar sound /t/ and affricate /dʒ/ was replaced by dental sounds /θ/ and /ð/ and sound /r/ was replace by /l/ in the same word. Alveolar /d/ was changed into dental /ˈð/ in Rudra. Dental /ð/ sound was pronounced in Donald duck in place of ‘d’ and final /d/ sound in Donald was completely missing.

T4: Toffee, Biscuit, Chocolate, Donut, Ice-cream

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Toffee         | /ˈto.fɪ/      | Thofi          | /ˈθo.fi/      |
| Biscuit        | /ˈbɪ.skɪt/    | Bikit, Bichkith | /ˈbɪ.ki/, /ˈbɪtʃ.kɪθ/ |
| Chocolate      | /tʃo.klæt/    | Thoclit        | /ˈθo.k.lɪt/   |
| Donut          | /dəu.nʌt/     | Thona          | /ˈdəu.nə/     |
| Ice-cream      | /aɪsˈkriːm/   | Ish-kaleem    | /aɪʃ.ˈkaleɪm/ |

T4 changed /t/ sound into /θ/. Word ‘biscuit’ was produced in a hotchpotch /ˈbɪ.ki/ and /ˈbɪtʃ.kɪθ/. At first, last /t/ sound seem to be dropping and then /s/ was changed to affricate /tʃ/ and final /t/ sound to /θ/. /tʃ/ was manipulated by /θ/. In the donut, final /t/ sound was altogether dropped. In ice-cream /s/ was altered to a mixture of /ʃ/ and /tʃ/. At one time, it seemed to be the former and the next it was the later.

T5: Sir, Star, Little, Dairy, Teacher

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Sir            | /sɜː/         | Chir           | /ʃɪr/         |
| Star           | /staː/        | Chatal         | /tʃæθəl/      |
| Little         | /ˈlɪ.t.l/     | Lil / Litel    | /ˈlɪl/ /ˈlɪθ.l/ |
| Dairy          | /deɪ.ri/      | Dily           | /dælɪ/        |
| Teacher        | /ˈtiː.tʃə/    | Thechel        | /ˈθiː.tʃəl/   |
T5 changed /s/ sounds to in sir and star to /tʃ/. Little was a confuse word for him. At one hand intervocalic /t/ sound in little was replaced glottal spot /ʔ/ and on the second hand it was assimilated into interdental voiceless interdental sound /θ/. In teacher, /t/ and /r/ sounds were changed into /tʃ/ and /l/ respectively.

T6: Horse, Crow, Sparrow, Deer, Eraser

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Horse          | /hoːs/        | Halch          | /holtʃ/       |
| Crow           | /kraʊ/        | Clow           | /klʊ/         |
| Sparrow        | /ˈspær.aʊ/    | Chapalo        | /tʃpær.ru/    |
| Deer           | /dɪə/         | Theer          | /dɪəl/        |
| Eraser         | /ˈɛə.r.ə/     | Lajel          | /ˈre.dʒəl/    |

Horse was pronounced as ‘holch’ where /r/ is replaced with /l/ and /s/ with /tʃ/ and in crow /r/ is changed into /l/ with the reduction of double glide of vowel sound to single vowel. In Sparrow, /s/ was altered with /tʃ/ and at the end there was change of diphthong to monophthong. In deer and erase, final /r/ sound was either eliminated or changed into /l/. Voiced /s/ sound was change into /dʒ/.

T7: Car, Aree-plane, Toys, Teddy Bear, Joker

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Car            | kɑː            | Ca             | kɔ            |
| Aree-plane     | 'eaراء.плɛm  | Alo-plane      | 'ea.лə.плɛм |
| Toys           | tʒɛz          | θoɪɡɛ          | θoɪdʒ          |
| Teddy Bear     | 'te.di bea    | 'τe.θi beal    | 'θoɪdʒ          |
| Joker          | 'dʒoʊka        | Jokeɪ          | 'dʒoʊkɔ          |

In car, final /r/ was altogether dropped and in aero-plane it was changed into /l/. in toys suffix /s/ voiced was changed into /dʒ/. In teddy bear, palatal /t/ and /r/ sounds were altered to interdental /θ/ and /r/. And in joker, final /r/ sound was just audible or completely disappeared or changed into /l/.

T8: Fries, Burger, Chair, Table, Water

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Fries          | fraɪz         | Flige          | flaɪdʒ         |
| Burger         | bɹ.ɡə         | Bulgie         | bʌl.ɡɛ          |
| Chair          | tʃəa          | Chail          | tʃɛal          |
| Table          | 'teib.l       | Tabl           | 'θeɪb.l         |
| Water          | 'wə.tə        | Water          | 'wʌ.θəl         |

In fries, /r/ and voiced /s/ sounds were replaced with /l/ and voiced /dʒ/. In chair and water, final /r/ was completely inaudible. In table and water, alveolar /t/ sound was renovated into interdental /θ/ sound.

T9: Doctor, Auntie, Injection, Tablet, Syrup

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Doctor         | dɔk.ta        | Dactle         | dɔk.θaI        |
| Auntie         | ˈɑ.n.ti       | Untie          | ˈɑ.n.θI        |
| Injection      | ʃm.ˈdʒɛk.ʃn  | Injecchen      | ʃm.ˈdʒɛk.ʃn   |
| Tablet         | tæ.blɛt      | Thablet        | θæ.blɛt       |
| Syrup          | ˈst.rəp       | Chylup         | ˈʃt.rəp       |

In doctor and auntie, alveolar /t/ sound was changed into interdental /θ/ and in injection, tablet and syrup /l/, final /t/ in tablet and final /p/ in syrup were completely missing in speech production.

T10: Mountain, Part, Bat, Football, Colour

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Mountain       | 'maʊn.tn      | Montin         | 'maʊn.θn      |
In mountain, /au/ and /t/ sounds were reduced to /a/ and /θ/ respectively. In part and bat, final /t/ sound was mixture of completor disappearance or a shift into /θ/. In football, /t/ sound was change into a glottal stop /ʔ/ and in colour /r/ was change into /l/.

### T11: This, That, These, Those, There

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| This           | ðɪs          | Dish           | ðɪʃ / tʃ    |
| That           | ðæt          | Dat            | ðæt         |
| These          | ðiːz         | Theege         | ðiːdʒ     |
| Those          | ðæuəz        | Thoge          | ðʊdʒ     |
| There          | ðeə           | Thayal         | ðeəl     |

In demonstrative pronouns (this, that, these, those) and introductory there, interdental voiced sound /ð/ is very difficult to pronounce even for the elders. By T11, it was changed into alveolar /d/ sound. In this, these and those, /s/ sound was changed into affricate /dʒ/.

### T12: Banana, Peach, Orange, Grapes, Pear

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Banana         | ba.ˈnoːna    | Bana           | bo.no         |
| Peach          | piːtʃ         | Peege          | piːdʒ         |
| Orange         | ˈo.rændʒ     | Oringe         | ˈo.ɾændʒ     |
| Grapes         | greɪps        | Grapch         | greɪptʃ       |
| Pear           | pea           | Peal           | peəl          |

In banana, middle syllable was missing and peach /tʃ/ was equated with the final sound or orange and grapes and in pear final sound /r/ was missing or changed into /l/.

### T13: Dinner, Shirt, Iron, Brush, Spray

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Dinner         | ˈdɪ.ŋə        | Dinnel         | ˈdɪ.ŋəl      |
| Shirt          |ʃə.t           | Chult          | tʃəlt         |
| Iron           | ˈa.ɾæn        | Ilen           | ˈa.ɾæn        |
| Brush          | brʌʃ          | Bruch          | brʌʃ          |
| Spray          | spreɪ          | Chplay         | tʃpleɪ        |

In shirt and spray, interdental /s/ was backed to affricate /tʃ/ and in the whole set of five /r/ sound was changed into /l/.

### T14: One, Two, Three, Four, Five

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| One            | wʊn           | One            | wʊn          |
| Two            | ˈtʊː          | Tuː            | ˈθʊː         |
| Three          | ðriː           | Three          | ðliː         |
| Four           | fɔː           | Föl            | fɔː          |
| Five           | faːv           | Fi             | faː         |

One was all okay and in two and three, alveolar /t/ was changed into interdental voiceless /θ/. In four and five final sound created disturbance; /r/ was changed into /l/ and final /v/ in five was missing.
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T15: Party, Diary, Feeder, Sit, Stand

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Party          | ’pə:ti        | Palty          | ’pə:li        |
| Diary          | ’daiə ri      | Dialy          | dæli          |
| Feeder         | ’fi: də      | Feeldel        | ’fi: də       |
| Sit            | sɪt           | Chɪt           | sɪθ           |
| Stand          | stænd         | Chatand        | tʃθænd        |

In party and dairy, /r/ was replaced by /l/ and in sit and feeder /r/ and /t/ was completely disappeared. The word stand was very interesting with many shifts as interdental /s/ into affricate /tʃ/, alveolar /t/ and /d/ into interdental voiceless and voiced /θ/ and /ð/ respectively.

T16: Angry, Girl, Fire, Letter, House,

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Angry          | ’æŋ.gri       | Angry          | ’æŋ.li        |
| Fire           | ’fa: ta       | File           | ’fa: tal      |
| Letter         | ’le.tə        | Lattel         | læ.təl        |
| Girl           | gɹ: l        | Girl           | g?l           |
| House          | ’haus         | Houch          | ’hautʃ        |

In angry, fire, letter and girl, alveolar /r/ sound was changed into approximant /l/ and in girl it was mixed with glottal stop /ʔ/. In the final word ‘house’, interdental fricative /s/ was backed to affricate /tʃ/.

T17: Farmer, Giraffe Snake, Drink, Dress

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Farmer         | ’fɑ:mə        | Falmal         | ’fɑl.məl     |
| Giraffe        | dʒɪ. ɹə.f    | Gɪaläge        | dʒɪ. ɹə:f    |
| Snake          | sneɪk         | Chanake        | tʃneɪk        |
| Drink          | drɪŋk        | Dlink          | dɪŋk         |
| Dress          | dres          | Dlech          | ɬetʃ         |

In farmer, giraffe, drink and dress /r/ was sound replaced with approximant /l/. In snake and dress interdental fricative /s/ was backed to affricate /tʃ/.

T18: Red, Green, Purple, White, Brown

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Red            | red           | Led            | læd / lɛd    |
| Green          | ’ɡri:n       | Glen           | ’ɡli:n       |
| Purple         | ’pə.rə.l      | Pulpul         | pəl.ɫ         |
| Orange         | ɹ.ɹəndʒ      | Olinge         | ɹ.ɹəndʒ      |
| Colour         | ’kʌ.ɬə        | Colel          | ɬə.ɬə        |

In the whole set of five alveolar trill /r/ sound replaced with approximant /l/. In red and green alveolar voiced sound /d/ and double glided /i/ was replaced with / ə / and short vowel /i/ respectively.

T19: Night, News, Stars, Darkness, Maroon

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Night          | nɑt           | Night          | nɑtθ          |
| News           | nju: z        | Neuge          | nu:dz / nju:dz |
| Stars          | stɑ: z        | Chatalge       | tʃtə.lɑdz    |
| Darkness       | ’dɑ: k.ə.z    | Daknec         | ɹɑ: Ik.nætʃ |
| Maroon         | mæ. ɹu:n      | Mloon          | mæ. ɹu:n    |
In night final /t/ was altered with /θ/ and in news and stars final voiced /s/ was interchanged with voiced affricate /dz/. In maroon and darkness, /r/ sound was turned to /l/.

T20: Monday, Tuesday, Wednesday, Thursday, Friday

| Original Words  | Transcription | Produced words | Transcription |
|-----------------|---------------|---------------|--------------|
| Monday          | 'mʌndi        | Monday        | 'mʌnθi       |
| Tuesday         | 'tju:zdi      | Tueday        | 'tju:z.ði    |
| Wednesday       | 'wenz.dei     | Weneday       | 'wendz.ði    |
| Thursday        | 'θɜ:z.dei     | Thulchday     | 'θɜ:dz.ði / 'θɜ:tf. ði |
| Friday          | 'frai.dei     | Fliday        | 'flai. ði    |

In all the five-word set final double glide /eɪ/ and alveolar /d/ sounds were interchanged with interdental voiced /ð/ and pure short vowel /i/ correspondingly. In Tuesday, Wednesday and Thursday voiced and voiceless interdental fricative /s/ was swapped with voiced and voiceless affricate /dz/ and /tf/ respectively.

T21: Heat, Summer, Spring, Autumn, Kite

| Original Words  | Transcription | Produced words | Transcription |
|-----------------|---------------|---------------|--------------|
| Heat            | hiːt          | Heat          | hiːθ         |
| Summer          | 'sə.mə        | Chamal        | 'ʃə.məl     |
| Spring          | sprɪŋ         | Chpring       | tʃprɪŋ      |
| Autumn          | 'ɔ.təm        | Autumn        | 'ɔ.θam      |
| Kite            | kæt           | Kite          | kæθ         |

In heat, autumn and kite alveolar /t/ sound was transformed to voiceless interdental /θ/ and in summer and spring /r/ was changed to /l/.

T22: Carrot, Radish, Potato, Tomato, Lady-finger

| Original Words  | Transcription | Produced words | Transcription |
|-----------------|---------------|---------------|--------------|
| Carrot          | 'kæ.rət       | Callet        | 'kæ.ət      |
| Radish          | 'ræ.ðʃ        | Radich        | ʃæ.ðʃt      |
| Potato          | pa. tɛ.əu     | Potato        | pa. ðo.əu    |
| Tomato          | ta. mo.əu     | Tomato        | ðə. mo.əu    |
| Ginger          | 'dʒɪn.dʒə     | Gingel        | 'dʒɪn.dʒəl  |

In carrot, radish and ginger /r/ sound was converted to /l/ and in carrot, potato and tomato voiceless alveolar /t/ was fronted with voiceless interdental /θ/. In radish voiced alveolar /d/ was replaced with voiced /ð/.

T23: Pear, Coconut, Pomegranate, Water-melon, Straw-berry

| Original Words  | Transcription | Produced words | Transcription |
|-----------------|---------------|---------------|--------------|
| Pear            | peə peal      | Peal          | peal         |
| Coconut         | 'kɒt.kə.nte   | Coconut       | 'kɒt.kə.nθ   |
| Pomegranate     | po. mi.ɡre.nte | Pomglanit      | po. mi.ɡlæ.nte |
| Water-melon     | fru.t flu.θ   | Water-melel   | flu.θ        |
| Straw-berry     | str.ə.bri     | Chaθa-bly     | 'str.ə. bli / 'tʃtr.ə. bli |

In pear, pomegranate water-melon and straw-berry, /r/ was changed with /l/ and /t/ was interchanged with voiceless interdental /θ/.

T24: T.V, Drama, Remote, Bridal, Room, Groom

| Original Words  | Transcription | Produced words | Transcription |
|-----------------|---------------|---------------|--------------|
| Drama           | 'drə.ma      | Dlama         | ðlu.ma      |
| Remote          | ɾ. 'maut     | Lemote        | lə. 'mət    |
In the activity, all words trill /r/ sound was interchanged with approximate /l/ and drama and bridal interdental voiced /d/ sound was transformed to interdental voiced /ð/.

**T25: Chair, Table, Bread, Juice, Teacher**

| Original Words | Transcription | Produced words | Transcription |
|----------------|---------------|----------------|---------------|
| Chair          | tʃeə           | Chail          | tʃeəl         |
| Table          | ˈteɪb.l        | Table          | ˈθeɪb.l       |
| Bread          | bred           | Bled           | Bleθ          |
| Juice          | dʒuːs          | Jooch          | dʒuːtʃ        |
| Teacher        | ˈtɪ.tʃə        | Teachel        | ˈθi.tʃal      |

In the final set of words; chair, table and teacher were also treated by T25 same as the rest of the toddlers. In these words, voiceless alveolar /t/ was transformed was replaced with voiceless interdental /θ/. In chair, bread and teacher trill /r/ sound was equated with approximant /l/. In juice, final syllable with interdental voiceless /s/ was replace with voices affricate / tj/.

9. Discussion

In the present study, the perception of 125 words containing alveolar sounds was made on twenty-five understudies. Every tot was given five words to pronounce at the top of his voice. Every word was to pronounce five times in a row making good use of articulators. It was found out that the toddlers articulated alveolar sounds /s/, /z/, /t/ and /d/ with difficulty. Many substitutions in the consonant sounds as proposed by Burenthal and Rankson (2004) were adopted by the tots for their own facility. Interdental sounds /s/ and /z/ were altered by / θ/ or / δ/ and /tʃ/ or /dʒ/. Palatal /t/ and /d/ phonemes are changed into backing sounds /k/ and /ɡ/ respectively in English context, but in Pakistani context these sounds were turned manipulated as /θ/ and /δ/. Though /r/ and diphthongs were not the cynosure of the study, these sounds too were observed during the activities. The tots were unable to enunciate /r/ sound with ease, and they mixed it with /l/ sound and reduced the double glide sound into pure vowel sound.

10. Conclusion

The present study was to describe alveolar sounds in International Phonetic Alphabet and to explore the shift of alveolar sounds in Toddlers’ single-word production. Toddlers imply no hard and fast rules for modification of consonant alveolar sounds /s/, /z/, /t/ and /d/. They adopt it unconsciously at their own convenience. The process of modification varies from child to child with varying age differences. They bother little whether to make a shift from interdental consonants to affrication or velar or palatal to dental or interdents. Anyhow, the shift in consonant sound may be because of tots' habit of sucking thumb or any other disability. The act of lisping in the early childhood 2-3 years old is a common phenomenon. It should not be equated with permanent disability of children to speak. It can be and is normally covered in a more or less very short period of two or three years excessive and repeated practice of speaking. Although the children's speech is lacking in clarity and fluency, it is understandable by the keen listeners. The study has a few limitations due to the nature of research questions and feasibility of the time i.e it was delimited to twenty-five toddlers aging 2-3 years old and only 125 words. The age and the count of the toddlers could be enhanced for more generalized results; this left a research gap for other researchers who can extend the Canvas of the study. The study also suggests that speaking drills are necessary to reduce any kind of lackness in fluency and spoken disability.

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