

SPEECH THERAPY MODEL BASED ON NEURO LINGUISTIC PROGRAMMING (NLP): OPTIMIZATION OF DEAF SPEECH ABILITY

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Abstract: This study aims to describe the feasibility and effectiveness of a Neuro Linguistic Programming (NLP) based speech therapy model. The speech therapy model was developed using the Borg and Gall model at Makassar State SLB through the stages of research and information gathering, planning, development of initial product forms, and preliminary field trials. Data from expert validation results were analyzed using descriptive statistics, and data on the ability to speak with the deaf was analyzed using inferential statistical tests (t-test paired samples). The results of the study indicate that the developed speech therapy model is appropriate and effective for use in speech therapy for the deaf. The feasibility speech therapy model is used because it meets the feasibility aspects, namely the feasibility of supporting theory, the feasibility of orientation and goals, the feasibility of the reaction principle, the feasibility of therapeutic procedures, the feasibility of support systems, and the feasibility of implementing therapy. Speech therapy models based on Neuro Linguistic Programming (NLP) can improve the ability of the deaf to pronounce and understand the meaning of vocabulary and reduce anxiety when speaking.

Keywords: speech therapy, deaf, Neuro-Linguistic Programming (NLP)

Communication takes place when the speaker and interlocutor understand the process and are able to apply knowledge creatively. Communication is the delivery of information, ideas, emotions, skills, through the use of language symbols (Kustini, 2017). It is considered effective if the communication that occurs is two-way, where the stimulated meaning is the same or similar to that intended by the speaker.

The communication process uses language that produces speech acts, both oral and written. Language is a communication tool used by humans to communicate with others (Geurts, 2019). It plays a very important role in human life, because with language humans can interact with other humans. (Rao, 2019) states that it helps humans to obtain information from others. The information uses both written and spoken.

A speaker must use good language and not convoluted, so that the listener is able to understand what is conveyed by the speaker (Setiawati & Arista, 2018). In communicating orally, speakers need to pay attention to the sentences they say (Patiung, 2016). In this case, the speaker pays attention to whether the sentence spoken can be understood by the speech partner and whether the sentence spoken does not cause misinterpretation.

The mastery of speaking is the ability, skill, richness of speech of human thoughts and feelings through sound that is arbitrator, used to cooperate, interact, and identify themselves in good conversations (Siregar, 2021). The ability to speak is acquired through the activity of imitating the elements of language. (Ribot et al., 2018) states that the activity of imitating language elements is formed through activities, revealing for themselves what is seen and felt through words as the beginning of expressive language skills.

Deaf people have an effective speech impediment caused by a disturbance in the hearing organ resulting in hearing inability (Juherna et al., 2022). Hearing disorders for the deaf result in limited opportunities to build a list of words that can be used to establish communication, thus making it difficult to establish relationships (Granlund et al., 2018); (Hasim & Rahayu, 2020).

Physically, deaf people are no different from normal people in general, because people will know that they are deaf when they speak. (Zaenuri & Maemonah, 2021) revealed that deaf people speak silently or with a voice that is lacking and unclear in articulation, or even does not speak at all, they only gesture. Deaf in the form of low understanding of receptive language actions which results in inaccuracy of pronunciation and production of language sounds (Mursidi, 2019)

Deaf speech speakers are grouped into four categories, namely: very light, very light, healthy, and close (Mardiana, 2016). Based on this, there are different levels of deviations in the use of language rules of deaf children, depending on the category of communication disorders suffered. The results of observations at SLB Negeri 1 Makassar show several obstacles experienced by children with deaf children in communicating, namely: lack of accuracy in pronunciation and production of language

sounds, lack of understanding with the environment, and low understanding of receptive language acts. This confirms that interference in communicating with children is fundamental to be investigated further.

One effective formulation to improve deaf speech is to develop a speech therapy model based on Neuro-Linguistic Programming (NLP). In addition to providing novelty in its form, the speech therapy model with Neuro-Linguistic Programming (NLP) is also believed to help the deaf in pronunciation, language sound production and receptive language production.

Speech therapy is carried out to make a diagnosis and treatment of language, speech and voice disorders (Leigh, 2017); (Busri et al., 2021). Meanwhile, according to (Madyawati, 2016) speech therapy is a form of treatment to develop the ability to communicate well in accordance with existing language norms. Speech therapy can help individuals who have difficulty speaking, understanding, or using language effectively (Baker et al., 2021)

The integration of speech therapy with Neuro-Linguistic Programming (NLP) is a formulation of a speech therapy model that integrates operational procedures for the implementation of speech therapy with the stages of Neuro-Linguistic Programming (NLP). According to Roth & Worthington (2019) the operational procedure of speech therapy implementation consists of: imitation of language skills, therapy plans, language sound production exercises, repetition, sustainability, and skills practiced in real contexts. Furthermore, (Grimley, 2018) describes the stages of Neuro-Linguistic Programming (NLP) into 3 parts, namely: neuro, linguistic, and programming. Neuro refers to the brain or mind, how to organize mental life (Passmore & Rowson, 2019). Linguistic is about language, how to use language to create meaning and its influence on the mind and life (Kotera & Sweet, 2019). Programming is about the sequence of mental processes that affect behavior in achieving certain goals, and how to modify mental processes (Drigas et al., 2022).

Neuro-Linguistic Programming (NLP) can be used to evaluate and diagnose the articulation and production of language sounds by mental agitation to understand the sounds of spoken language (Naha, 2018). Neuro-Linguistic Programming (NLP) is effectively applied as a

form of treatment to overcome speech disorders by changing internal representations, using positive language, and changing submodalities in the mind (Nompo et al., 2021). Furthermore, Neuro-Linguistic Programming (NLP) utilizes the subconscious to help improve word pronunciation and understanding of language context with techniques by visualizing and providing references to objects observed and heard (Hedayat et al., 2020). Previous studies have shown a different, but relevant context for developing speech therapy models. Previous research has only examined the effectiveness of Neuro Linguistic Programming (NLP) as a form of treatment to treat speech disorders. This research developed a speech therapy model based on Neuro Linguistic Programming (NLP). This research aims to produce a feasible and effective Neuro Linguistic Programming-based speech therapy model product.

METHOD

The type of research used is Research and Development (R&D), which is the type of research used to produce certain products, and test the effectiveness of these products (Sugiyono, 2013). In this study, researchers used the Borg and Gall development model to develop a Neuro Linguistic Programming (NLP)-based language therapy model. The Borg and Gall development model consists of ten product development steps (Ansori, 2020), namely: research and information collecting, planning, develop preliminary form of product, preliminary field testing, main product revision, main field testing, operational field testing, final product revision, and dissemination. But the study used only four steps. The steps are: (1) research and information collecting, (2) planning, (3) developing preliminary form of product, and (4) preliminary field testing.

The field test was conducted involving 12 deaf people with an age range of 2-7 years at SLB Negeri 1 Makassar. Field trials of language therapy models based on Neuro Linguistic Programming (NLP) were carried out using one group pretest-posttest design experiment design. The determination of test subjects was carried out by total sampling technique.

Data collection instruments, questionnaires, expert validation and speaking ability tests.

Feasibility data of speech therapy models are obtained from the results of expert validation. A total of two speech therapists were involved as validators. Each expert validates the speech therapy model from the feasibility aspects of supporting theory, feasibility of orientation and purpose, feasibility of reaction principle, feasibility of therapeutic procedures, feasibility of support systems, and feasibility of implementing therapy. Data on the effectiveness of the speech therapy model obtained deaf speech skills in pretest and posttest field trials.

The expert validation data were analyzed using descriptive statistics and deaf speaking ability data using inferential statistics paired sample t-test. The success indicators of the study are: the speech therapy model is declared feasible if the total average expert validation results are in the range (0.40 – 0.80) and the speech therapy model is declared effective if the GIS ($p < 0.05$).

RESULTS AND DISCUSSION

Research Results

The presentation of the results of this study is divided into two parts, namely: (1) the process of developing a speech therapy model and (2) the effectiveness of the speech therapy model. The description of each section is presented as follows.

Processes and Product Development Results of Speech Therapy Model Based on Neuro Linguistic programming (NLP)

The process of developing a speech therapy model at each stage of development is described as follows. First, data collection. Data collection activities are carried out to find out and explore existing speech therapy models published in national and international journals and speech therapy books. The problems explored in data collection, namely (1) speech therapy models that are carried out now, (2) standard procedures for speech therapy operations, (3) speech therapy implementation techniques, (4) the role of therapists in the implementation of speech therapy, (5) obstacles experienced by the deaf in oral language, (6) forms of measurement of speech ability of deaf children, and (7) follow-up speech therapy.

Second. Planning. The activity carried out at the planning stage is to design the components of the speech therapy model. The design results of the components of the speech therapy model, namely (1) Introduction. (2) Standard operating procedures. (3) Therapeutic techniques (4) Measuring instruments. Third, the development of a speech therapy model. Activities carried out at the development stage are the preparation of speech therapy model feasibility validation sheets and speech therapy model books. Indicators set to measure the feasibility of language therapy models, namely supporting theories of model development, orientation and goals, reaction principles, therapeutic procedures, support systems, and therapy implementation.

The speech therapy model book consists of 4 Chapters, namely: (1) Chapter I Introduction. The introductory section contains a brief

description of the relevance of Neuro Linguistic Programming (NLP) to speech therapy. (2) Chapter II. Standard operating procedures. The standard operating procedure section contains procedures for implementing speech therapy consisting of: pre-interaction, orientation stage, termination and documentation. (3) Chapter III. Therapeutic techniques. The therapy technique section contains a form of speech therapy treatment consisting of: reframing, anchoring, building, and six step framing. and (4) Chapter V. Instruments measuring speech ability. The instrument section contains measurements containing a questionnaire assessment of deaf speech skills after speech therapy treatment.

Fourth, validate the feasibility of the speech therapy model. Eligibility validation is carried out by two experts. The results of expert validation are shown in the following table.

Table 1. Results of Feasibility Validation of Speech Therapy Model

| No | Aspects | Assessment Score | | Sum | I-CVI |
|----|---|------------------|----------|----------------|-------------|
| | | Expert 1 | Expert 2 | | |
| 1 | Feasibility of supporting theories | 1 | 1 | 2 | 2/2 = 1 |
| 2 | Feasibility of orientation and purpose | 1 | 1 | 2 | 2/2 = 1 |
| 3 | Feasibility of reaction principle | 1 | 0 | 1 | 2/2 = 0.5 |
| 4 | Feasibility of therapeutic procedures | 1 | 1 | 2 | 2/2 = 1 |
| 5 | Feasibility of support system | 0 | 1 | 1 | 2/2 = 0.5 |
| 6 | Feasibility of therapeutic implementation | 1 | 1 | 2 | 2/2 = 1 |
| | | | | Σ I-CVI | 0,83 |

Based on Table 1 feasibility assessment of supporting theory shows that the final result given by validators on each indicator obtains an average = 1 (very feasible). The feasibility and objectives of therapy showed that the final result given by validators on each indicator obtained an average = 1 (very feasible). The feasibility of the action principle shows that the final result provided by validators on each indicator obtained an average = 0.5 (feasible). The feasibility of the therapeutic procedure showed that the final result given by validators on each indicator obtained an average = 1 (very feasible). The feasibility assessment of the support system shows that the final result provided by validators on each indicator obtained an average = 0.5 (feasible). The feasibility of therapy shows that

the final result given by validators on each indicator obtains an average = 1 (very feasible). The average total eligibility aspect = 0.83, is in the very decent category (>0, 80). Thus, the speech therapy model based on *Neuro Linguistic Programming (NLP)* is declared very feasible to be used to improve the speech ability of the deaf.

Effectiveness of Speech Therapy Model Based on *Neuro Linguistic Programming (NLP)*

Test the hypothesis in this study, using a t-test. Hypothesis testing with t-test aims to test the effectiveness of speech therapy models based on neuro linguistic programming (NLP). Data on the effectiveness of the Neuro Linguistic Programming (NLP)-based speech therapy

model was obtained from the pretest and posttest results of deaf speech skills.

Before the t-test, deaf speaking data on the pretest and posttest were analyzed for

normality and homogeneity. The normality test is performed with the Lilliefors statistical test (Kolmogorov-Smirnov). The results of the normality test are shown in the following table.

Table 2. Deaf Speaking Normality Test on Pretest and Posttest

| | <i>Kolmogorov-Smirnov^a</i> | | | <i>Shapiro-Wilk</i> | | |
|-----------------|---------------------------------------|-----------|-------------|---------------------|-----------|-------------|
| | <i>Statistics</i> | <i>Df</i> | <i>Sig.</i> | <i>Statistics</i> | <i>Df</i> | <i>Sig.</i> |
| <i>Pretest</i> | .19 | 12 | .20* | .84 | 12 | .32 |
| <i>Posttest</i> | .20 | 12 | .10* | .88 | 12 | .99 |

Table 2 shows that the results of the deaf speech normality test on the pretest obtained sig (p) = 0.20 and sig (p) on the posttest = 0.10. This shows that the sig (p) pretest and posttest > 0.05. Based on the results of the normality test, it is stated that the ability to speak deaf in the pretest and posttest is normally distributed.

Test the homogeneity of deaf speaking ability on pretest and posttest with statistical test of homogeneity of variances provided that if the significance of sig (p) >0.05, then the data is declared homogeneous. Conversely, if the significance of sig(p)<0.05 then the data is declared inhomogeneous. The results of the normality test are shown in the following table.

Table 3. Deaf Speaking Homogeneity Test on Pretest and Posttest

| <i>Levene Statistic</i> | <i>df1</i> | <i>df2</i> | <i>Sig.</i> |
|-------------------------|------------|------------|-------------|
| 3.21 | 1 | 22 | .087 |

Table 3 shows that the test results of homogeneity of deaf speaking ability in pretest and posttest are declared homogeneous because sig (p) = 0.087. This indicates that sig(p)>0.05. Furthermore, U ji-t is performed using paired

samples t-test provided that if the sig (p) value >0.05, then the hypothesis is declared accepted. Conversely, sig (p) <0.05, then the stated hypothesis is rejected. The results of Uji-t are shown in the following table.

Table 4. Paired T-test of Deaf Speaking Ability on Pretest and Posttest

| <i>Paired Sample Test</i> | | | | | | | | |
|---------------------------|-------------|-----------------------|------------------------|--|--------------|----------|-----------|------------------------|
| <i>Paired Differences</i> | | | | | | | | |
| | <i>Mean</i> | <i>Std. Deviation</i> | <i>Std. Error Mean</i> | <i>95% Confidence Interval of the Difference</i> | | <i>t</i> | <i>Df</i> | <i>Sig. (2-tailed)</i> |
| | | | | <i>Lower</i> | <i>Upper</i> | | | |
| Pretest-Posttest | 70.79 | 10.08 | 2.058 | 66.53 | 75.05 | 34.38 | 23 | .023 |

Table 4 shows that the paired t-test results, sig (p) = 0.023 < 0.05. Based on these results, it was found that there was a significant difference between the pretest and posttest scores of deaf speaking ability. Thus, the speech therapy model based on Neuro Linguistic Programming (NLP) is declared effective for improving the speech ability of the deaf.

Discussion

Based on the description, the results of the study show that the development of a speech therapy model based on Neuro Linguistic Programming (NLP) is declared effective. This speech therapy model was developed based on initial data collection, planning, model development, and model feasibility testing. The data collection stage has obtained information

related to the form of deaf language disorder. For the development, an assessment was obtained that met the feasibility aspects in using a speech therapy model based on Neuro Linguistic Programming (NLP) so that it was suitable for use for deaf speech therapy.

Substantially, the Neuro Linguistic Programming (NLP)-based speech therapy model has characteristics that can improve the speech ability of the deaf. The main characteristics that characterize and at the same time distinguish this research product from other research products are: standard operating procedures for speech therapy, speech therapy techniques, and instruments for measuring speech ability. Operational procedures of speech therapy consisting of pre-interaction, orange stage, termination and documentation. Therapy techniques contain forms of therapeutic treatment consisting of: reframing, anchoring, building, and six step framing. While the instrument contains measurements containing a questionnaire assessment of the speech ability of the deaf.

In the context of speech therapy for the deaf, the use of Neuro Linguistic Programming (NLP) can provide a stimulus to help the deaf recite the proper vocabulary of what is seen, heard, and felt. This is in line with the results of Satbek & Akynova's (2019) research which states that Neuro Linguistic Programming (NLP) helps deaf people connect vocabulary with objects well through words that are repeatedly boosted, control and reduce anxiety when speaking. This shows that the speech therapy model based on Neuro Linguistic Programming (NLP) can be used in speech therapy because it is supported by visualization techniques, auditive relaxation. This finding confirms the results of research by Koeritzer et al (2018) that increasing the ability to speak optimally, speakers are given treatment to remember and hear vocabulary better, build associations between certain words and the visualizations they see in their minds, and relieve anxiety that can interfere with the ability to speak.

Speech therapy based on Neuro Linguistic Programming (NLP) can improve the ability of the deaf to understand the meaning of the city of words heard. These findings indicate that speech therapy based on Neuro Linguistic Programming (NLP) is effectively used to help deaf people receptive language acts. According

to Haliza et al (2020), speech therapy can help improve deaf receptive language skills through exercises that focus on hearing and vocabulary comprehension.

Speech therapists can use vocabulary recognition techniques through pictures, practice listening to sounds and words, and understanding simple instructions (Heriyanti, 2020). This is in line with the results of research by Kim et al (2018) that the use of images by therapists can help improve the understanding of deaf vocabulary by visualizing words that are difficult to understand or abstract to be more concrete. Therapists can use images or illustrations to show objects, activities, or situations connected by words (Hronis et al., 2017). In addition, the results of research by Sulistyowati et al (2022) found that the use of images can also help therapists to build speech skills of deaf children, including the ability to structure vocabulary, sentences and develop new vocabulary. By looking at the images provided by the therapist, the deaf can develop associations between words and images, and understand how words can be used in different contexts (Grove & Woll, 2017).

Speech therapy based on Neuro Linguistic Programming (NLP) can be implemented effectively if supported by standard operating therapy procedures, speech therapy techniques, and speech measurement instruments. This finding is in line with the results of Mukhitdinovna's (2022) research that the success of speech therapy carried out is limited by therapeutic methods used to overcome deaf speech disorders and the implementation of evaluation to measure the improvement of deaf speech skills. In addition, (Keezhatta & Omar, 2019) states that integrasi Neuro Linguistic Programming (NLP) in speech therapy is able to activate the subconscious of the deaf (brain-hax). This allows deaf people to upgrade their memory, senses, communication, mindset and intelligence.

CONCLUSION

Based on the results of the study and discussion of the results of the study, it can be concluded that the speech therapy model based on Neuro Linguistic Programming (NLP) developed has been feasible and effectively used for speech therapy in the deaf at SLB Negeri 1 Makassar. Speech therapy based on neuro

linguistic programming (NLP) is feasible to use because it has met the feasibility aspects of therapeutic implementation. The speech therapy model based on Neuro Linguistic Programming (NLP) is effective because there are significant differences. Improve deaf speaking skills in

pronouncing and understanding vocabulary meaning and reduce anxiety when speaking. Based on this, therapists are recommended to use this speech therapy model to improve the speech ability of the deaf.

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