Improving the Ability to Understand and Tell Needs by Using One-Syllable Verbs in the Digitize Linguistics Era †

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Abstract: Changes in the social environment in this digital era will cause different stimulation patterns for language development and social interaction skills in children. This study’s goal is to look into how to improve language ability in the digital age. Data were collected through observation, interviews, reviewing medical history, and conducting a specific assessment of occupational therapy, and then analyzed to identify performance and limitations related to the issues. This study found that the digital environment could bring a good impact if children are given assistance by adults when exposed to various audio-visual technologies.

Keywords: language problem; speech delay; social interaction skills; digitized world; occupational therapy; language development; verbal-linguistic milestone; human development

1. Introduction

In most cases, children pick up a new language with little to no guidance whatsoever. It occurs whether or not they are taught by their parents. However, even if they do not teach their kids anything, parents still play a crucial role in their development through conversation. No amount of silence can teach a child to speak. A child will not acquire language if it is only exposed to it in a passive setting, such as the radio or television, without any opportunity for interaction [1,2].

The articulation and lexical skills of children are always in a state of flux: motorized expression of ideas through words; the mechanics of speech [3,4]. However, language requires not only the ability to understand but also to process and create new forms of communication.

The delay in the development of language is one of the linguistic disorders that can affect children. When a child’s language development lags behind that of other children his or her age, we say that he or she has a speech delay. The speech of a child with a developmental delay is similar to that of a typically developing child of the same chronological age, but the delayed child acquires skills in the typical order, albeit at a slower rate than expected [5,6].

A number of studies have found that elementary school reading is more challenging for children with speech and language difficulties between the ages of 2.5 and 5. Children with speech and language impairments who are over the age of five and a half are at a greater risk of experiencing attention and social difficulties [7,8].

In a study of more than 900 infants between the ages of six months and two years, researchers found that those who spent more time using handheld devices were more likely to suffer expressive speech delays. Each additional 30 min spent in front of a screen was associated with a 49% higher risk of delayed expressive speech. The annual meeting of
the Pediatric Academic Societies featured presentations from pediatricians at Canada’s Hospital for Sick Children [5].

Researchers found no correlation between screen time and changes in non-verbal skills such as gesture, body language, or social interactions. However, the effect on language is intriguing enough to warrant study. The American Academy of Pediatrics recommends that parents take advantage of this crucial period by interacting directly with their infants, rather than using mobile devices or laptop computers. To begin, recent studies show that kids that young have trouble making the connection between the flat screen and the real world around them. Children’s ability to mimic on-screen actions may not always translate to success in the real world and beyond. An app’s entertainment value is irrelevant if it lacks the ability to reason symbolically and retain information [8,9].

The absence of the mother can have a negative effect on the child’s language development because of a lack of exposure to the mother’s native language [10]. According to the research by Suparmiati in 2013, working mothers are a major factor in why children in the Indonesian context start talking later than their peers [11]. The purpose of Wilson et al.’s study was to determine whether or not active family engagement is necessary for identifying language delay in a sample of children aged 30 months. It appears from the results that the factors influencing language delay in late-talking toddlers may vary, calling for clinical investigation and collaboration between the children’s families and the therapy center to develop an intervention strategy to address the problem [6,7].

The following are some of the questions that will hopefully be answered by this research: 1. How does phonological development fare for children with speech delays? 2. What are the causes of the kids’ lagging speech development? 3. How is this language disability dealt with?

2. Methodology

Children between the ages of two and four who are receiving medical care at the Rumah Sakit Universitas Indonesia (RSUI) are the subjects of this descriptive, cross-sectional study. The focus is on understanding and addressing the factors that contribute to children’s language development delays. The doctor needs to be familiar with speech milestones in order to determine if the child has a delay in communication. There are several levels of development in typical speech. Cooing, babble, echolalia, jargon, words, and babbling are all examples of combinations of words and sentence constructions.

2.1. Materials for Study

The occupational therapist at RSUI sought out children who were experiencing difficulties due to a speech disorder to participate in the research study. Inclusion necessitated the following: (a) children between the ages of two and four, (b) children with delays in language and communication growth and less attentive actions, and (c) children who live at home with their families and participate in RSUI’s therapy program. There was also discussion pertaining to parents and child therapists. This research therefore utilized a method known as purposeful sampling. The research was finished when there was no longer any change in the data.

2.2. Acquiring Information

Therapy notes written by an occupational therapist and records of counseling sessions with kids were the sources of this data. Children’s language growth during their time at RSUI was documented in these materials. Data collection methods included in-person interviews, observation, and note-taking with the children’s occupational therapists, and it was conducted in conjunction with an internship program run by the universities of Indonesia and Thailand. As many times as necessary until the condition is met, data were collected on the same topic. This fits the profile of cross-sectional studies, which are analytic forms of observational research that sample population data for analysis at a single point in time [10–12].
2.3. Data Analyzing

We found a few outliers while going through the data, so we did the following: (1) analyzed the subjects’ improvement in speech and language since beginning therapy at RSUI, (2) analyzed the anecdotal record to identify the root causes of the significant delay in participants’ speech development, and (3) had therapists and parents talk about how they approach child therapy. All of the information we have came directly from the therapists and the files that were available to access.

3. Result and Discussion

Children with Speech Delay’s Phonological Development in RSUI

Subject 1: C’s Phonological Evolution (a 3-years-9-months-old child with Down syndrome and having speech delay).

C, who is 3 years 9 months old, has a speech delay and Down syndrome. C seems to be developing language at a slower rate than other young toddlers. For example, C did not reach the milestone at the age of two, despite the fact that other children his age who had been exposed to a variety of linguistic environments did. Additionally, typically developing toddlers can understand and even make up their own words for new concepts after very limited exposure. C has spent the last five months participating in therapeutic activities. Since arriving at the clinic, he had been completely unable to form coherent sentences.

However, after he received language training, he was able to mimic and improvise meaningful conversation.

C’s imitative word output was identified by the speech therapist through the use of imitation and repetition of C’s words. A good example of this is the pronunciation of ‘bola’ in the following dialogue, which is /bwawa/ rather than /bla/. C made a feeble attempt to mimic the therapist’s bola pronunciation.

1st Excerpt:

T: (00.48) Bola/pintar, bola/ (a good ball!) C: (00.50) /bwwa/ Bwwa

Because it was present in the adult’s utterance prior to the child’s statement, C’s utterance was not spontaneous. C was able to mimic his therapist’s pronunciation, and even though it was not exactly as expected, the representation of the term was still relevant because there was a correlation between what was pronounced and what was conveyed. When C attempted to copy the same word for the second time immediately after the first, he only produced the final syllable. The (+) labio-velar approximant shifted into the (+) alveolar lateral. On another occasion, C attempted to mimic the therapist’s pronunciation of ‘bola,’ but his pronunciation was completely different. He changed /bla/ to /dada/. In this regard, imitation is inconsistent.

C’s correctly imitates the word ‘mau’ /mau/ at minute 11.50. The therapist’s stimulation enabled him to correctly pronounce the word ‘mau’.

2nd Excerpt

T: (11.37) C Mau? Mau sinii hooree? Mau? C: (11.50) /mma(u)/

In the third illustration, we see that C echoed the emphasis on the final syllable of the term “Bapak,” which is the focus of the second illustration. This fits with the hypothesis that children have ways of streamlining the process of learning a new language, such as the elimination of unstressed syllables. C’s speech development is reflected in his ability to produce speech both in response to and independently of external stimuli, as demonstrated in the following passage.

3rd Excerpt

C: (03.07) Baba? /baba/Bapak T: (03.09) Baba?

C said /bapa/ instead of ‘baba’ when asked to repeat himself by the therapist. After being prompted by a family photo, C correctly pronounced the word ‘bapak’,
then he uttered the word ‘bapa’ on his own. The next passage also depicts a case of impromptu speech.

4th Excerpt:
C: Da Uda...dadd...daa
T: Iya kuda, ituu kuda, dada kuda
C: Ndaa . . . ndaa to refer to the term ‘kuda’ (horse).

C consistently muffed the word ‘kuda’. However, he did understand what this creature represented conceptually. The /nda/ sound that C’s brain generated in response to a horse image was not an imitation. C’s response to the therapist showing him another picture of a cow was the same: /nda/. There is room to read between the lines and assume that C is referring to any and all four-legged creatures with qualities analogous to those of the ‘kuda’. An additional phonological phenomenon present in C’s speech was devoicing. He pronounced it /pph/ for the word ‘bebek’ (duck), evidence that a devoiced bilabial plosive consonant (rendering a voiced consonant voiceless).

Subject 2: R’s Phonological Development (a 3-year-9-month-old with a speech delay)
In contrast to C, R is incapable of forming comprehensible sentences when speaking. At the ripe old age of three, R was still working on the rudimentary sounds of his language. Until this investigation reached data saturation, he only produced a small number of instances of meaningful speech throughout the entire therapy session, including the following:

5th Excerpt:
R: (10.32) /he he E...e...e...
T: (10.35) (10.35) ppipp pii /pip pi/ R: (10.36) /pa pa pa/ aa...aa...app...
T: (10.39) (10.39) Pipi pipi /p-p/
R: (10.40) Ee...aa...aa...apppp...ampa...pa apa...paapa...pa pa

Exhibit 6 depicts R’s sole “positive” response during his treatment. At time stamp 10:36, the pronunciation of the word ‘pipi’ was modified to reflect R’s pronunciation of the same word: /papapa/. Although the speech was out of the blue, it was evidence that he was listening to the therapist. Instead of saying ‘pp’, he pronounced it ‘papapa’. It was not clear from the context whether he meant to say ‘papa’ (father) or ‘daddy’ (father figure). His mother says that because his father lives so far away, he rarely speaks to him. The absence of a father figure’s because of R father live in other city and just some times go to meet R. Minute 14.17: R gave a direct answer through his voice, re-disclosing a second finding connected to his voice. 6th excerpt:

T: (14.05) Ini Monyet (There is a monyet/monkey that goes by the name) R: (14.17)
daa....daaa/mmoo eett/

At minute 14.17, R appeared to produce a glottal stop (/!), but the result was ambiguous. This is due to the fact that he only said it once and it was a spontaneous remark. R made no other clearly formed utterances aside from this.

3.1. Speech Delay Treatment Options
The third area of this study inquiry focuses on the therapeutic strategy used to treat patients with speech delays. The strategies employed by therapists change as the problem at hand evolves and the surrounding conditions shift. Researchers and their therapists use a variety of approaches when working with participants.

3.2. Modifications to Motor Skills Utilized in Communicating
The goal of the exercises in this oral motor treatment is to improve one’s ability to control their speech by strengthening the muscles in and around the mouth.

A common strategy is to show kids how to use an “oral toothbrush.” When used regularly, this specialized brush can help children with speech delays speak more clearly and stimulate the speech organ, both of which are necessary for the development of wellproduced speech. This brush can be purchased for a fair price and can be found in most
baby boutiques. Both C and R’s therapists have suggested using an oral brush to help with muscle relaxation before speech therapy sessions. Both children started therapy unable to form complete sentences, so an oral toothbrush was used as one of several strategies to loosen up their vocal chords and improve their ability to articulate.

However, C has developed ahead of R over time, which may be attributable to a number of forms of speech delay.

This therapy program, also known as language intervention therapy, is a method of assisting those who need it to develop better communication skills. The therapists at RSUI use this method to help their young clients with language delays. Patients receiving this treatment regularly attend a hospital for an intensive one-hour class. The goal of the class is to get the child to mimic the therapist by using their own words and phrases.

Children with speech delays often have trouble paying attention, so it is important to keep their gaze engaged at all times. The therapist’s instructions to the kids in therapy are very straightforward.

Vowels, bilabial consonants, and body parts are just some of the things that can be taught to kids through imitation. Children may initially resist being obedient. However, kids will get used to the process of copying and correcting, and in time they will be able to come up with their own words without prompting. This is because kids have a head start on building the mental machinery that will help them understand and express themselves through language. That is to say, once the idea clicks, kids will be able to come up with their own articulate words. To put it another way, in this case, the output of children with speech delays is drastically lower than that of typically developing children. It is estimated that C will need about four months of therapy before he is able to make spontaneous speech.

3.3. Formulization Strategy

Exaggerated models of word pronunciation are used in this therapy technique. So that the kids can follow along and learn from the therapist’s actions, she uses more drawn-out pauses in her speech and different intonation. Several repetitions of the modeling are used to permanently establish the concept in the child’s mind. In the following illustration, the therapist makes use of the modeling technique.

Beebek tirukan...hebat!

T exclaimed on 14 September 2022. Exhausted by beebeekk.

Beebee mau? (C: 05.14) /hebat...tirukan lagi bebebee mau).

To help a young child memorize and eventually repeat the word ‘bebek’ (duck), the word is spoken slowly, exaggeratedly, and at a high pitch.

The ‘here and now’ idea is also employed in therapeutic settings where the emphasis is placed on gaining knowledge that can be immediately applied and has a direct and obvious impact. Therapists often use visual aids such as big books, realia, and dolls to really drive home the point. The child’s therapist used sets of realia and photographs of family members’ responsibilities, for instance, to teach the child about the human body and its various parts.

3.4. Learning through Play

Play is one tool that the therapist can use to help children open up and start communicating. When trying to get a young child to talk, it is often helpful to withhold the child’s favorite item until the child specifically asks for it. The therapist would not release the toys C and R wanted until they said or imitated the therapist’s cue word. As an illustration:

T: (03.05) (02.50) (02.50) (02.50) What do you say? If you go back far enough, you can do what you want to do, nii, na-mun, bilang dulu mauu.

C: (03.13) (03.13) (03.13) Aaaauuu/aauuu

Until the child mimicked the initiated speech, the therapist in this case refused to return the wooden puzzle to its box. Using this method, the baby will be motivated to try to form the word in order to get what he wants. This is due to the fact that she is already able to produce words, albeit ones that are not always decipherable.
3.5. The Use of Behavioral Strategies

This method of therapy was used to successfully channel the child’s boundless energy. Toddlers with speech delays often have trouble paying attention to what others, in this case the therapist, are saying because of a lack of focus, also known as a focus deficit. Four months after completing therapy, C showed marked improvement in his ability to focus. Slowly but surely, he has begun making direct eye contact with everyone around him. Formerly ignoring others, he has learned to listen carefully to what others have to say. This was shown by his ability to imitate adult speech enthusiastically and cooperatively, as well as his ability to develop his own speech naturally without stimulation. This evidence suggests that restlessness is associated with one’s capacity to sustain attention and process information. Young children who easily lose their temper are less likely to listen to what others have to say. Toddlers who are not running around too much are better able to pick up language skills such as mimicry and comprehension.

All of the following strategies are provided to parents of speech-delayed children so that they can implement them at home, as home therapy plays a larger role in the treatment of speech-delayed children. Studies show that the amount of time spent by parents caring for their kids at home is rising. If parents are not actively encouraging their child’s language growth, the child may not meet developmental milestones in speech. Parents are urged to immerse their kids in as many linguistic opportunities as possible to help them develop their linguistic skills. The children’s pediatrician, medical doctor, psychologist, therapist, and parents get together every three months to review their progress. All of these measures are taken at the same time to help kids with speech delays catch up in their language development.

4. Discussion

This research project’s objectives included analyzing the phonological processes of three RSUI-treated children with language delays. With regards to phonology, one could argue that a child’s fluency in communicating is defined by their capacity to successfully imitate and articulate meaningful words. Because understanding what others are saying is essential for producing one’s own speech, providing the ability to mimic without imparting an understanding of the spoken phrase is still regarded as a relatively primitive stage in language acquisition.

Observations of phonetic and phonological development in infancy revealed a delay in phonological development, which was similar to, but slower than, that reported in the literature for typically developing children. Therapy aimed at increasing a child’s verbal output is called speech therapy. By using a real duck to introduce the word ‘bebek’ (duck), the speech therapist modeled an activity that stressed the importance of imitation by having the children first imitate the sound and then the relevant content. In the first topic C, the therapist showed the child a picture of a zoo with various animals and then used the word ‘kuda’ (horse) to get the child to say it. C showed a willingness to mimic the therapist’s speech and an understanding of individual words. He also refined his own ability to make up words on the spot, such as ‘papa’.

It is safe to assume that R’s primary coping mechanism is avoiding certain phonemes and vocabulary. He would not be reliably imitated or labeled, nor would he answer questions. At minute 14.17, when saying adok nantok’ /a nantok’/, R made what sounded like a glottal stop (/\), but the result was unclear. This is due to the fact that his remark was unique and unplanned.

R did not make any other complete sentences. The average three-year-old can comprehend and participate in most conversations. Between the ages of 24 and 30 months, children become more attuned to rhyme, and between the ages of 30 and 36 months, they begin to develop the ability to produce rhyme (through words such as ‘cat–hat’). The language delay experienced by Subject C can be attributed in part to his inattention or attention deficit; therefore, getting him attentive is one way to help him learn a language more quickly, along with exposing him to a varied and stimulating language environment.
In contrast to children such as R, who were neglected in terms of attention and language exposure, children with a history of speech delay who receive adequate care and exposure are more likely to have strong language development. C, in contrast to R, has a better chance of successfully enhancing his linguistic abilities. Participants who experienced home neglect had lower cognitive and language scores and more behavioral issues than children who were not ignored, which is consistent with the finding of Spratt et al. (2012) that home neglect causes significant language impairments. Children’s development can be affected by bilingualism, which occurs when they use languages other than their mother tongue [4,6].

Communication is a behavior in which information is exchanged between the speaker and the listener through the use of dialogue. In the meantime, the information that is transferred on the device only goes in one direction. Because of this, a toddler should not use a gadget as a means of communication because it is not age-appropriate. In addition to this, an illustration or picture displayed on a device is a form of rapid visual stimulation that involves a change in scenery, a change in character, and the introduction of new objects every minute; consequently, it is unable to contribute to the cognitive development of children when compared to drawing books. In addition, spending an excessive amount of time on a technological device will decrease the amount of interaction and opportunities for play between parents and their children. As a result, the attention of parents, as well as the quantity and quality of the speaking that parents do in the presence of their children, has a tendency to drastically decrease. The factors that cause speech development disorders are complex and have not been definitively identified; however, based on the evidence that is available, parenting style, gender, genetic factors, and environmental factors are most likely the primary contributors to speech disorders. Children are not able to learn or understand words or other concepts as well from screen media as they are from interaction with real people in real life.

These results highlight the significance of a stable, language-rich early environment. A child’s language development can be aided by treatment, which is an intervention. A person’s linguistic development is profoundly affected by both physical and emotional neglect. Because early childhood is a formative time for learning and maturing in areas such as cognition, language, and emotion regulation, neglect in this age group is especially worrisome.

5. Conclusions

This study follows the progress of two children at the University of Indonesia Hospital who were diagnosed with phonological system disruption and subsequently received direct intervention from a professional therapist. The results of this study provide support for the hypothesis that children with developmental delays may have phonological systems similar to those of younger, typically developing children, despite the fact that one participant did not make the predicted improvement. Two children of varying ages and conditions were included in this study, and their RSUI treatment outcomes were not comparable.

Both subjects’ growth and development are probably impacted by their early exposure to languages spoken at home. In the case of children with speech delays, it is not always assumed that speech comprehension or thought is the basis of speech production, as the children (subject) uttered a specific word as a result of the intense stimulation or elicitation method that speech therapy employs to stimulate the child to produce speech.

Therefore, it makes sense to highlight the importance of imitation in a therapy session through a modeling activity, allowing the children to imitate the sound while context is provided through visuals and real-world objects. Many people assume that language is learned through imitation. Imitation occurs when a child repeats what they have overheard others say. It is important to keep in mind that imitation might only work for vocalizations.

In this digitalized age, parents’ use of portable electronic devices, even if loaded with pedagogically sound content, may be counterproductive to their children’s growth and development. Social, cultural, and economic factors may have more to do with the stress
levels of parents or the consistency of the caregiving than the amount of time a baby spends in front of a screen. The key is providing families with unplugged time and places to use in setting limits on screen use. Although it may be challenging, it seems critical to make time for real-time, in-person interactions with kids.

Consequently, verbal imitating has a beneficial effect on the articulation, tone, and pattern of language sounds. As soon as a child learns to articulate, they will also learn to comprehend. If a child is developing normally, they will first learn to understand language, and only then will they be able to produce their own words. In contrast, a speech production may be triggered to enhance speech comprehension in children with speech delays or to stimulate the development of a child’s ability to learn new words.

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Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to institutional data privacy and also medical record data protection policy.

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