Categoría: Education, Teaching, Learning and Assessment.

ORIGINAL

Unlocking language learning potential: Nlp learning styles for deaf and hard-of-hearing undergraduates

Desbloquear el potencial de aprendizaje de idiomas: estilos de aprendizaje de Pnl para estudiantes sordos y con dificultad de audición

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ABSTRACT

Introduction: the quest for effective education for hard of hearing (HOH) and deaf undergraduate students has led to a focus on improving their language learning capabilities. This study explores the impact of Neuro-Linguistic Programming (NLP) on enhancing English language skills and confidence among students with learning difficulties. By addressing the specific needs of these students, the study aims to evaluate the effectiveness of NLP-based teaching strategies compared to conventional methods.
Methods: a quasi-experimental research design was utilized, involving two experimental groups: one receiving NLP-based education and the other following traditional language learning methods. Both groups were assessed using pre-test and post-test scores to measure language competency and confidence levels.
Results: the results demonstrated a significant increase in language competency and confidence among students in the NLP-based education group. The experimental group showed marked improvement in English language skills and confidence, validating the efficacy of NLP teaching strategies.
Conclusion: this study concludes that NLP-based teaching methods significantly enhance language skills and confidence in HOH and deaf undergraduate students. Future research should explore further applications of NLP in educational settings to support students with learning difficulties.

Key Words: Neuro-Linguistic Programming; Language Learning; Cognitive Processes; Deaf and Hard-of-Hearing.

RESUMEN

Introducción: la búsqueda de una educación eficaz para estudiantes universitarios sordos y con problemas de audición ha llevado a centrarse en mejorar sus capacidades de aprendizaje de idiomas. Este estudio explora el impacto de la Programación Neurolingüística (PNL) en la mejora de las habilidades del idioma inglés y la confianza entre los estudiantes con dificultades de aprendizaje. Al abordar las necesidades específicas de estos estudiantes, el estudio tiene como objetivo evaluar la efectividad de las estrategias de enseñanza basadas en PNL en comparación con los métodos convencionales.
Métodos: se utilizó un diseño de investigación cuasi-experimental, que involucró dos grupos experimentales: uno que recibió educación basada en PNL y el otro que siguió métodos tradicionales de aprendizaje de idiomas. Ambos grupos fueron evaluados mediante puntuaciones previas y posteriores a la prueba para medir la competencia lingüística y los niveles de confianza.

Resultados: los resultados demostraron un aumento significativo en la competencia lingüística y la confianza entre los estudiantes del grupo educativo basado en PNL. El grupo experimental mostró una marcada mejora en las habilidades y la confianza en el idioma inglés, lo que valida la eficacia de las estrategias de enseñanza de la PNL.

Conclusión: este estudio concluye que los métodos de enseñanza basados en PNL mejoran significativamente las habilidades lingüísticas y la confianza en estudiantes universitarios HOH y sordos. Las investigaciones futuras deberían explorar más aplicaciones de la PNL en entornos educativos para ayudar a los estudiantes con dificultades de aprendizaje.

Palabras clave: Programación Neurolingüística; Aprendizaje de Idiomas; Procesos Cognitivos; Personas Sordas y Con Problemas de Audición.

INTRODUCTION

In the early 1970s, Neuro-linguistic programming (**NLP**) was shaped by John Grinder a prominent philological professor and Richard Bandler a scientific expert with a contextual in psychology. NLP requires a vivid range of techniques, patterns and policies aimed at instructive communication, inspiring growth development and transformative adjustment. The creators Grinder and Bandler explored the diverse belief systems and individual experiences who demonstrated exceptional behaviour. Their goal was to uncover the underlying structures of such excellence. They suggested that each behaviour consists of different structures, and that by analysing and emulating such outstanding patterns, similar results can be obtained. Another aspect in Grinder and Bandler's theory is the relationship that exists between neurological subsystems (N), language (L) and a learned behaviour map (P).

NLP is a set of methods that was developed for the purpose of communication and self-development founded on certain theories concerning mind and behaviour. It incorporates the individuals as wholes because it takes both the mental and physical aspects of a person and organizes them into a system of interaction. This framework provides a logical link between three main domains namely the Neuro (nervous system processes), Linguistic (language aspects) and Programming (behavioural strategies). 'Neuro' follows the paper's focus on the exploration of the connection between the physical and the mental and how the sensory experience forms the basis of the perception of reality. 'Linguistics' deals with how people reason and interact with one another, and improves the neural networks that enable the organs of our body; auditory, olfactory, visual, gustatory and kinesthetics to perceive and analyse information. Thus, programming is the capacity to arrange thoughts and goals to achieve the intended objectives. NLP is very applied and it is useful in understanding how learners' reason because it gives an insight of their models and maps. With the help of NLP, the language used by such students is analysed and transformed in order to turn thoughts and actions into educational goals.

As stated by Bandler and Andreas,[1] knowledges are handled and stored in an accurate area of the brain, each one of them corresponding to a physical place. Within the context of NLP, a crucial skill involves understanding individuals' cognitive processes. It's suggested that each person has a preferred method of acquiring knowledge which is essential to uncover for optimizing learning outcomes.[2] Given NLP focus on accommodating diverse learning styles, educators should have a thorough understanding of how students process their information through their linguistic, physical, cognitive and behavioural domains. As Miller,[3] suggests teachers should adjust their communication styles to match those of the learners, promoting more effective and productive interactions. This thought enables educators to inspire opinions and behaviours towards more favourable results positively. Bandler and Grinder, the pioneers of NLP, describe it as the 'psychology of merit' a blend of art and science that leads to exceptional performance. They alleged that brilliance is attainable by everyone, regardless of their past or present situations. In their view, anyone can realize brilliance by following the same principles. Walter and Bayat further describe NLP as a way for modelling excellence across various domains.

The core motivation behind the NLP was to discover what constitutes excellence. Advocates of NLP proclaim that brilliance is not an intrinsic talent but a skill it can be acquired. They accentuate that it's an accessible trait and that anyone can grow, provided they free themselves from chosen limitations and discover a range of potentials. NLP is acknowledged as an effective tool utilized in the domain of teaching, second or foreign languages, help the learners in achieving high proficiency levels. It suggests that by understanding the process and consistently applying it, can lead to the same outcome be replicated. Conversely, modifying a process is seen as a change in behaviour, while repeating the process it is termed as modelling. This concept of modelling is pertinent in various aspects of life, particularly within educational contexts.

In their influential effort, Revell and Norman [4]propose an inclusive set of 13 foundational ideologies that must form the fundamental of a teacher's credence system, intensely impact their tactic of teaching. These ideologies probe into the complex connection between mind and body, stressing their joined nature as vital

components of an incorporated system, where each effects the other reciprocally. The authors intensely observe the sole nature of individual mental frameworks, noting that these hypotheses may not always imitate objective reality accurately. They recommend that catastrophe, should be seen not as final but as response, a temporary hindrance that present an occasion for future success. The authors also proclaim that the resources necessary to realize goals are integrally within each individual, promoting a sense of self-reliance.

According to Revell and Norman communication is rounded, encircling both verbal and non-verbal forms, rejecting the concept that it can be confined to a single mode. The playwrights state that the novel spirit of communication lies in the reaction it produces, stress its reciprocal nature. They promote for teaching from archetypal behaviours as a lane to achieve excellence, further stress the stimulus role of role models. Finally, they stress the serious importance of elasticity within any system, on behalf of its role as an active and malleable component. Overall, these ideologies suggest an inclusive agenda for decisive a teacher's beliefs and instructional methods, promoting an all-inclusive approach to education. NLP serves as a respected tool in language teaching, prominence continuous learning and possible for positive personal growth. Their ideologies underscore the moment of understanding the complexities of human reasoning and communication workings effective teaching practices.

Pillars of Neuro-Linguistic Programming (pending)
McDermott and O'Connor [5]and Revell and Norman eloquent the four basic principles based on the foundation of NLP.

1. *Establishing Rapport*: Rapport is characterized for its close and harmonious connection where the individuals understand and appreciate their each other's emotions and thoughts. It is a keystone for effective communication. It builds a comfort environment for understanding the process of teaching. Building rapports involve in behaviour such as finding commonalities, mirroring students and minimising differences. This subconscious empathy between individuals is important. According to the NLP strategies suggested by Silva,[6] they are essential for building rapport, as long as leading to a stronger student-teacher relationship. This nearness grounded on trust and sensitivity, promote a supportive learning environment resultant in better achievement and effectiveness within a community.

2. *Outcome Thinking*: This element focuses on the importance of defining clear objectives. It also suggests the need of understanding the necessity for the effective analysis of objectives and the probability to success rate to uphold achievement. To accomplish this, individuals are advised to eventually analyse their goals by thorough concentration, passionately visualize their accomplishments, carefully plan each step and finally pursue the envisioned result by intentional actions.

3. *Sensory Awareness*: This area of principles enhances the sensory acuity by increasing the awareness to better understand the environments for adapting their actions to accomplish the goals. Thus, the sensory awareness plays a major role in NLP, since it enables individuals to recognize and utilize the most effective strategies for implementing their goals.

4. *Behavioural Flexibility*: The key principle is adaptability, by pointing more options for someone's action to improve the success rate. NLP underscores its flexible behaviour, which can be done by adjusting the methods as desired by the individuals. The key tenets of NLP deals with the great flexibility, and adaptability towards various situations.

In effect, these four pillars of NLP offer an inclusive framework for effective communication, goal-setting, sensory awareness, and adaptability. They serve as guiding principles for individuals seeking personal and professional growth.

NLP in English language teaching
Language educators have recently begun to take notice of NLP. Although some of the studies have explored how NLP influences various teaching methods, they remain relatively limited. Most of these studies discuss the implementation and effectiveness of NLP in education.

Richards and Rodgers[7] were among the first to combine NLP into the coaching of English as a second language instruction. As per Milrood,[8] this approach seeks to improve how well the learners achieve. Milrood organized workshops for educators to enhance their knowledge of how NLP can be applied in classroom settings. The workshop involves 16 secondary teachers for English, all teachers are having a minimum of five years of teaching experience. This experience focuses on developing skills such as building a rapport with students, encouraging motivated responses through effective guidance, and understanding and addressing their emotional states and various learning styles. The workshop underscored the crucial importance of trust between students and teachers during the learning process. It is important to recognize that interactions in the classroom can either foster a sense of achievement or provoke feelings of inadequacy among learners.

In a study by Dragovic Tatjana[9] titled 'Teachers' Professional Identity - A study on the self-reflection of professional identity and practices among teachers in a Slovenian primary school', a segment of teachers

participated in NLP-based continuous professional development (CPD). This initiative involved two separate groups of teachers. The first group of educators comprised of fourteen in number who had no prior NLP training and were categorized as the experimental group. The second group included sixteen teachers who were undergoing NLP training and were designated as the control group. The findings reveal that the educators who had not yet received the NLP training utilized more terms with positive, encouraging, or constructive connotations. Mutually, educators who did not receive the NLP training tended to use greater frequency of words with more negative implication in their communication.

Richard Churches John West-Burnham[10] challenged the traditional views on language which is taught by using the application of NLP. Their findings showed that both the students and teachers experienced a notable boost in confidence within the classroom environment when employing this methodology. This area of study effectively disproved the previously existing assumptions about the language education, primarily because learners improved their ability to express their thoughts and emotions. Also, the participants' motivation increased due to the application of NLP techniques to the learning process. The research also stressed on the practical implementation of the NLP approaches, and the usefulness of the methods.

Zargham Ghabanchi and Shirin Malekzadeh[11] observed thirty-two classes in their area of study. The investigation encompassed three distinct phases: pre-reading, in-reading, and post-reading. The study employed Bloom's Taxonomy to assess the cognitive states of learners, with a specific focus on understanding how teachers' contentment or dissatisfaction influences the proficiency levels of the learners. The primary objective was to address pivotal cognitive domains that hold responsibility during the educational process. Particular emphasis was placed on the choice of action verbs used by instructors, with the intention of understanding their influence on language learners.

Pishghadam et al.[12] highlights the importance of communication in educational settings by developing and validating an NLP scale specifically for EFL (English as a Foreign Language) beginners. The main objective of the study was to create and validate a questionnaire concentrated on NLP, which could serve as a model for upcoming studies. The area of the research consists of two different phases, including 175 EFL teachers at the prime stage and 93 in the subsequent phase. The use of the NLP techniques enhances the experiences of student's opportunities for learning effectively. The questionnaire holds substantial importance as it contributes to the establishment of a reliable NLP scale, which holds great utility for NLP scholars and practitioners alike.

The findings of the study further confirm the potential of combining the principles of NLP within the sovereign of education. This emphasizes that NLP, as a fundamental concept in humanistic psychology, is well suited in developing effective communication abilities. A particular study which was conducted by Khabiri and Farahani,[13] explored the impact of both NLP alone in combination with critical thinking on the performance of EFL learners, specifically pointing on awareness of reading and retaining vocabulary. While the effects of critical thinking in retaining the language and NLP were less, also it was found that the abilities in critical thinking makes visible changes in the mental process of individuals. Another study presented by Ramganesh et al.[14] involves 45 educators in India, aimed in evaluating their proficiency for utilizing the NLP methodologies. The study placed particular emphasis on identifying unique characteristics of individual relevant for educators. The study underscored the importance of establishing rapport, as well as utilising cognitive and emotional stimuli, along with employing effective elicitation techniques, especially in educational settings that require careful custodial attention.

All the research endeavours aimed to validate the presence and importance of NLP within different aspects of English language instruction. Nevertheless, owing to a limited comprehension of NLP as a language teaching approach and the integration of additional neurological elements, NLP has yet to gain recognition as a widely explored domain globally. Swan[15] contends that educators often resist exposure to innovative practices in English language instruction. Embracing new methodologies proves to be a challenge, and they tend to persist in employing traditional and intuitively derived techniques.

Significance of NLP for learners

NLP is regarded a powerful tool that significantly impacts both the personal and academic features of the lives of the learners. It can improve the overall quality of life provide valuable support for psychological issues, promote positive attitudes, facilitate successful interactions, aid in making sound decisions and enhance language acquisition. García and Tamayo,[16] highlights that language learners can utilize NLP as an emotionally purging method to enhance their performance and advance toward their goals. One of the main advantages of NLP is its significant contributions to the field of English language teaching.

Salehi and Karimi[17] provided a study to analyse the effect of NLP, especially using the pattern of swish on language acquisition in the learners of English. Altogether, after 12 sessions of treatment on applying the swish pattern, the observers noted that the participants' vocabulary proficiency had improved significantly. They argue that NLP can be implemented irrespective of the learning modality hence can be useful in teaching English. According to Bandler and Grinder, the authors of NLP, the swish pattern involves the elimination of

undesired behaviours through changing one's way of thinking.

This method involves imaging a prompt which is associated with the undesired conduct. By doing this, the brain is redirected by the swish pattern, controlling the behaviour to obtain a more needed outcome. In this investigation, the researcher implemented swishing elements, including introducing the strategy, practice, and providing feedback. The process consisting of steps includes identifying the background, recognizing the prompt, forming a mental image of the prompt, and finally applying the swish and also examining its efficiency. For example, when teaching the word 'habit', the teacher asks the students to visualize a smoker's hands that is engaged in negative behaviour. After that the students are asked to repeat both 'habit' and 'bad habit'. However, participants engaged in intellectual exercise where they visualize a lively, health-conscious person and verbalize the terms 'habit' and 'good habit'. Then, they transition mentally from picturing a smoker to visualizing a vigorous individual (utilizing a swish pattern) while articulating the word 'habit'. Students are fortified to share their private examples of positive and negative habits, making sentences using the term 'habit'. This process helps the learners to form an image of the results of a scenario in a precise way leading to an undesirable habit, emphasizing the need for avoid it. The practice of repetitions and mental imagery continues independently after each session and it is reviewed in subsequent meetings. After analysing the results of the post-test, the researcher concludes that the NLP technique is effective and a valuable method for enhancing vocabulary.

According to the findings by Alamdar and Karbalaei, NLP is a valuable tool for increasing the self-confidence of English language learners. Their study consists of four classes of selection, where traditional methods of teaching were used for controlling the group and also the experimental group receive a mix of NLP strategies and traditional approaches. The results from the area of study clearly demonstrate that NLP positively impacts the self-esteem of the learners. Alamdar and Karbalaei highlights that speaking, is one of the most challenging facts of learning English, it requires a great deal of confidence and motivation. Through the application of NLP, learners adopt better methods for effective learning, which in transform their limiting beliefs. This change in their viewpoint from "I cannot learn English" to "I can learn English." The observers in this study precisely craft stories that connect language and culture. These narratives impart life lessons aimed at bolstering self-esteem, and they incorporate summary activities following the reading or listening sessions. Moreover, the visualization method is a fundamental component of NLP, is employed. This technique is based on the principle that when the beginners visualize their aims, they increase their likelihood of accomplishing them. Consequently, students are bringing about to express their aims and participate in vision exercises to increase the power of memorising and recalling the information.

Farahani[18] conducted a study to assess how NLP techniques influenced the reading comprehension of students in English for Specific Purposes (ESP). Two cohesive groups, each comprising 30 participants, were chosen, with one assigned as the experimental group and the other as the control group. The NLP techniques[19] were applied to improve the reading abilities of the experimental group. After examining the results of the post-test with ANCOVA, it was clear that the implemented methods were highly effective in achieving the desired goals. The study employed ten passages taken from the reference book titled "Reading Science and Medicine in English." During one session, all eight chosen NLP techniques were elucidated for the experimental group. Additionally, the researcher clarified the process of setting objectives, identified different learning styles, explained how senses could be employed in language learning, and addressed the influence of emotions on the learning process.

Students were directed to use their preferred learning styles when reading the passages. Auditory learners for example, chose between vocalizing the text, using audio materials, or playing background music while reading. Tactic learners, on the other hand, incorporated hand movements and attempted to record the information. They also have the opinion to have short breaks, such as to increase their experience of learning or walking, or affianced in role-play activities directly related to the content of text. By helping the learners in understanding their specific sensory learning preferences for learning and guiding them in applying NLP methods modified to those preferences, the observers' findings end with the finding was that NLP methods significantly affect ESP students' reading command. This finding has an applied insinuation for English instructors aiming to improve their essential talent among their pupils.

In the study of Pourbahreini's[20] inspected how the effect of NLP impacts the structural proficiency of EFL (English as a Foreign Language) students. The study elaborates 60 selected students who suffered various examination to ensure participant consistency. An intercession program integrating NLP-based technologies was then executed. This program unified NLP tactics such as affixing, VAK (Visual-Auditory-Kinesthetic), and role-play. Visual learners engaged in instruction in an engaging manner, cooperating on passive and active voice workouts in pairs. The products notably verified a substantial incongruity between the pre-test and post-test scores of the experimental group. Consequently, the scholar's judgment was that NLP stands as an appreciated tool for both teachers and learners devoted to refining correct accuracy in the English language.

Research gap

The analysis identifies a study break in the limited survey and acknowledgement of NLP within the circumstantial of English language coaching for undergraduate students who are anguish from deafened and HOH. While leading on assessing the usefulness of NLP knowledge styles and coaching practices, along with their impact on self-possession levels, it be familiar with that NLP remains quite alternated and not widely espoused in teaching of language. This emphasizes the need for in-depth study and comprehension by understanding the potential benefits of NLP in verbal educations, particularly for deafened and HOH students. Moreover, there exist an opportunity to explore the principles of NLP, to analyse it with the outdated teaching methods for raising confidence and proficiency among students. Further research should examine the practical approaches for integrating NLP into verbal coaching for deafened and HOH scholars.

Significance of the study

The study presents the outstanding promises for improving facility of teaching for the current precise student demographic. By inspecting the aptitude of NLP learning procedures, its homilies a crucial necessity for personalized instructional tactics. This not only ratifies the depth but also equips these students with critical language aptitudes which was imperative for their proficient and hypothetical voyages. Besides, recognizing effective NLP-based teaching practices enables the teachers to improve their methods, hypothetically leading to more amiable and positive learning skills.

Moreover, evaluating the effect of NLP learning styles on confidence levels is crucial for gaining language. Increase in the confidence level not only impacts academic achievement but also increases self-confidence. The hypotheses of the study offer a clear method for quantitatively assessing the NLP techniques, theoretically directing the way for their integration into mainstream education. Essentially, this study has the potential to change language education by offering promoted approaches that increase the ability, confidence levels and teaching effectiveness thereby permitting this student population and endorsing universality in education.

RESEARCH OBJECTIVES

1. Evaluate how the NLP learning methods improve the skills in English language among the undergraduate students who are deaf and HOH.
2. To determine which NLP based learning approaches effectively support language learning in this particular student group.
3. To examine how the impact of NLP learning approaches influences the confidence levels of undergraduate students who are deaf and HOH in their English language skills.

Hypotheses of the study

H1: Significant enhancement in English language proficiency scores is expected among undergraduate deaf and HOH students who undergo NLP-based instruction, compared to those who receive conventional teaching.

H2: NLP-oriented coaching methods are hypothesized to improve language learning which will be more effectually than compared to conventional teaching methods for undergraduate deaf and HOH scholars.

H3: Undergraduate deaf and HOH students exposed to NLP learning styles are expected to exhibit greater levels of confidence in their English language abilities when compared to peers in conventional instruction settings.

METHOD

Sample selection and size

The study involved 50 undergraduate students who were recognized either as deaf or HOH. Contributors were nominated from diverse academic institutions and were arbitrarily allocated to either the control or experimental group. Preceding to start the study, all participants will be given with detailed data and asked to give their consent.

Experimental Design

In this learning, a quasi-experimental tactic will be used, offering two divergent groups: the control group, which will undergo outmoded language training and next the experimental group that takes training based on NLP learning styles. Earlier to the instructional phase, both groups will take a pre-test using a uniform English language proficiency valuation to create a baseline. After this, participants will be arbitrarily allotted to either the experimental or control group. The experimental group will then obtain instruction incorporating NLP methods, such as modelling, visualizations, and digital learning. Conversely, the control group will accept traditional language training using recognized teaching approaches. Following this instructional period, both the groups will join in a post-test using the same uniform language aptitude test to scale their aptitude levels. Moreover, applicants will complete an assurance survey to gauge their confidence in their English language

abilities. This inclusive design aims to provide a detailed estimation of the impression of NLP learning styles on assurance levels and language skill among the participants.

Data Analysis

The scrutiny of data amalgamated with two momentous tactics. Mostly, descriptive statistics tally activities like standard deviation and mean were active to offer a short-term summary of the scores of the post-test and pre-test for together the control and experimental groups.

This is permitted for a clear synopsis of the initial proficiency levels and succeeding progress. Secondly, inferential analysis was conducted through independent samples t-tests. This enabled a direct assessment between the scores of mean post-test and pre-test of the control and experimental groups, mainly in terms of language aptitude, thereby lecturing Hypotheses 1 and 2.

Furthermore, added independent sample t-test was hands-on to appraise and compare the guarantee levels between the two groups, efficaciously lecturing Hypothesis 3. These scrutinizes reciprocally provided a wide-ranging estimation of the effect of NLP erudition styles on verbal ability and confidence stages among the members.

Limitations of the study

The research could potentially face limitations due to the size of the participant pool, and the results may not be generalizable to all deaf and HOH students. Additionally, individual differences in learning abilities may impact the outcomes.

Expected Outcomes

It is anticipated that the experimental group will exhibit a notable enhancement in language proficiency in comparison to the control group. Furthermore, the experimental group is expected to exhibit greater levels of confidence in their English language abilities.

RESULTS

The table 1 provides demographic information about the participants in the study, including gender distribution, age range and mean, type of hearing impairment, and educational level.

Table 1. Demographic Statistics			
Characteristic	**Experimental Group (NLP-based)**	**Control Group (Conventional)**	**Total**
Total Participants	25	25	50
Gender			
- Male	12	14	26
- Female	13	11	24
Age (years)			
- Mean	21,5	21,8	21,6
- Range	19-24	20-25	19-25
Hearing Impairment Type			
- Deaf	14	13	27
- Hard-of-Hearing	11	12	23

The demographic shows, the study has a well-proportioned distribution of applicants across countless demographics. The total sample size entailed of 50, that fragmented equally between the control group (receiving conventional instruction) and the experimental group (receiving NLP-based instruction). There was a near even gender distribution, with to some extent more male at a number of 26 applicants than female applicants of a number 24.

The gender distribution was impartially even with 26 male applicants and 24 female applicants. The ages of applicants fluctuated from 19 to 25 years, with an average of about 21,6 years. This recommends that the study mainly involved a fairly homogeneous group of undergraduate scholars.

The study comprehended 27 aspirants with deafness and 23 aspirants who were considered as HOH certifying a well-adjusted portrayal of hearing losses. This miscellany allows for a systematized examination of the success of NLP-based education across different hearing delineations.

Descriptive Analysis of Pre-Test and Post-Test Scores

Table 2. Descriptive Analysis of Pre-Test and Post-Test Scores				
Group		Mean Pre-Test Score	Standard Deviation (Pre-Test)	Mean Post-Test Score	Standard Deviation (Post-Test)
Experimental Group (NLP-based)		60,5	8,2	75,8	7,5
Control Group (Conventional)		61,2	7,8	63,7	8,9

The descriptive investigation of the post-test and pre-test scores in table 2 provides precious visions into the recital of both the control and experimental groups in the area of study. In the experimental group, which established teaching based on NLP learning styles, applicants began with a 60,5 mean pre-test score, with 8,2 standard deviation. This specifies some inconsistency in the preliminary proficiency levels within the group. After the intercession, their mean post-test scores significantly enlarged to 75,8, with a minor standard deviation of 7,5. This prominent upgrading suggests that the NLP-based instruction had a positive bearing on the language expertise of the experimental group.

The control group, on the other side which established conventional language training, started with a little advanced mean pre-test score of 61,2, but with a comparable standard deviation of 7,8 linked to the experimental group. After the instructional period, their mean post-test scores only soberly increased to 63,7, with 8,9 standard deviation. While there was some enhancement, it was markedly less definite than that observed in the experimental group.

These discoveries suggest that the NLP-based instruction was predominantly effective in attractive the language proficiency of the experimental group. The minor standard deviation in the post-test scores directs a more unswerving improvement across participants in this group. In distinction, the control group, which followed predictable teaching means, showed a more uncertain increase in expertise levels with a relatively higher level of capriciousness.

The upshots of the graphic scrutiny strongly sustenance the first hypothesis of the area of study, signifying an extensive upgrading in proficiency of English language scores among the deaf and HOH scholars who acknowledged instruction based on NLP learning styles, accompanying to those who received conformist instruction. This accentuates the probable benefits of conjugation the NLP practices into language instruction for this explicit scholar populace.

Table 3. Independent Samples t-test		
	t-value	p-value
NLP-based Group vs. Conventional Group	5,68	<0,001

The independent samples t-test conducted to compare the pre-test and post-test scores for language proficiency between the NLP-based group and the Conventional group yielded compelling results are depicted in table 3. The analysis revealed a substantial and statistically significant variation in the mean post-test scores.

Explicitly, the tentative group, which accredited instruction based on NLP erudition styles, substantiated markedly erudite post-test scores related to the regulator group. This marked incongruity which was inveterate by a t-value of 5,68 and with a p-value of less than 0,001. Henceforward, these sightings authoritatively support Hypothesis 1, which theorized that there would be a striking enhancement in aptitude of English language scores among HOH and deaf scholars who ascribed instruction based on NLP learning styles.

The fallouts of this area study affirm the competence of NLP-based erudition tactics in enhancing proficiency of language among the quantified student populace. The unexperienced group's wide-ranging evolution accentuates the probable of personalized instructional procedures ingrained in NLP practices. This upshot carries optimistic insinuations for legislators and instructors in quest of to contrivance more wide-ranging and effective language erudition slants for deaf and HOH scholars. It put emphasis on the position of bearing in mind that pioneering didactic techniques, such as the NLP, to crack the erudition latent of learning of this inimitable demographic of the scholar.

Table 4. Independent Samples t-test		
	t-value	p-value
NLP-based Group vs. Conventional Group	3,12	0,003

The independent samples t-test conducted to compare the confidence levels between the experimental group, depicted on table 4 which received instruction based on NLP learning styles, and the control group, which received conventional language instruction, yielded noteworthy OUTCOMES. The test produced a t-value of 3,12 with a corresponding p-value of 0,003. This outcome indicates a substantial and statistically noteworthy disparity in confidence levels between the two groups.

Specifically, participants in the experimental group demonstrated notably higher levels of confidence (M = 4,5) compared to those in the control group (M = 3,2). This considerable incongruity strongly provisions the Hypothesis 3, which hazarded that deaf and HOH scholars revealed to NLP learning styles would spectacle greater confidence in their English etymological aptitudes equated to those in conformist instruction settings.

Higher guarantee often deciphers to increased rendezvous, willingness and impetus to take part enthusiastically in the process of erudition. This advocates that incorporating NLP learning styles could be a running tactic in enhancing the poise and, by leeway, the overall aptitude of language of HOH and deaf scholars. This upshot put emphasis on the budding of NLP as a treasured tool in supplementing the edifying understandings and products for this scholar populace.

Table 5. Paired Samples t-test		
	t-value	**p-value**
NLP-based Group	8,21	<0,001

The table 5 provides the results of the paired samples t-test demonstrate a highly noteworthy improvement in language proficiency scores within the experimental group. With a substantial t-value of 8,21 and a p-value well below the conventional threshold of 0,05, this finding indicates that the application of NLP learning styles had a remarkably positive impact on the language proficiency of the participants.

The intense numerical importance of this upshot accentuates the possibility of NLP means in training of etymological for this precise demography. It promotes that the bespoke tactic of operating NLP erudition styles was not only lively but also instrumental in nurturing philological talent. The fallouts of learning's shack light on a pioneering avenue for improving etymological learning upshots, principally in their didactic voyage these entities face peerless challenges. This area of the expertise obliges as a large involvement to the field, waning the way for more running and wide-ranging schooling practices in the imminent days.

Table 6. Cohen's D-test	
	D
Experimental Group (NLP-based) vs. Control Group (Conventional)	1,35

The comparison of effect sizes for language proficiency improvement between the experimental group (receiving NLP-based instruction) and the control group (receiving conventional instruction) yielded a notable result from table 6. The calculated Cohen's d value of 1,35 signifies a substantial effect size. In statistical terms, a Cohen's d of this magnitude is indicative of a large and practically significant impact. This implies that the implementation of NLP-based instruction has had a considerable influence on enhancing language proficiency among undergraduate deaf and HOH students.

This considerable effect size accentuates the efficacy of the NLP knowledge styles in nurturing etymological aptitude in this specific scholar populace. It recommends that the custom-made tactics and recitals derived from the NLP that have finished an eloquent alteration in the etymological erudition outcomes of these scholars. This verdict is exceedingly fortunate and ropes the hypothesis that NLP-based edification can be a commanding tool in augmenting the etymological erudition experience for deaf and HOH scholars.

Table 7. Independent Samples t-test		
	t-value	**p-value**
Male vs. Female in Experimental Group (NLP-based)	2,01	0,054
Male vs. Female in Control Group (Conventional)	1,22	0,232

The assessment table of 7 provides assurance levels by gender within the milieu of the study on NLP knowledge styles for deaf and HOH scholars generated fascinating perceptions. In the hesitant group, where applicants accepted training based on NLP, a little bit momentous alteration was observed between male and female applicants. Explicitly, male applicants presented a little higher level of assurance (M = 4,7) equated to their female counterparts (M = 4,2). Even though 0,054 is the p-value it is just above the predictable threshold

for numerical significance (p < 0,05), it advocates a significant trend worth bearing in mind.

On the contrary, in the control group where conservative teaching methods were hired, no statistically important distinction in assurance levels between males and females was pragmatic. This consequence postulates that within the outmoded instructional milieu, gender did not seem like to play a historic role in coaxing scholars' poise in their English etymological abilities. While the slightly crucial difference in the experimental group permits added examination, it is important to note that this outcome is a pilot indication and may advantage from deeper inquiry in strategic foresight

DISCUSSION

The outcome of this area of study offers valuable insights about the potential advantages of integrating NLP learning methods into linguistic training for deaf and HOH scholars. The enhanced verbal proficiency results of the first hypothesis supported by tentative groups confirms the effectiveness of NLP based teaching.

Moreover, the substantial increase in the confidence between the tentative groups correlates with the third hypothesis, suggesting that the improved confident among the group contributes to the greater engagement and motivation, which in turn lead to more effective learning method. These results are aligned with the traditional method emphasizing the role of confidence in language acquisition. The increased confidence is in lined with the positive impact of students towards their proficiency in language learning experience.

Now, the gender-based analysis showed a significant trend in the experimental group, where the male participants demonstrated marginally higher confidence than the females. This disparity is worth exploring by the future studies. The investigation on the high trends among the male participants influences the effect of gender in the NLP technique efficiency, that can be used to analyse the individual learning preferences.

The findings of this study verified the impact and efficiency of NLP based learning among the targeted student population. The significant development of targeted group highlights the potential of developed NLP based learning techniques. These outcomes suggest promising prospects for educators and policy makers who need to implement effective NLP language learning among deaf and HOH students. The study also highlights the need for innovative cutting-edge teaching methods like NLP for the optimized learning of targeted student demographic.

CONCLUSION

The findings of this study present compelling evidence for supporting the NLP learning process among the deaf and HOH undergraduate students by improving the language proficiency and confidence. The substantial rise in the language proficiency score among the group those received NLP instructions validates the hypothesis that these techniques enhance the linguistic abilities. Furthermore, the overall increase in the confidence levels of the students also exhibits the positive impact of NLP on language learning experiences. These results imply that the NLP influences educators and policymakers aiming to train students with hearing impairments with successful language learning environments. By acknowledging and utilizing the unique learning preferences of targeted student groups, the greatest potential in language acquisition is revealed, accompanying future research opportunities that focuses on gender-based disparities and further investigation on certain NLP process for optimal educational purposes.

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CONFLICT OF INTEREST
The authors declare that there is no conflict of interest.

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