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The Effectiveness of Neuro-Linguistic Programming Techniques in Reducing Students' EFL Oral Disfluencies

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Abstract: This study aimed to investigate the effectiveness of Neuro-Linguistic Programming techniques (NLP) in reducing EFL oral disfluencies among second-level students in the Department of English, Faculty of Education-Tooralbaha, University of Lahej. A sample of 40 students from the second level of the second semester in the academic year 2021-2022 was selected with a focus on ensuring homogeneity based on their previous grade sheet of speaking skills. The sample was then divided into two groups: an experimental group consisting of 20 students and a control group of the other 20 students.

To achieve the study's objectives, a pre-test was conducted to measure the oral disfluencies of both the experimental and control groups. Following that, a training program based on NLP techniques was administered to the experimental group over sixteen training sessions during eight weeks. Subsequently, a post-test was conducted to measure the oral disfluencies of both groups to collect the data needed. After conducting appropriate statistical analysis, the findings emphasized the effectiveness of the NLP techniques in reducing instances of students' oral disfluencies such as pauses and repetitions. These findings emphasize the value of integrating NLP techniques into language teaching and learning providing a practical means to address speech difficulties and cultivate greater fluency and confidence among EFL students. Based on these findings, the researcher has formulated a series of recommendations to leverage NLP in various educational domains.

Keywords: Effectiveness, Neuro-Linguistic Programming, Reducing, Oral Disfluencies.

1. Introduction

NLP was developed by Grinder and Bandler in the early 1970s at the University of California, Santa Cruz. According to Bandler and Grinder (1979), NLP is a mindset accompanied by a systematic approach that involves a progression of techniques. However, the exact definition of NLP has been subject to uncertainty, as highlighted that Bandler referred to NLP as an attitude and methodology rather than just a trial of techniques (R. Dilts personal communication, July 9, 2012).

Determining the nature of NLP is an important question that needs clarification. A discipline that downplays the techniques resulting from its underlying principles is fundamentally different

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from one that emphasises and positions those techniques as reliable and valid products. The attitude is formalized through the pre-suppositions of NLP, while the methodology involves modelling, and the techniques are the patterns of human thinking and behaviour that emerge from modelling projects (Grimley, 2012).

NLP focuses on cognitive processes and analyses internal mental activities such as thinking, remembering, perceiving and learning. It draws on psychological studies to understand these cognitive activities, their relationship with brain activities and mental processes. Cognitive processes play a role in language acquisition, information storage, manipulation and transformation. Psychological studies rely on observations of verbal behaviour, reactions and nonverbal cues to infer how individuals perceive objects and experiences.

NLP is applied as a technique for communication and personal development in various fields including management, training, sales, counselling and law. It offers individuals the opportunity to become effective EFL learners by analysing the interrelation of the mind, body, inner development, language learning and behaviour. It aims to analyse both the internal and external experiences of human behaviour, language, and communication. NLP is recognized as a collection of techniques that can assist in understanding how individuals think and use language to communicate and behave.

1.1. Statement of the problem

In the Yemeni context, English language teaching primarily focuses on oral communication, utilizing a communicative approach in the adopted EFL courses. However, reports indicate that many university students face difficulties in oral communication. There is a significant gap in the delivery of education services particularly in EFL learning where students encounter obstacles in the teaching and learning process. Challenges such as lack of motivation, comprehension, and effective teacher-student communication hinder EFL instruction and learning. As in Ali (2011), EFL students' oral performance in the Faculty of Education-Tooralbaha is weak due to teaching difficulties, learning environment, psychosocial factors, and ineffective EFL methods. Thus, this study examines the effectiveness of NLP techniques in reducing EFL oral disfluencies among students at the Faculty of Education-Tooralbaha, University of Lahej.

1.2 Objective of the study

The objective of this study is to evaluate the effectiveness of NLP techniques in reducing EFL oral disfluencies among students in the Department of English at the Faculty of Education-Tooralbaha, University of Lahej.

1.2. Hypotheses of the study

To achieve the objective of the study, the following hypotheses were established:

1. There are statistically significant differences at the significance level of (0.05) between the mean scores of the pre-test and the post-test of the experimental group in EFL oral disfluencies due to the experiment of NLP techniques in favor of the post-test.

2. There are no statistically significant differences at the significance level of (0.05) between the mean scores of the pre-test and the post-test of the control group in EFL oral disfluencies.

1.3. Significance of the study

To the best of the researcher's knowledge, this study is the first of its kind in Yemen to examine the effectiveness of NLP techniques in reducing EFL oral disfluencies among students. The main aim is to explore innovative approaches and techniques that can address students' EFL oral disfluencies through the use of NLP techniques. Therefore, the significance of the study can be summarized as follows:

- The study provides teachers with the opportunity to explore a novel NLP-based program designed to reduce students' disfluent features in spoken English.
- It benefits students studying in rural learning environments, where the learning process can be complex and diverse. It enables them to understand their own decision-making, communication, motivation, and learning processes.
- It contributes to the existing body of knowledge by offering realistic and up-to-date information on the effectiveness of NLP techniques in decreasing students' oral disfluencies in English.
- It can encourage institutions to support English teachers in faculties of education and other related institutions in evaluating the value of integrating NLP into EFL teaching and learning.

2. LITERATURE REVIEW

2.1 NLP presuppositions

The NLP presuppositions are guiding principles that underpin the practice of NLP. Henni (2019) identifies the key presuppositions as follows:

1. **There is no failure, only feedback**: Situations that do not go as desired are not considered failures but opportunities for learning and improvement. Constructive feedback is valuable for personal growth and development.
2. **The map becomes the territory**: Beliefs strongly influence our perception of reality. Positive beliefs can manifest as positive outcomes while negative beliefs can limit progress. It is important to cultivate positive self-talk and focus on strengths and achievements.
3. **People respond according to their 'maps'**: Individuals respond to the world based on their internal maps, which are shaped by their beliefs, values, attitudes, memories, and culture. Understanding and respecting others' maps can lead to better communication and relationships.
4. **The map is not the territory**: Our subjective experience of the world is not the same as the objective reality. Our mental maps shape our perception and what goes on inside our minds does not fully represent the external world.
5. **Every behaviour has a positive intention**: All behaviours are driven by a positive motive or intention, even if it may not be immediately apparent. Recognizing the positive intent behind behaviour promotes understanding and empathy.
6. **The meaning of communication is the response it elicits**: The effectiveness of communication is determined by the response it generates. The meaning of a message is not solely based on what is said but on the impact it has on the receiver.
7. **The mind and body are the same system**: The mind and body are interconnected. Thoughts and emotions influence physical well-being and physical conditions can affect mental states. The mind and body should be considered as parts of an integrated whole.

2.2 NLP representational system and techniques.

According to Ellerton (2007), NLP incorporates various techniques with distinct steps in the personal development process. One crucial stage is the identification of an individual's preferred representational system. In the context of NLP, representational systems refer to the diverse ways in which information is stored and processed in mind. This encoding occurs through the five main sensory modalities: visual, auditory, kinaesthetic, gustatory, and olfactory. O'Connor and Seymour (1993) and Linder-Pelz (2010) suggest that individuals filter this information through their beliefs and values, leading to the re-representation of experiences and subsequent actions. McAfee (2014) emphasizes that studying representational systems in NLP offers insights into information processing and the interpretation of meaning within the human mind. Additionally, Palmiero, Di Matteo, and Belardinelli (2014) note the ongoing debate concerning how people represent conceptual knowledge, proposing that it may be distributed across different attribute domains. While individuals employ all sensory-based representational systems for learning, there is typically a dominant preferred system that is utilized more frequently. This preference is manifested through an individual's speech patterns, learning methods, and communication styles, as highlighted by NLP Dynamics Ltd. (2013). Consequently, generalizations regarding characteristics can be made based on an individual's preferred representational system.

There are indicators that help in identifying the representational system individuals are using and their preferred system. These cues can include posters, gestures, breathing patterns, voice tone, and tempo. Bandler and Grinder (1979) discovered that eye movements can provide insights into the representational systems people are using. For example, looking up suggests the use of the visual system, looking to the sides indicates the auditory system, and looking down to the right suggests the kinaesthetic system. Additionally, internal dialogue is typically associated with the lower left eye direction. Dilts (1998) suggests that accessing cues, such as eye movements, can provide insights into which part of the brain individuals are using when processing information. By observing students' eye movements, teachers can gather information about their preferred representational system in specific situations. This knowledge can help teachers tailor their instruction to accommodate different learning styles. Representational systems work along with different NLP techniques that can be reviewed as follows:

2.2.1 Visualization

In the realm of NLP, there is a strong emphasis on visualizing positive future goals as if they have already been accomplished. This involves creating detailed mental images of what will be seen and internally heard in terms of self-talk, as well as external sounds. Visualization is considered a valuable tool in teaching and learning within the classroom setting. It helps learners become calmer, more focused, and receptive to learning at the beginning of whole-class sessions. Additionally, visual aids, such as a symbolic wave of a magic wand, can effectively remind learners of their expected behaviour and engagement (Hickmott & Bendefy, 2006). Visualization primarily relies on images and pictures, where teachers present visual stimuli and prompt students to generate creative responses based on what they see. This approach places less importance on mistakes and instead aims to improve fluency. Various tools, such as videos, charts, and flashcards, are utilized to facilitate visualization in the learning process (Delbio & Ilankumaran, 2018).

2.2.2 Anchoring

Anchoring is a technique in NLP that involves creating cues or triggers to elicit specific emotions or desired behaviours. These triggers, known as anchors, can be established through verbal, spatial, or tactile means. The purpose of anchoring is to establish a connection between a particular state of mind or emotion and the anchor, allowing individuals to access that state at will. Anchoring is a useful tool for inducing positive mental states or emotions, such as happiness or relaxation. It is similar to behavioural conditioning but takes into account the complex mental processes of human beings. Anchors can be external stimuli, such as sounds, visuals, or smells, that evoke certain responses or memories. In an educational context, anchoring can be used to reduce stress and anxiety and promote problem-solving by eliciting creative answers from students (Bandler & Grinder 1979).

2.2.3 Reframing

Bandler and Grinder (1982) defined reframing as another NLP technique that involves changing the meaning or interpretation of experiences or events by shifting the frame through which they are perceived. Frames are the boundaries or constraints we assign to events, and reframing involves looking at things from different perspectives to generate alternative views, conclusions, and meanings. By reframing, one can change the meaning attached to a situation and, consequently, one's response, feelings, and actions. According to Bandler and Grinder (1982), reframing is a way to alter the frame of perception to change the meaning of events. It allows for the distinction between behaviour and intention, focusing on what one is trying to achieve rather than just the behaviour itself. Reframing can be facilitated through questioning, as questions often carry assumptions about events. In the context of learning disabilities, reframing involves reinterpreting the experience in a more empowering manner to overcome the limitations associated with the disability. According to Gerber and Reiff (1996), reframing can be defined as a combination of decisions made to reinterpret the experience of learning disabilities positively, aiming to overcome the limitations associated with the disability.

2.2.4 Building rapport

As highlighted by Delbio and Ilankumaran (2018), building rapport is an essential aspect of language learning. In the Oxford Advanced Learner's Dictionary of Current English, rapport is defined by Hornby (1995, p. 963) as "a close relationship in which people understand each other very well." NLP proponents emphasize the role of English language teachers to establish rapport with their students to enhance the learning process. By creating a positive learning environment, communication gaps can be bridged, and effective interactions can be fostered. When a safe and supportive atmosphere is cultivated, learners' confidence is strengthened, motivating them to actively participate in assigned tasks and activities, which ultimately contribute to their educational success.

2.2.5 Modelling

According to Revell & Norman (1999), modelling is a fundamental principle of NLP which involves observing and mapping successful behaviours and strengths exhibited by others. The students may take the role of model of some great personalities. They can listen to the speech of the native speaker and try to imitate them. They are advised to concentrate on body gestures, lip

movements and the pronunciation of the native speaker. It is a practical approach and it is easy to adopt and improve fluency. It includes profiling behaviours, physiology, beliefs, values, internal states, and strategies. Through precise observation and empathy, individuals can learn from the experiences and perspectives of models. In NLP, modelling involves using precise observation techniques to carefully examine the actions of the individual being modelled. The goal is to empathize with their perspective and experience. In essence, modelling in NLP encompasses profiling various aspects, including behaviours, physiology, beliefs and values, internal states, and strategies. By observing and repeating the behaviours of models, individuals can acquire new responses and strengthen existing ones, even without prior experience.

2.3 NLP for language learning and teaching

Recent research has placed significant emphasis on exploring the application of NLP to enhance language learning effectiveness. NLP offers a range of techniques that can be valuable resources for both language teachers and learners. It provides a framework that supports language acquisition and presents innovative approaches to address the challenges of language learning. One key aspect of NLP coaching is motivating students to learn by establishing a connection between the value of learning and its significance (Kong & Farrell, 2012).

The human mind, as the most complicated organ, governs various cognitive processes such as thought, language, emotions and memory. It perceives the world through senses like hearing, vision, touch, movement, taste and smell. Understanding the mind and its neurological processes is essential for comprehending language learning. Exploring the mind and its neurophysiology contributes to a better understanding of language development. In classroom, improving language knowledge is a fundamental aspect of education. As Ullman (2004, p. 231) stated, "importantly if the systems underlying the target domains are well understood, they should yield clear predictions about language, based solely on non-language theories and data."

As highlighted by Delbio and Ilankumaran (2018), studying the mind and its structures assists in generating language-related data. NLP introduces a fresh perspective on second language acquisition offering valuable communication skills in EFL classrooms. It establishes an environment conducive to self-directed learning. Effective learning involves two components: implicit competence and explicit knowledge. Explicit knowledge entails understanding grammar rules, vocabulary and other language aspects which can be acquired through textual resources and other materials. Implicit competence, on the other hand, involves the spontaneous use of vocabulary and language structures acquired unconsciously with the aid of NLP techniques. These two components are crucial for learners to achieve proficiency and trainers should focus on helping trainees conceptualize and develop these segments.

NLP is being used in classrooms in different countries throughout the world. Teachers incorporate storytelling, role plays, skits and simulations based on NLP principles in English language teaching. They select techniques they find most effective and suitable for their teaching considering the content provided by NLP. Various NLP techniques such as anchoring, visualization, modelling, rapport building and reframing are employed individually or in combination to create innovative teaching methods. Targutay (2010) explored teachers' perceptions of NLP techniques in teaching a foreign language, highlighting the usefulness of certain techniques. Perceptual positioning is a method in NLP that allows to examine situations from a neutral perspective and can aid conflict resolution and improve students' English language

skills for personal interviews and negotiation. The following NLP techniques contribute to improve verbal and non-verbal communication skills:

2.4 PREVIOUS STUDIES

Research has shown that NLP is a powerful tool that can have a significant impact on the personal and educational lives of both teachers and learners. It has the potential to enhance overall quality of life, promote positive attitudes, provide support for addressing psychological challenges, facilitate better decision-making, improve communication skills, and foster language learning. Within the context of English language teaching, NLP techniques have been explored in previous studies to enhance language learning and teaching skills.

Pourbahreini (2015) investigated the impact of NLP on the grammatical knowledge of EFL students. The study focused on passive sentences and involved 60 participants. After administering tests and ensuring participant homogeneity, an intervention program using NLP techniques like anchoring and role-play was implemented. Visual learners were taught in an engaging manner, practicing passive and active voices in pairs. The results showed a significant improvement in the experimental group's post-test scores compared to the pre-test. The researcher concluded that NLP can be an effective strategy for enhancing grammatical accuracy in English language learning.

Alamdar and Karbalaei (2015) explored the usefulness of NLP in increasing the self-esteem of Iranian EFL Learners. The study compared a control group taught using traditional methods with an experimental group that received training on NLP strategies alongside traditional methods. NLP techniques, such as connecting culture and language through stories, were employed to build self-esteem. The results indicated that NLP was effective in increasing learners' self-esteem by changing their limiting beliefs and fostering a positive mindset towards English language learning.

Marashi and Abedi (2017) investigated the impact of NLP on teachers' reflective teaching. The study introduced NLP techniques to Iranian English teachers and assessed their experiences and perceptions after employing these techniques in their classrooms. The findings revealed a significant effect of NLP on teachers' reflective teaching practices, highlighting the potential of NLP to enhance English teaching effectiveness.

Farahani (2018) examined the effect of NLP on the reading comprehension of English for Specific Purposes (ESP) of Iranian undergraduate EFL students. NLP strategies were implemented in the experimental group, including teaching according to students' specific learning styles. The results demonstrated a significant improvement in the experimental group's reading comprehension, suggesting that NLP techniques can effectively enhance this essential skill for ESP students.

Although the mentioned studies examined the effects of NLP techniques on various aspects of language learning and teaching, none specifically focused on the effectiveness of NLP techniques in minimizing students' EFL oral disfluencies. To address this gap, the present study aims to investigate the effects of NLP techniques on EFL learners' oral fluency at the Faculty of Education-Tooralbaha, University of Lahej.

3. RESEARCH METHODOLOGY

This quantitative research aims to examine the effectiveness of NLP techniques in reducing students' EFL oral disfluencies. Therefore, the methodology section of the study focuses on describing the design of the study, the sample of the study, the experiment of the study and the data collection instrument.

3.1 Design of the study

Scientifically, the choice of research methods is determined by various factors, such as the study's objectives, hypotheses, and the nature of the data to be gathered. In this study, the researcher has used a quantitative experimental approach to examine the research hypotheses and to achieve its objective.

3.2 Sample of the study

The sample of this study was 40 students enrolled in the second level in the Department of English at the Faculty of Education-Tooralbaha, University of Lahej. The selection procedure ensured that the students were grouped homogeneously according to their previous academic oral performance. The sample was divided into two groups: an experimental group consisting of 20 students and a control group comprising another 20 students.

3.3 The experiment of the study

Over a period of two months, the study focused on applying eight specific NLP techniques. These techniques comprised NLP presuppositions, representational systems, eyes accessing cues, rapport, anchoring, reframing and modelling. The training program was structured to include a total of 16 sessions with each technique being addressed in two sessions a week. Each training session had a duration of approximately 90 minutes.

3.4 Data collection instrument

In this quantitative research, the researcher employed a single instrument to evaluate the EFL oral disfluency of the participants. This instrument was a pre- and post-oral fluency test that was administered to both the experimental and control groups before and after the NLP experiment.

Oral disfluency is commonly measured by the occurrence of speech disruptions such as pauses, repetitions, hesitations, etc. Thornbury (2008, p. 7) suggests several aspects for assessing changes in fluency, including speech rate, pauses, the use of repeats and the length of uninterrupted speech. Lennon (1990) in Hughes (2002, p. 113) identifies three key factors influencing judgments of fluency: (1) Words per minute (excluding repetitions), (2) Filled pauses, and (3) Percentage of 'thought units' followed by a pause.

This study employed a comparable technique to assess students' EFL oral disfluency. The chosen topic, "girls' education in Yemen," encompassing personal, public, environmental, and social issues was orally presented by students from both groups as pre and post-tests. Students were given ten minutes to prepare their monologue speech and expand on vocabulary items with limited preparation time. Subsequently, they were given two minutes each and their oral performances were recorded and then evaluated. During the evaluation process, the variable of disfluencies per minute (DPM) which represents the frequency of pauses and repetitions was

considered. To facilitate this, the researcher established the necessary aspects for measuring oral disfluency using a rubric evaluation table adapted from Cross (2005, pp. 1-4).

Table 1: The measurement aspects of oral disfluencies.

Student	**TWA**	**TST**	**TDT** (In seconds)		**DPM** (In seconds)
			Pauses	Repeats	
St. 1					
St. 2					
St. 3					

TWA (Total Words Attempted): The total number of words spoken during the monologue.

TST (Total Speaking Time): The overall duration of the speech measured in seconds.

TDT (Total Disfluent Time): The total duration of pauses and repetitions, measured in seconds.

DPM (Disfluent Speech Rate/Disfluencies per Minute): DPM is calculated by dividing the total disfluent time (TDT) by the total speaking time attempted, multiplied by 60. DPM = (TDT / TST) x 60. These measurements were intended to represent students' oral disfluency regardless of grammatical structure, pronunciation, and other language features.

The pre-test was administered to both the experimental and control groups one week before the experiment exactly on February 12th and 13th, 2022. The post-test was conducted on May 17th and 18th, 2022 for both groups. Students were individually tested and their speaking was recorded. Before the task, students were instructed to speak audibly for clear recording, relax and avoid tension while speaking. Moreover, they were required to quickly plan their response by thinking of relevant words and expressions and refraining from using Arabic in their speech.

4. DATA ANALYSIS AND INTERPRETATION

The recorded monologues facilitated the evaluation and analysis of disfluent speech rate in terms of DPM indicating frequent pauses and repetitions. The scores of the pre-test and the post-test for the two groups are provided in Tables 2 - 5 below.

Pre and post-test scores of both groups

Table 2: Pre-test results of the experimental group

St. No.	TWA	TST	TDT (In seconds)		DPM (In seconds)
			Pauses	Repeats	
St. 1	343	91	4	6	7
St. 2	37	41	9	8	25
St. 3	43	48	13	14	34
St. 4	121	120	16	5	11
St. 5	46	75	22	6	22
St. 6	130	98	11	14	15
St. 7	70	57	8	10	19
St. 8	255	100	10	5	9
St. 9	50	120	18	11	15
St. 10	65	58	6	12	19
St. 11	261	80	4	5	7
St. 12	138	120	26	18	22
St. 13	68	120	22	16	19
St. 14	154	100	18	12	18
St. 15	51	60	13	9	22
St. 16	25	56	26	16	45
St. 17	140	120	18	12	15
St. 18	113	120	22	25	23
St. 19	70	120	25	32	29
St. 20	52	55	14	11	27
Total	2232	1759	305	247	403
Average	111.6	87.95	15.25	12.35	20.15

Table 3: Post-test results of the experimental group

St. No.	TWA	TST	TDT (In seconds)		DPM (In seconds)
			Pauses	Repeats	
St. 1	355	80	0	0	0
St. 2	23	20	4	6	30
St. 3	56	68	8	13	19
St. 4	198	120	3	3	3
St. 5	58	56	2	3	5
St. 6	80	74	4	5	7
St. 7	98	60	1	3	4
St. 8	308	106	2	2	2
St. 9	45	48	6	4	12
St. 10	70	53	7	4	12
St. 11	372	110	1	1	2
St. 12	175	120	7	12	9
St. 13	100	115	8	12	10
St. 14	178	98	9	12	12
St. 15	75	42	2	3	7
St. 16	70	40	1	3	6
St. 17	183	120	8	6	7
St. 18	125	112	12	8	11
St. 19	196	120	11	4	8
St. 20	68	90	9	7	11
Total	2833	1652	105	111	177
Average	141.65	82.6	5.25	5.55	8.85

Table 4: Pre-test results of the control group

St. No.	TWA	TST	TDT (In seconds)		DPM (In seconds)
			Pauses	Repeats	
St. 1	25	52	8	14	25
St. 2	80	70	18	5	20
St. 3	203	110	15	16	17
St. 4	191	120	20	5	12
St. 5	27	55	16	5	23
St. 6	37	35	8	10	31
St. 7	70	80	19	21	30
St. 8	40	58	13	14	28
St. 9	35	68	12	4	14
St. 10	46	78	16	9	19
St. 11	29	55	19	5	26
St. 12	95	50	3	1	5
St. 13	46	70	15	7	19
St. 14	104	50	8	2	12
St. 15	62	70	8	25	28
St. 16	235	120	12	4	8
St. 17	75	106	20	19	22
St. 18	37	50	9	12	25
St. 19	87	80	12	13	19
St. 20	253	120	6	2	4
Total	1777	1497	257	193	387
Average	88.85	74.85	12.85	9.65	19.35

Table 5: Post-test results of the control group

St. No.	TWA	TST	TDT (In seconds)		DPM (In seconds)
			Pauses	Repeats	
St. 1	60	80	16	15	23
St. 2	84	60	15	3	18
St. 3	211	120	17	18	17
St. 4	188	120	17	6	11
St. 5	44	110	19	9	15
St. 6	72	75	12	12	19
St. 7	73	80	19	23	32
St. 8	63	80	11	15	20
St. 9	29	75	14	9	18
St. 10	81	105	29	8	21
St. 11	38	85	24	9	23
St. 12	130	70	11	4	13
St. 13	42	68	15	5	18
St. 14	170	94	9	8	11
St. 15	56	56	11	12	25
St. 16	248	120	14	8	11
St. 17	66	70	16	13	25
St. 18	55	80	13	12	19
St. 19	110	90	20	16	24
St. 20	257	120	4	2	3
Total	2077	1758	306	207	366
Average	103.85	87.9	15.3	10.35	18.3

The data obtained from the pre and post speaking fluency test were analysed using statistical methods with a particular emphasis on the variable of students' DPM which includes pauses and repetitions. The researcher used SPSS statistical procedures specifically the nonparametric test namely Mann-Whitney U test for independent samples and the Wilcoxon Matched-Pairs Signed Ranks Test to examine and interpret the data. The statistical analysis of DPM is outlined below.

To examine the study hypotheses and to control the variable before implementing NLP techniques, the pre-test results were analysed statistically to determine if there were significant differences in EFL oral DPM between the experimental and control groups. The Mann-Whitney U test, known as a nonparametric alternative to the independent samples t-test, was used. The results are shown in Table 6 below.

Table 6: Mann-Whitney U values of the pre-test comparing the two groups' mean scores in oral DPM

Variable	Sample	Sample size	Average ranks	Total ranks	U. value	Significance level
DPM	Experimental group	20	20.28	405.50	195.5	0.90
	Control group	20	20.73	414.50		

As indicated in Table 6, the calculated U value for the DPM in the pre-test was 195.5 with a significance level of 0.90. This result is not statistically significant at the 0.05 level of significance. Therefore, there are no statistically significant differences between the scores of the experimental and control groups' oral disfluency in terms of DPM in the pre-test. This indicates that the two groups were relatively homogenous in their overall EFL oral disfluency.

The research hypotheses involved comparing the pre-test and post-test scores within each group separately considering the variable of DPM. These hypotheses will be examined and verified in the following sections to evaluate the effectiveness of the NLP techniques on students' oral disfluency.

4.1 Examining the first hypothesis

There are statistically significant differences at the significance level of (0.05) between the mean scores of the pre-test and the post test of the experimental group in EFL oral disfluencies per minute (DPM) in favour of the post-test.

To evaluate the validity of this hypothesis, the Wilcoxon Matched-Pairs Signed Ranks Test was employed to compare the average scores of the experimental group in the pre-test and post-test regarding oral DPM. Prior to conducting the Wilcoxon test, the mean values and standard deviations for each of the two measurements were calculated and presented in Table 7.

Table 7: Means and standard deviations for pre/post-tests of the experimental group in oral DPM.

Variable	**Pre-test**		**Post-test**		**Difference**
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation	
DPM	20.15	9.230	8.85	6.706	11.3

The data presented in the Table 7 demonstrate that the mean values and standard deviations of students' oral DPM in the post-test are lower than those in the pre-test, with a difference of 11.3.

This suggests that there are noticeable discrepancies between the scores of the two measurements. Furthermore, to determine whether these differences in the mean scores are statistically significant or not, the Wilcoxon Matched-Pairs Signed Ranks Test was conducted. The results are displayed in Table 8 below.

Variable	Test	Rank difference trend	Sample size	Total of ranks	Ranks average	(Z) values	Significance level	Effect size
DPM	Pre/post	Positive	19	207.50	10.92	-3.831	0.00	0.85
		Negative	1	2.50	2.50			
		Neutral	0	0	0			

Table 8: The significance of differences between the mean scores of the pre and post-tests of the experimental group in oral DPM

As shown in Table 8, the calculated value of (Z) for students' oral DPM is -3.831 with a significance level of 0.00. This value is statistically significant at the significance level of 0.05. Additionally, the effectiveness of the NLP experiment on students' oral DPM was assessed by using an effect measurement equation in conjunction with the Wilcoxon test. The equation is as follows:

$$r = \frac{z}{\sqrt{n}}$$

(r) = The effect size.
(z) = The absolute statistic value according to (Wilcoxon) test.
(n) = The number of pairs of degrees.
The value of (r) is interpreted as follows:
• If it is equal to or less than (0.39), it indicates a weak relationship or a weak effect size.
• From (0.40) to (0.69), it indicates a medium relationship or medium effect size.
• From (0.70) to (0.89), it indicates a strong relationship or a strong effect size.
• If it is equal to or more than (0.90), it indicates a very strong relationship or a very strong effect size.

By substituting the effect equation, the effect size grasped 0.85 for the total score of oral DPM. Depending on such an interpretation, it is signified that the effect of the treatment on reducing students' oral DPM is very strong as their oral DPM has been visibly decreased. This result accepted and validated the first research hypothesis which argued that there are statistically significant differences at the significance level of 0.05 between the mean scores of the pre-test and the post-test of the experimental group in EFL oral DPM in favour of the post-test.

4.2 Examining the second hypothesis

There are no statistically significant differences at the significance level of (0.05) between the mean scores of the pre-test and the post-test of the control group in EFL oral disfluencies per minute DPM.

Like the first hypothesis, the mean values and standard deviations were utilized to evaluate the validity of the second hypothesis. Thus, the pre-test and post-test scores of the control group were analysed and the findings are presented in Table 9 below.

Table 9: Means and standard deviations of DPM in the pre/post-test of the control group

Variable	Pre-test measurement		Post-test measurement		Difference
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation	
DPM	19.35	8.080	18.03	6.490	1.05

The above table illustrates the calculation of differences in the mean and standard deviation of pre-test and post-test scores in the control group for students' oral DPM. The calculated difference between the two means is reported as 1.05. The Wilcoxon Matched-Pairs Signed Ranks Test was used to examine whether the mean scores of the two tests were statistically significant. The results of the statistical analysis are reflected in Table 10.

Table 10: The significance of the differences between the mean scores of the pre-test and post-test of the control group in oral DPM

Variable	Test	Rank difference trend	Sample size	Total of ranks	Ranks average	(Z) values	Significance level	Effect size
DPM	Pre/post	Positive	7	78.00	11.14	-0.686	0.492	0.10
		Negative	12	112.00	9.33			
		Neutral	1	0	0			

Table 10 provides information on the (Z) value obtained for students' oral DPM in the control group across the two measurements. The calculated (Z) value is -0.686 with a significance level of 0.492. As indicated, this value is considered insignificant at the 0.05 level of significance. Moreover, the effect size was calculated using the supplementary equation coupled with the Wilcoxon test resulting in a value of 0.10.

Based on the interpretation of (r) provided earlier, a value equal to or less than 0.39 suggests a weak relationship or effect size. This indicates that there was a minimal decrease in oral DPM among the control group students in the post-test as they did not receive training sessions on the program based on NLP techniques. However, the slight decrease in oral DPM observed in the control group can be attributed to the speaking course provided to both the control and experimental groups in the English department.

Considering all the above-mentioned results, the second research hypothesis which hypothesised that there are no statistically significant differences at the significance level of 0.05 between the mean scores of the pre-test and the post-test of the control group in EFL oral DPM has been significantly accepted.

5. CONCLUSION

This study illuminates the effectiveness of NLP techniques in reducing EFL oral disfluencies among students at the Faculty of Education-Tooralbaha, University of Lahej. To accomplish the objective of the study, an initial assessment was carried out to evaluate the level of oral disfluencies in both the experimental and control groups. Afterward, the experimental group

underwent a training program utilizing NLP techniques. Following the training, a final assessment was conducted to measure the oral disfluencies in both groups and gather the required data. The findings demonstrate that the implementation of NLP techniques leads to a significant reduction in students' EFL oral disfluencies. They suggest that NLP techniques serve as motivating tools that reinforce students' confidence in EFL learning. Moreover, the program effectively reduces students' psychological fears of performing EFL oral tasks such as self-esteem, anxiety, and hesitation. The results underscore the innovative and effective nature of NLP techniques as a strategy for developing EFL teaching and learning. The results also indicate that incorporating NLP techniques can make language learning more engaging and enjoyable. They do not only improve students' communication but also develop interpersonal skills have the potential to hinder psychological difficulties. These results contribute to the advancement of EFL learning by informing language teaching practices and developing effective and engaging language programs.

All in all, this study provides a comprehensive explanation of how the results support and validate the research hypotheses, demonstrating the potential of NLP techniques to significantly reduce students' oral disfluencies. The study's findings underscore the importance of incorporating innovative approaches such as NLP in language education, ultimately contributing to the improvement of EFL learning outcomes.

6. RECOMMENDATIONS

Based on the research findings, several recommendations are proposed to enhance students' EFL oral fluency through the reduction of EFL oral disfluencies by employing effective instruction and the integration of NLP techniques. These recommendations involve the collaboration of EFL teachers, students, and relevant authorities such as the Faculty of Education-Tooralbaha, and the University of Lahej. These are:

1. A dedicated course on NLP techniques in the teacher training program needs to be included and offered by the Department of English in the Faculty of Education-Tooralbaha and other faculties of education at the University of Lahej. This course would equip language teachers with the necessary knowledge and skills to effectively apply NLP techniques in their teaching practices.

2. EFL teachers should consider incorporating NLP techniques in their instructional methods to improve students' learning outcomes. NLP techniques can enhance students' communication skills and boost their confidence leading to a reduction in their EFL oral disfluencies.

3. NLP techniques should be integrated as supplementary tools in EFL teaching programs to enhance students' learning experiences. NLP techniques can be employed to create interactive and engaging classroom environments that promote effective communication and learning.

4. Teachers should be creative in their teaching approaches and utilize various resources to facilitate learning and foster student autonomy. Building rapport with students, showing care, and addressing their individual needs can also contribute to a positive and supportive learning environment.

5. Programs based on NLP techniques can be employed not only to reduce oral disfluencies but also to enhance other EFL skills such as listening, reading and writing. NLP techniques can be used to improve students' comprehension and expressive abilities in English.

6. To facilitate access to NLP training, it is recommended to organize training sessions for students before or alongside their enrollment in the EFL courses at faculties of education to prepare learners psychologically and enhance their skills of the target language.

7. It is recommended to investigate the effectiveness of NLP techniques in supporting language learning for students with different learning styles and needs, including those with learning disabilities or special needs to assess how NLP techniques can be tailored to accommodate diverse learners and enhance their language acquisition process.

8. It is recommended to explore the effectiveness of NLP techniques in reducing students' self-esteem, fear, shyness, and anxiety and how NLP techniques can positively influence these affective psychological factors and improve the overall learning experience for EFL students.

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