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The Impact of Neuro-Linguistic Programming on Functional Language Development among Iranian EFL Learners

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ABSTRACT

Objective: This study investigates whether explicit instruction in cohesive conjunction patterns—derived from authentic English academic texts—can enhance the writing proficiency of Iranian EFL learners.

Methods: A mixed-method design combining corpus analysis and experimental instruction was used. Sixty university students were randomly assigned to an experimental group and a control group. Conjunction patterns were extracted from the British Academic Written English (BAWE) corpus based on Halliday and Hasan's (1976) taxonomy. The control group received standard writing instruction, while the experimental group received targeted training on the identified conjunction patterns. Pre- and post-tests were administered to assess changes in the learners' writing performance.

Results: Students in the experimental group showed significant improvement in their use of varied and rhetorically effective conjunctions, particularly adversative and causal links, while reducing overuse of basic additive forms. Statistical analyses confirmed that these improvements were significant and not attributable to chance. The quality of writing improved not through the sheer number of cohesive devices but through their strategic and context-appropriate use.

Conclusions: Targeted instruction using authentic academic texts meaningfully enhances EFL learners' coherence, analytical depth, and overall writing quality. These findings support integrating corpus-derived models and conjunction-focused instruction into EFL writing curricula to promote more effective academic writing.

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Introduction

One of the greatest problems is that learners in EFL classes learn to speak English, but they fail to use functions appropriately in various contexts. In the literature of language teaching, a lot of emphasis has been placed on language functions, but not the effects of NLP on learning these language functions (Richard & Rogers, 1986).

To unlock our full potential and do the things we've only imagined before, NPL was born out of a desire to help students develop innovative ways of thinking, speaking, and behaving (Richard & Rodgers, 2001). NPL is regarded to be in its infancy. Not enough attention has been devoted to it although a number of approaches have emerged from it. For example, drama, music, and body language have been used in second language teaching worldwide (Bergen & Soper, 1997).

In both clinical and nonclinical contexts, NLP has the potential to demonstrate human contact and communication that promotes examination and generation prevalence (Wake and Leighton, 2014). The constructive reality and people's mental engagement are emphasized. As such, it is a personal interpretation of the event and its impact on the individual's sense of self and social relationships. Anderson (1986) and Tosey et al. (2005) assert that nonverbal communication is essential to this. According to Lankton (1979), there has been very little study on the use of NLP in second language teaching. However, what little that has been done supports the claims that NLP may greatly enhance education, particularly when it comes to second language learning. These modern approaches to NLP consider how a person takes in data from their environment. The field of research known as NLP encompasses several areas of study, including language learning. According to Frieden (1981), the theory of NLP has been influential in ESL instruction throughout the last decade.

Experts in NLP focus less on theories and more on nonverbal cues such as vocal intonation, speech tempo, signals, and breath patterns (Anderson, 1986). Learners' emotional components are given significant concern in NLP. The program equips students with skills for alternative learning, helping them shift their negative self-perception from "I can't learn" to "I can learn." These optimistic views, when maintained over time, can give rise to the creative mental states necessary for academic achievement (Blackerby, 1996).

Since NLP focuses on changing behavior rather than identifying and treating the underlying causes of problematic behaviors, it might be considered a solution-based approach. Qualities focusing on

implications, possible consequences, and arrangement are addressed by NLP. It practically suggests that it is better to try something new that doesn't work rather than focusing on criticism, which reveals what works (Linder-Pelz and Hall, 2007).

NLP experts also understand the role language plays in the formation of beliefs and mental models that paint a rosier image of our identities. According to Kudliskis and Burden (2009), the purpose of NLP is to help individuals accept that these negative beliefs and thoughts are unhelpful. Since then, NLP has become ubiquitous as a means of communication and personal development. In the UK, it has recently gained recognition as an effective psychotherapy approach. Tosey et al. (2005) listed a wide variety of skilled professions that make use of NLP: instructors, directors, coaches, salespeople, market analysts, counselors, specialists, physicians, and legal counsel. Because strong clinical evidence is required, however, it has received substantial criticism from both academic and clinical brain research departments (Witkowski, 2010; Wake and Leighton, 2014).

Learning functions and being able to perform them efficiently help learners to be successful in their communication. This is what NLP is for. NLP encompasses a wide range of techniques, patterns, and strategies which assist effective communication, personal growth, change, and learning (Blackerby, 1996).

Surfing through the literature of NLP, one can find out some studies have tried to establish connections between NLP and the process of language learning. However, to the knowledge of the present researcher, few studies have been done on the role of NLP in learning language functions. Considering the importance of learning language functions as an important element in ELT, and the premise that NLP strategies might be helpful for teaching language functions, and since no study has been dedicated to the effect of NLP on learning language functions, so the present study signifies this potential and is going to investigate the subject in the context of Iran.

This research is based on Neuro-Linguistic Programming (NLP), which in turn is based on the psychological theory known as Information Processing Theory (IPT) (Abraham & Therese, 2024). According to the IPT, which is a cognitive framework developed by American psychologists George A. Miller and Richard Shiffrin in the 1960s, human mind relies on the three procedures of processing, storing, and retrieving information (Fourie & Schlebusch, 2022). Hence, the brain is like a computer in that it can store and retrieve data. Drawing similarities between human cognition and computer processes, it centers on the four stages of information processing: reception,

encoding, storage, and retrieval. Cognitive development, according to IPT, is an ongoing process, in contrast to other theories of development that postulate discrete stages. As an example of one of the many steps in the IP), Sensory memory temporarily stores sensory data before filtering it. There are two types of memory: short-term (working) memory, which processes and maintains information actively for a short length of time, and long-term (or permanent) memory, which stores information for long periods of time or possibly forever (Siddiqui, 2018). Furthermore, the fundamental ideas behind IPT include a) attention, or the act of concentrating on one thing at a time while ignoring irrelevant details; b) encoding, or the process of making sense of incoming data by converting it into a form that can be stored; c) storage, or the act of actually storing information in memory; d) retrieval, or the act of actually using that data; and e) memory, or the significance of both short-term and long-term memory in learning and cognition as emphasized in IPT.

Learning how people take in data and create mental models of the environment is fundamental to NLP (Bandler & Grinder, 1979). According to NLP, these mental models impact actions and may be changed by using intentional communication and language strategies. Fundamental to NLP are the following ideas: 1) rapport, the quality of having a good rapport with other people that is necessary for good communication, 2) Adaptability, defined as the ability to be receptive to new ideas and methods, plays a crucial role in conquering challenges; 3) Outcome, defined as maintaining focus on the goal, is essential for staying on track and achieving success (Bandler et al., 2011).

NLP offers methods for efficient communication, rapport building, and analyzing language patterns, which may greatly improve speaking abilities. According to Khalandi and Zoghi (2017), people may enhance their communication effect, build stronger connections with their audience, and become more persuasive by utilizing NLP approaches. Using verbal and nonverbal clues to create rapport with the audience and encourage comprehension and trust is a key component of NLP. Adapting one's communication style in real-time is possible for presenters who are sensitive to even the most minute changes in the audience's behavior, tone, and body language. Furthermore, speakers can benefit from knowing how language patterns impact communication when selecting the most appropriate words and phrases to express themselves (Lady, 2007). O'Connor and

McDermott (2013) state that presenters may better cater their message to their audience's preferences if they are aware of the various visual, aural, and kinesthetic communication styles.

When it comes to teaching second languages, NLP is considered an additional tool that may help students perform at a high level (Walter and Bayat, 2003). The term originates from a combination of the words "neuro," "linguistic," and "programming," all of which relate to the interconnections between the body's neural networks, how these networks manifest in language usage, and how these connections influence behavior. When we know the "how" behind something, we can either "repeat" it to get the same outcome or "change" it (up to a certain point) to get a new one (Nugent, 2008). Behavioral transformation refers to altering the process, whereas modeling refers to mimicking another person's actions. When one person succeeds at something, it's reasonable to assume that others will be able to do the same by applying the same model. Even in the realm of education, this norm is relevant (Abraham & Therese, 2024; Grinder, 2013).

According to Bandler and Grinder (1979), the originators of NLP, modelling which is the process of recreating excellence has three phases: observing the model, finding the difference that makes the difference, and designing a method to teach the skill. The present study attempts to apply the theory of excellence and modelling as underlying principles of NLP to see how it acts in the performance of language functions.

NLP can show how people connect and communicate, which helps in understanding and creating new ideas, whether in a medical setting or not (Wake & Leighton, 2014). The constructive reality and people's mental engagement are emphasized. As such, it is a personal interpretation of the event and its impact on the individual's sense of self and social relationships. Anderson (1986) and Tosey et al. (2005) assert that nonverbal communication is essential to this. A data scientist and mathematician named Bandler and a language expert named Grinder (1991) founded NLP in the 1970s. Tosey and Mathison (2010) and Tosey et al. (2005) state that Bandler and Grinder developed a contemporary method for identifying and codifying effective practices taken from a variety of experts' theories, models, and procedures, and then making these transferable to other people so that they, too, can follow in their footsteps and achieve peak performance. Instead of focusing on theories, NLP practitioners pay close attention to nonverbal cues such as breathing patterns, signals and developments, rhythm of speech, tone of voice, and the words themselves (Anderson, 1986).

Potential Human Movement, pioneered by Maslow (1943) and Rogers (1971), was a significant resource of NLP. Many people regard Koerzybski, Virginia Satir, Fritz Perls, Bandura, Erickson, and Bateson to be the founders of NLP, and they have all had a significant impact on the field. In particular, NLP experts recognize that everyone has the potential to make full use of the available resources to reach their maximum potential. Every person has a responsibility to control their mental maps by adjusting their thoughts, feelings, experiences, and even their biology. Since NLP focuses on changing behavior rather than identifying and treating the underlying causes of problematic behaviors, it might be considered a solution-based approach. Qualities focusing on implications, possible consequences, and arrangement are addressed by NLP. Instead of "failure," NLP focuses on critique, which reveals what works and suggests trying something new, even if it doesn't end up working (Linder-Pelz & Hall, 2007).

Additionally, experts in NLP understand that language plays a pivotal role in the formation of beliefs and mental models that enhance our self-perception. The goal of NLP is to help people accept that these negative beliefs and thoughts are unhelpful (Kudliskis & Burden, 2009). Since then, NLP has become ubiquitous as a means of communication and personal development. In the UK, it has recently gained recognition as an effective psychotherapy approach. Tosey et al. (2005) listed a wide variety of skilled professions that make use of NLP: instructors, directors, coaches, salespeople, market analysts, counselors, specialists, physicians, and legal counsel. On the other hand, rigorous clinical evidence is necessary; therefore, it has been heavily critiqued in the academic and clinical brain research communities (Witkowski, 2010; Wake & Leighton, 2014).

In the early 1970s, John Grinder and Richard Bandler came up with a novel way to teach and treat languages; they called it NLP (Bandler & Grinder, 1976). According to Revell and Norman (1997), Grinder and Bandler conducted research on the habits and beliefs of exceptionally well-behaved individuals at that time. Several studies have focused on NLP and its potential impact on language education recently. As an example, Siddique (2018) investigated the use of NLP in ESL classrooms. Likewise, NLP and English Language Teaching (ELT) are complementary, making NLP a powerful tool for ELT that accelerates the process. Teachers of English as a second language can benefit from NLP techniques and methodologies in a number of ways, including increased confidence, enhanced creativity, and better body language for the workplace.

Delbio and Ilankumaran (2018) focused on how NLP affected the process of learning a second language. This study explores the idea that in this age of globalization and liberalization, English is the only language that everyone can understand. It also notes that both English teachers and learners encounter numerous psychological challenges. Since NLP focuses on psychological and neurological factors, it suggests that these two areas could be connected to find solutions. Since NLP teaches people to think positively and trains their minds, the experts say it's one of the greatest ways to learn a new language. It fosters the growth of original ideas and the ability to solve problems. Using NLP enhances the process of teaching and learning. Students won't have to worry or feel any emotional or mental strain. A conductive atmosphere for learning is created. This strategy is based on nature. The method by which the kids learned their native language is modeled here. Students can learn to think critically and creatively with the aid of NLP. Additionally, Tarnopolsky (2016) addressed the need to enhance the current system for teaching ESL instructors by including NLP, suggestology, and stage-acting into their curricula. His main point is that they should be a part of teacher-training programs. He also thinks that NLP is a great tool for language instructors to use.

Research by Ali and Al-Muslim (2024) measured the efficacy of NLP methods in lowering vocal disfluencies among EFL students. Students' usage of vocal disfluencies, including pauses and repeats, was significantly reduced after using the NLP approaches, according to the results. These results highlight the need to incorporate NLP approaches into language instruction as a practical way to help EFL students overcome speech issues and develop more fluency and self-assurance.

The effect of NLP on EFL students' grammatical understanding was studied by Pourbahreini (2015). The research included 60 people and centered on passive voice. An intervention program utilizing NLP approaches such as anchoring and role-play was put into place after the completion of tests and confirmation of participant homogeneity. Pair work on active and passive voice was a fun and interactive way for visual learners to practice what they learned. When comparing the experimental group's pre- and post-test scores, the results demonstrated a statistically significant improvement. The study's author came to the conclusion that NLP has promise as a method to improve ESL students' grammatical competence.

Studies on NLP, rapid acquisition, the ability of second and foreign language learners to understand spoken language, and many more topics have been conducted. Take, for example, the

study by Davoudi and Chavosh (2016) on the topic of Iranian EFL learners' listening self-efficacy and multiple intelligences. The statistical study revealed a strong correlation between students' listening self-efficacy and their total multiple intelligence scores. Additionally, there was a statistically significant correlation between listening self-efficacy and every intelligence type (with the exception of kinesthetic, verbal, and visual intelligence). The effects of NLP or its connection to language acquisition abilities and components have been the focus of some research.

The effect of NLP on the vocabulary acquisition of EFL students was investigated by Moharamkhani et al. (2016). The findings demonstrated that EFL students' vocabulary success was significantly influenced by NLP. Moharamkhani et al. (2016) also searched how EFL students' vocabulary development was affected by NLP. NLP significantly affected the vocabulary accomplishment of EFL learners. After 12 sessions of treatment using the swish pattern, one of the NLP strategies, Moharamkhani et al. (2016) found that it significantly affects the vocabulary achievement of English language learners. This finding highlights the potential impact of NLP on vocabulary learning. Accordingly, NLP is useful for English classrooms since it caters to students with a wide range of learning styles.

When it comes to teachers' reflective practice, Marashi and Abedi (2017) focused on how NLP affected it. They studied Iranian English instructors' perspectives and experiences after they used NLP strategies in the classroom. The results demonstrated that NLP had a notable impact on educators' reflective pedagogical methods, underscoring the possibility of NLP to improve the efficacy of English language instruction.

Given these considerations, the present study seeks to investigate the impact of NLP on functional language development among Iranian EFL Learners. With respect to the purpose of the study, the researchers raised the following questions:

1. Does NLP instruction affect Iranian EFL learners' functional language development in general?
2. Does NLP instruction affect Iranian EFL learners' development in the (refusal, request, complain, apology, disagreement) function?

Material and Methods

The participants of the study were 64 intermediate level male (N=26) and female (N=38) learners within the age range of 18-25 majoring in different fields taking part in a conversation class in

TEFL research center in Tehran, Iran. The sample size is in line with Krejcie and Morgan's (1970) table of determining sample size for research activities. Hence, the participants were chosen out of 75 EFL learners according to their performance in a standard version of Quick Oxford Placement Test (QPT). The QPT was initially administered to the EFL learners, who had been chosen by convenience sampling. The students whose scores were within one standard deviation above and below the mean served as the study's main participants. The students who did not meet the criteria were nonetheless permitted to participate in the study due to the nature of the convenient non-random sampling, but their scores were excluded from the data analysis. The selected participants were divided into two almost equal groups; one experimental group (i.e., NLP, N=31) and one control group, N=33) receiving the conventional explicit teaching of language functions. It is worth noting that the students in each group were placed in two classes, each including 15-18 students, to increase the feasibility of the study. Then, the participants went through the process of pretesting, intervention, and post-testing for the effect of NLP, presented through watching authentic films representing an implicit teaching of language functions, on developing the English language functions among Iranian EFL learners.

Research Design

The present study dealt with quantitative research, it enjoyed a quasi-experimental design; the reason was that, based on Hatch and Lazaraton (1991), there was a treatment phase involved in the study and the study concerned with the learning process the participants went through in the experimental and control groups as a significant factor. Likewise, in line with Field (2024), the effect of independent variable of the study (NLP instruction presented through watching films) on the dependent variables (EFL learners' language functions) was taken into account. The language proficiency level of the students was controlled as only intermediate EFL learners took part in the study. Moreover, both genders were among the participants of the study.

Instrumentation

The data for the present study were collected by means of a standard version of Quick Oxford Placement Test (QPT), an adopted version of Multiple-choice Discourse Completion Test (MDCT) of Interlanguage Pragmatics (Amiri & Birjandi, 2015). The characteristics of all of these instruments are presented as follows:

Quick Oxford Placement Test (QPT): The QPT was used to ensure that all of the study participants were of similar ability. Hill and Taylor (2004) (www.oxfordenglishtesting.com) describe it as "a flexible test of English language proficiency developed by Oxford University Press and Cambridge ESOL that gives teachers a reliable and time-saving method of finding a student's level of English." It may be given in a short amount of time and is therefore perfect for use as a placement test or a preliminary exam. The test encompasses 60 items and takes 50 minutes to complete.

According to Cronbach's alpha, the test is highly reliable (α=.91) (Berthold, 2011, p. 674). Wistner et al. (2009) and Motallebzadeh and Nematizadeh (2011) report that the test has high construct validity based on factor analysis of the data and the credence it receives due to its widespread international use.

It should be noted that in the present study, the QPT enjoyed a KR-21 reliability index of .84 which considered as "appropriate" as noted by Fulcher and Davidson (2007, p. 107) who believe that, "Tests that do not achieve reliabilities of 0.7 are normally considered to be too unreliable for use, and high-stakes tests are generally expected to have reliability estimates in excess of 0.8 or even 0.9".

Multiple-choice Discourse Completion Test (MDCT): The MDCT which was used in the present study, was an inter-language pragmatics test covering 30 items of Apology (A) (1-6), Requests (R) (7-12), Refusals (Rs) (13-18), Complaints (C) (19-24), and Disagreement (D) (25-30) (Amiri & Birjandi, 2015).

The test enjoyed the total Cronbach's alpha reliability of .67 for 30 items with 178 M.A. students of TEFL. In addition, "The reliability indices for the components of MDCT ranged from .55 for complaint to .78 for disagreement, considering the fact that there were only six items in each section" (p. 656).

The expert judgment validity of the test was also confirmed through Wilks' lambda "(i.e., Value=.517; ($F(4, 46) = 10.74$, $p < .05$, Partial $\eta 2 = .48$)" (Amiri & Birjandi, 2015, p. 656). Moreover, Amiri (2015) reported that the test enjoyed high construct validity based the results of both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) estimated through Structural Equation Modelling (SEM). MDCT, as a pragmatics instrument requires the examinee to read a written description of a situation. Then the examinee should select what would

be best to say in that situation. "It is designed to determine the extent to which participants are able to express themselves concerning the situation, through selecting the most pragmatically appropriate speech acts in response to the written situational prompts.

Materials

In addition to the institute's course book which was Touchstone, intermediate level (McCarthy et al., 2019), the learners in both groups worked with the book entitled *Function 1* (Matreyek, 1990). The book includes variety of speech acts and situations addressing the proper functions the native speakers use in various situations. Different types of speech acts were used in the classroom practices aiming at teaching language functions which were assumed to increase inter-language pragmatics knowledge of the learners.

Procedure

Pretest Phase

The selected participants of the research were divided into two almost equal groups; one experimental group (i.e., NLP, n=31) and one control group, n=33) receiving the conventional method which was the Task-Based Language Teaching (TBLT) based on the institute's devised course book. It is worth noting that the students in each group were placed in two classes, each including 15-28 students, to increase the feasibility of the study. Then, the participants in both groups received the pretests of MDCT, which had been developed and validated in the Iranian context. The means of the learners' scores in the two groups were compared together to assure their relative homogeneity in terms of MDCT prior to the treatment.

Intervention Phase

The study was carried out in the autumn semester of the institute and followed its schedule. All the classes were held in in the evenings for two days a week for both experimental and control groups emphasizing face-to-face interactions among the teacher and learners. The treatment period began and continued for 16 sessions. The whole semester included ten weeks and the learners attended the classes two sessions a week, and each session was about 90 minutes in both groups. Considering the fact that the syllabus of the language institute had to be covered during the semester, sixteen sessions of 30 minutes were allocated to the experiment in the experimental and control groups. Therefore, the classes of both experimental and control groups received the same hours of instruction and practice. Also, the same teacher taught both groups. The extra material

used for the purpose of the experiment was the book entitled *Function 1* (Matreyek, 1990) which included various functions, situations, and practices. For each session one unit of the book, covering two pages, was taught to the learners.

The first and second sessions were devoted to administering the pretests and briefing the students about the classroom conducts and research purposes. The third through fifteen sessions (i.e.,13 sessions) were allocated to the intervention, and one session was also saved for the administration of the posttests.

The experimental group learners were exposed to NLP learning which relied on "modelling". According to Bandler and Grinder (1979), since we all have the same neurobiology, everything someone does may be imitated by someone else who can learn to replicate the same outcomes. They called this method "modelling," which involves figuring out exactly how individuals accomplish a certain result and then replicating that "how" to get the same success (Nugent, 2008). Notably, Bandler and Grinder discovered that both verbal and non-verbal communication impact the human neurological system in a manner that influences one's attitude, thoughts, and actions toward an event, circumstance, person, or even oneself. Furthermore, getting into the right mindset for success requires shifting certain fundamental beliefs and practices.

Accordingly, the learners in the experimental group worked with the authentic movies taken from different websites and Instagram pages encompassing different language functions in English in addition to the book *Function 1* (Matreyek, 1990) which included different language functions. Learners were encouraged to follow the way native speakers use the functions of the English language, focus on the situations where a function is used and keep it in mind. Then they were presented with tasks and scenarios. In the NLP tasks, what was of paramount significance was an implicit and incidental learning process (Kyle & Eguchi, 2024) which was manifested in watching authentic movies and learning from them.

Posttest Phase

After the treatment sessions were completed, all the learners in the two groups sat for the post-test of MDCT. The MDCT used in the posttest phase was the same standardized and validated MDCT used as the pretest with 30 items. However, its items were rearranged and the choices in each item were rearranged, too in order to minimize test effect. It was administered with a hope to measure the participants' probable development in EFL functions. The collected quantitative data were fed

into SPSS version 28 and the results were reported. Accordingly, the means of the learners' scores in the posttests of MDCT were compared to measure the EFL learners' development of language functions after the treatment.

Data Analysis

To analyze the data, SPSS software, version 28 was employed and a number of statistical techniques were employed to analyze the data collected in this study; namely, Independent Samples t-test for comparing two groups' means on Quick Oxford Placement Test (QPT) and Multivariate ANOVA (MANOVA) was run to compare the two groups' means on posttests of overall language functions and its five components.

Results

Subject Selection Phase of the Study

This study investigated the effect employing NLP, as an instructional method in the EFL classroom on the improvement of EFL learners' language functions. The EFL Learners participating in this study were selected from among 75 who took the QPT. The 64 students whose scores on the QPT were one standard deviation below and above the mean were selected.

Table 1. Descriptive Statistics for Quick Oxford Placement Test (Subject Selection)

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
QPT	75	11	54	33.13	9.899	97.991
KR-21	.84					

Homogenizing Groups on Quick Oxford Placement Test

The experimental and control groups' means on Quick Oxford Placement Test (QPT) were compared through Independent-Samples t-test in order to prove the two groups were homogenous in terms of the general language proficiency prior to the administration of the treatment. As shown in Table 2 the experimental (M = 34.13, SD = 2.44) and control (M = 34.58, SD = 2.51) groups had roughly equal means on QPT.

Table 2. Descriptive Statistics for Quick Oxford Placement Test by Groups

	Group	N	Mean	Std. Deviation	Std. Error Mean
QPT	Control	33	34.58	2.513	.437
	Experimental	31	34.13	2.446	.439

The results of Independent Samples t-test; (t (62) = .720, p > .05, Cohen's d = .180 representing a weak effect size) indicated that there was not any significant difference between the two groups' means on QPT. Thus, it was concluded that the two groups were homogeneous in terms of their general language proficiency prior to the administration of the treatment.

Table 3. Independent-Samples t-test for Quick Oxford Placement Test by Groups

Levene's Test for Equality of Variances			t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.001	.999	.720	62	.474	.447	.620	-.794	1.687
Equal variances not assumed			.721	61.917	.474	.447	.620	-.793	1.686

Comparing Mean Scores on Language Function Test

Multivariate ANOVAs was run to compare the two groups' means on posttests of overall functional language and its five sub-sections. Before discussing the results, it should be noted that the researcher tried to run Multivariate ANCOVA (MANCOVA) in order to compare the two groups' means on posttests of language functions after controlling for the effect of pretest, however, the assumption of homogeneity of regression slopes was violated. As shown in Table 4, the significant interaction between independent variables (groups) and pretest of language functions; i.e. (F (1, 60) = 7.65, p < .05, partial η2 = .113 indicating a moderate effect size) indicated that the assumption of homogeneity of regression slopes was violated on total language functions. That was why MANOVA was run instead of MANCOVA.

Table 4. Testing Homogeneity of Regression Slopes for Total Language Function Test

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group	1.805	1	1.805	2.018	.161	.033
Pretest	179.802	1	179.802	201.006	.000	.770
Group * Pretest	6.844	1	6.844	7.651	.008	.113
Error	53.671	60	.895			
Total	35996.000	64				

Multivariate ANOVA was run to compare the two groups' means on posttests of overall functional language and its five components. Before discussing the results, the assumption of homogeneity of variances of groups, and homogeneity of covariance matrices will be discussed. Table 5 shows the Levene's test of homogeneity of variances. The results indicated that the assumption of homogeneity of variances was retained on posttests of request ($F (1, 60) = 1.44$, $p > .05$), refusal ($F (1, 60) = 1.00$, $p > .05$), complaint ($F (1, 60) = .002$, $p > .05$), apology ($F (1, 60) = 1.95$, $p > .05$), and disagreement ($F (1, 60) = .217$, $p > .05$).

Table 5. Levene's Test of Homogeneity of Variances for Posttests of Language Functions

		Levene Statistic	df1	df2	Sig.
PostReq	Based on Mean	1.423	1	62	.237
	Based on Median	1.442	1	62	.234
	Based on Median and with adjusted df	1.442	1	60.848	.234
	Based on trimmed mean	1.376	1	62	.245
PostRef	Based on Mean	1.855	1	62	.178
	Based on Median	1.005	1	62	.320
	Based on Median and with adjusted df	1.005	1	54.109	.321
	Based on trimmed mean	1.691	1	62	.198
PostComp	Based on Mean	.651	1	62	.423
	Based on Median	.002	1	62	.966
	Based on Median and with adjusted df	.002	1	61.662	.966
	Based on trimmed mean	.553	1	62	.460
PostApo	Based on Mean	1.539	1	62	.219
	Based on Median	1.955	1	62	.167
	Based on Median and with adjusted df	1.955	1	61.125	.167
	Based on trimmed mean	1.481	1	62	.228
PostDis	Based on Mean	.009	1	62	.924
	Based on Median	.217	1	62	.643
	Based on Median and with adjusted df	.217	1	61.607	.643
	Based on trimmed mean	.216	1	62	.643

And finally, Table 6 shows the Box's test of homogeneity of covariance matrices. The results (Box's $M = 26.71$, $p > .001$) indicated that the assumption of homogeneity of covariance matrices was retained. It should be noted that the results of the reported at .001 levels (Field, 2024; Pallant, 2016; Tabachnick & Fidell, 2019).

Table 6. Box's Test of Equality of Covariance Matrices for Posttests of Language Functions

Box's M	26.711
F	1.626
df1	15
df2	15340.257
Sig.	.059

Table 7 shows the two groups' means (descriptive statistics) on posttests of overall language functions:

Table 7. Descriptive Statistics for Posttest of Language Functions by Groups

	Group	N	Mean	Std. Deviation	Std. Error Mean
Posttest	Experimental	31	26.81	2.212	.397
	Control	33	20.21	1.691	.294

Based on the results of MANOVA, which compare the two groups' means on posttest of overall language function test, and the results shown in Table 7 it can be concluded that;

. The results ($F (5, 58) = 77.11$, $p < .05$, partial $\eta 2 = .869$ representing a large effect size) indicated that there was a significant difference between experimental and control groups' mean scores on posttest of overall language function test.

Table 8 shows the two groups' means on posttests of components of language functions. Based on these results of MANOVA, and the results shown in Table 8 it can be concluded that;

A: The experimental group ($M = 5.35$) significantly outperformed the control group ($M = 4.12$) on posttest of refusal ($F (1, 62) = 46.24$, $p < .05$, partial $\eta 2 = .427$ representing a large effect size).

Table 8. Descriptive Statistics for Posttests of Components of Language Function Test by Groups

Dependent Variable	Group	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
PostREQ	Experimental	5.194	.148	4.897	5.490
	Control	3.788	.144	3.500	4.075
PostRef	Experimental	5.355	.130	5.094	5.615
	Control	4.121	.126	3.869	4.374
PostComp	Experimental	5.355	.165	5.025	5.685
	Control	4.333	.160	4.013	4.653
PostApo	Experimental	5.032	.146	4.740	5.325
	Control	3.848	.142	3.565	4.132
PostDis	Experimental	5.806	.080	5.646	5.967
	Control	4.121	.078	3.966	4.277

B: The experimental group (M = 5.19) significantly outperformed the control group (M = 3.78) on posttest of request (F (1, 62) = 46.23, p < .05, partial η^2 = .427 representing a large effect size).
C: The experimental group (M = 5.35) significantly outperformed the control group (M = 4.33) on posttest of complaint (F (1, 62) = 19.72, p < .05, partial η^2 = .241 representing a large effect size).

Table 9. Tests of Between-Subjects Effects Posttests of Components of Language Functions by Groups

Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Group	PostREQ	31.584	1	31.584	46.234	.000	.427
	PostRef	24.326	1	24.326	46.246	.000	.427
	PostComp	16.679	1	16.679	19.724	.000	.241
	PostApo	22.399	1	22.399	33.699	.000	.352
	PostDis	45.396	1	45.396	227.828	.000	.786
Error	PostREQ	42.354	62	.683			
	PostRef	32.612	62	.526			
	PostComp	52.430	62	.846			
	PostApo	41.210	62	.665			
	PostDis	12.354	62	.199			
Total	PostREQ	1352.000	64				
	PostRef	1482.000	64				
	PostComp	1561.000	64				
	PostApo	1315.000	64				
	PostDis	1618.000	64				

D: The experimental group (M = 5.03) significantly outperformed the control group (M = 3.84) on posttest of apology (F (1, 62) = 33.69, p < .05, partial η2 = .352 representing a large effect size).
E: The experimental group (M = 5.80) significantly outperformed the control group (M = 4.12) on posttest of disagreement (F (1, 62) = 227.82, p < .05, partial η2 = .786 representing a large effect size). Figure 11 shows the two groups' means on posttests of components of functional language.

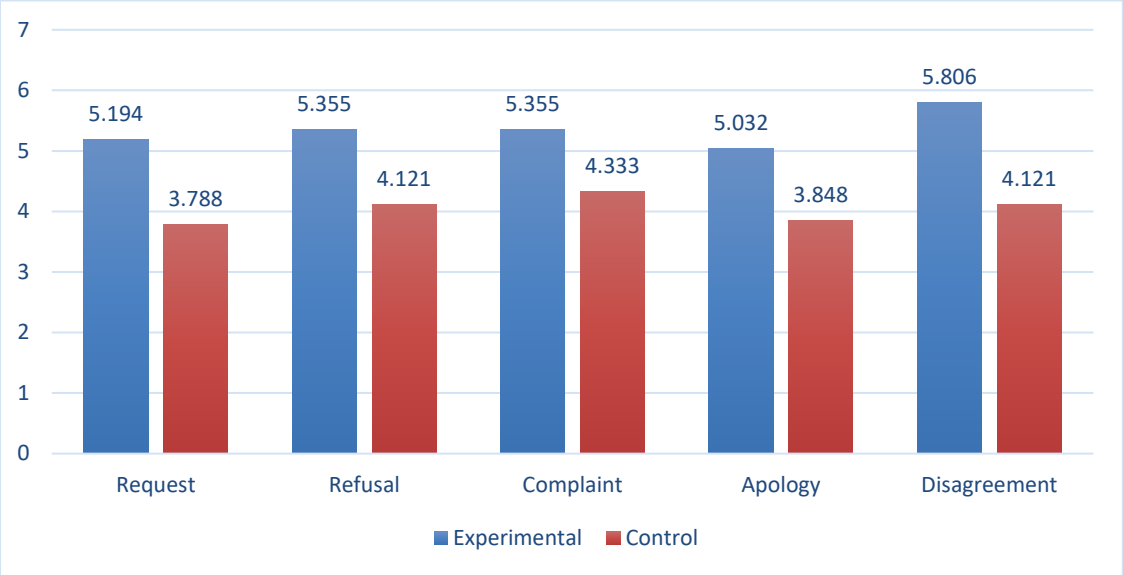

Figure 10. Means on Components of Posttests of Language Function

Discussion

Results of Multivariate ANOVA (MANOVA), which compared the experimental and control groups' means on posttests of overall language function test and its five components, revealed that there was a significant difference between experimental and control groups' mean scores on posttest of overall language function and the components of apology, request, refusal, disagreement, and complaining. This revealed that NLP instructions could affect EFL learners' development of language functions' knowledge. These findings are in line with some of the previous studies carried out on the effect of NLP on the process of learning a second language such as Delbio and Ilankumaran (2018), Siddique (2018), Derogongan and Tamayao (2015), Salehi and Karimi (2023), Tarnopolsky (2016), Caballero and Rosado (2018), Nisar (2024), Ali and Al-Muslim (2024), and Merkviladze (2023).

More specifically, the present study findings can take support from Siddique's (2018) study who investigated the use of NLP in ESL classrooms proving that NLP and ELT are complementary, making NLP a powerful tool for ELT that accelerates the process. Moreover, the present study findings can take support from Derogongan and Tamayao's (2015) study which concentrated on the use of NLP in creating ELT sourcebooks culminating to the conclusion that visuals, emotions, and concepts elicit powerful reactions from the majority of student responses. Moreover, it can be

argued that the use of NLP techniques such as anchoring, reframing, visualization, positive affirmations, and goal setting allow for the creation of instructional materials that incorporate both print and non-print elements.

Though none of the studies focusing on the impact of NLP on EFL development has focused on the development of speech acts or language functions, it can be argued that the success of NLP in developing pronunciation (Caballero & Rosado, 2018), developing communication abilities (Delbio & Ilankumaran, 2018), ESL teacher training (Tarnopolsky, 2016), fostering the growth of original ideas and the ability to solve problems (Delbio & Ilankumaran, 2018), developing teaching strategies in EFL classroom (Kulińska & Socha, 2022; Purnama et al., 2023), increasing EFL learners' writing achievement and critical thinking (Salehi & Karimi, 2023), enhancing both spontaneous and coherent speech of EFL learners (Nisar, 2024), and in lowering vocal disfluencies among EFL students (Ali & Al-Muslim, 2024) has paved the way for effective use of NLP in the EFL classroom. As Nisar (2024) argues, NLP affected students' speaking skills by exploring their experiences with the anchoring technique, a special technique in NLP which positive emotions are associated with a physical trigger, allowing quick access to confidence. Likewise, NLP, as an instructional approach, has proved effective in helping EFL students overcome speech issues and develop more fluency and self-assurance (Ali & Al-Muslim, 2024).

Since NLP teaches people to think positively and trains their minds, the experts say it's one of the greatest ways to learn a new language. It fosters the growth of original ideas and the ability to solve problems. Using NLP enhances the process of teaching and learning. Students won't have to worry or feel any emotional or mental strain. A conductive atmosphere for learning is created. This strategy is based on nature. The method by which the kids learned their native language is modeled here. Students can learn to think critically and creatively with the aid of NLP.

In the present investigation, it was revealed that NLP instructions could affect EFL learners' development of language functions' knowledge in terms of the speech acts of apology, request, refusal, disagreement, and complaining. This study explored how NLP influences the development of language functions in EFL teaching and whether it can assist students in becoming better communicators in class. This research shows that when NLP methods are used, the classroom environment improves significantly. Using NLP tactics by teachers helps learners improve their knowledge of speech acts and language functions.

The application of NLP approaches in the EFL classroom, focused on teaching language functions, has significantly enhanced the development of language functions of participants. The EFL learners in the controlled group showed major differences compared to the experimental group, which had three months of training in NLP approaches like modeling, rapport, sensory acuity, and well-formed outcomes.

In the present investigation, students saw real films. They did not receive explicit training on proper grammar usage or a vast vocabulary necessary to comprehend the material. On the other hand, NLP helps students and teachers communicate more effectively while learning. In order to motivate their students to study English, teachers should strive to create this kind of classroom atmosphere (Pishghadam et al., 2011). According to Targutay (2010), NLP is more of an all-encompassing system of communication than a collection of isolated instructional methods. In conclusion, the study's results demonstrated that NLP helped English language learners improve their communication and language function skills. In order to foster an interactive learning environment and strengthen teacher-student relationships, the present study recommends NLP.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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