TPM Vol. 32, No. S2, 2025
ISSN: 1972-6325
https://www.tpmap.org/

THE EFFECT OF A COGNITIVE-BEHAVIORAL NEURO-LINGUISTIC TRAINING PROGRAM ON THE EXTENDED MIND IN A HYPOTHETICAL SAMPLE

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Abstract

The study investigates the impact of a cognitive-behavioral neuro-linguistic training program on the extended mind of a selected sample in Baghdad during 2023–2024. To examine this, the researcher proposed a null hypothesis stating no statistically significant differences at the 0.05 level between the mean scores of experimental and control groups. An experimental design was utilized, incorporating both pre- and post-testing procedures. The sample included 66 participants divided equally into experimental and control groups (33 each).

The researcher developed a measurement tool for the extended mind based on the theoretical framework of Andy Clark and David Chalmers (1998). The scale included 36 items rated on a five-point Likert scale and was validated for reliability and psychometric properties. The intervention spanned six weeks, with two sessions per week, totaling eleven sessions. The program was administered personally by the researcher to the experimental group.

Following the intervention, both groups underwent post-testing. Statistical analysis was conducted using the independent samples t-test to assess differences between the groups. Results demonstrated a substantial effect of the training program on enhancing the extended mind in the experimental group, with highly significant differences ($p < 0.05$) favoring the experimental group.

The findings confirm the efficacy of cognitive-behavioral neuro-linguistic training in influencing the extended mind. Based on the results, the researcher provided key conclusions, along with recommendations and future research suggestions.

Keywords : Cognitive-Behavioral Training, Neuro-Linguistic Programming, Extended Mind, Experimental Design, Statistical Analysis

INTRODUCTION

The researcher, through continuous observation of the challenges facing the hypothetical sample and the broader global context, particularly within societies affected by terrorism and its consequences, was inspired to initiate this study. Living in a community that has experienced—and continues to endure—the aftermath of terrorist activities, the researcher's ongoing examination of national and international circumstances played a pivotal role in identifying the need for this research.

It was observed that individuals within the hypothetical sample often displayed remarkable resilience during extraordinary terrorist events. Yet, these events also left behind psychological and behavioral repercussions that merit investigation and proactive intervention to prevent similar outcomes in the future. The loss of a brother, friend, father, or team leader while confronting terrorism may boost individual bravery, but it can also inflict deep psychological wounds that diminish resistance capacity.

Furthermore, anxiety, mental distraction, and daily behavioral disturbances may emerge, particularly among groups most in need of support and empowerment—those tasked with confronting terrorism in all its forms.

This research emphasizes the necessity of enhancing the sample's negotiation skills, communication with extremist groups, and nonviolent management of suspected individuals. It also calls for analyzing psychological, social, and economic factors affecting terrorist recruitment and affiliation, while fostering emotional regulation and disciplined responses under pressure. Through targeted psychological training, these individuals can be better prepared to face terrorist threats effectively and collaboratively.

Despite the urgent need for strategic counterterrorism interventions—including depriving terrorism of its financial sources, dismantling radical discourse, and disrupting the environmental stressors that drive youth toward extremist groups—the most specialized units (represented here as the hypothetical sample) are often left waiting for actionable intelligence rather than addressing the root causes. Additionally, efforts to reintegrate families of former extremists into society are essential for a comprehensive approach to combating terrorism beyond direct combat operations.

In this context, the researcher explores the concept of the **extended mind**, wherein cognitive faculties harmonize with surrounding tools to enhance strategic thinking, holistic analysis, and behavioral understanding. This integration is crucial for empowering the sample to make informed decisions and respond effectively to complex threats.

Neuro-Linguistic Programming (NLP) is identified as a transformative approach that enables individuals to reshape their thoughts, behaviors, habits, and interpersonal interactions. By fostering self-awareness and enhancing social, emotional, and psychological performance, NLP-based cognitive-behavioral training contributes to human development through structured exercises in communication, stress management, and relationship building.

The current research problem emerges from a clear reliance on traditional models of institutional development—scientific, political, and organizational—and highlights the importance of exploring cognitive and behavioral weaknesses and strengths to formulate effective strategies for institutional advancement.

Accordingly, this study aims to determine the impact of a cognitive-behavioral neuro-linguistic programming training program on the extended mind of the hypothetical sample, particularly in enhancing psychological resilience and decision-making under pressure.

The extended mind expands mental capabilities by blending cognitive processes with assistive tools. Devices such as smartphones increasingly function as cognitive extensions—storing contacts, media, appointments, locations, and navigation—replacing once-essential mental tasks and becoming, as Ashraf (2015, p. 2) suggests, integrated parts of our minds and bodies.

Similarly, NLP-based training programs play a vital role in promoting self-development. They offer mechanisms for inner control, unlocking latent potential, and fostering success, happiness, and well-being. These programs guide individuals in transforming habits and thoughts into optimal forms aligned with their inherent nature (Al-Tayyib, 2015, p. 54).

Thus, the core research problem is defined as follows:To determine the effect of a cognitive-behavioral neuro-linguistic programming training program on the extended mind of the hypothetical sample.

Second: The Importance of the Research

Neuro-Linguistic is an important factor for the individual's perception of change and work on self-development to achieve various goals, as they serve as driving forces that help individuals overcome obstacles to achieve successes, and work to refine thinking and direct it to good handling of pressures and tensions, as it is one of the methods of human development that helps to re-engineer the self as well as help to get rid of negative feelings that hinder its growth and personal development as well as develop mental ability, cognitive, and emotional (Hussein, 2006: 84)

Neuro-Linguistic is an engineering discipline that integrates engineering principles and methods and psychology to design and improve products, systems and services that meet the needs and desires of individuals, andaims to understand and analyze the individual's interaction with technology and improve his experience, as well as that neuro-Linguistic provides strong support for the design and development of cognitive-behavioral training programs to enhance the mental and behavioral skills of individuals, improve the performance of individuals and the interactions that occur between them and systems and tools. This program includes activities and tasks designed to enhance thought processes and stimulate behavior (Kwallek, N., Woodson, H., Lewis, 1997: 121-132).

Neuro-Linguistic includes a set of methods and techniques aimed at improving the mental health and emotional balance of individuals, and help them achieve their goals and develop their personal and social skills, andthrough training sessions, by specialists in neuro-Linguistic as well to improve their

abilities in the fields of (effective communication, problem solving, emotion management, promoting positive thinking) after providing the necessary tools and strategies for individuals to enhance their abilities in these areas and important interpersonal skills (Nouri, Said,2016: 42)

Neuro-Linguistic can contribute to enhancing self-confidence and improving the internal communication of the individual, which leads to improved personal and social relationships in general, and when the individual has self-confidence, he becomes more bold in expressing his opinions and ideas in a respectful and objective manner, which contributes to building healthy and fruitful relationships with others, which helps him to build more compatible relationships with himself and achieve personal satisfaction (94: (Endsley, M.R., 1999)

The importance of neuro-Linguistic comes as a necessity to enhance the mental and psychological abilities of the members of the assumed sample, as the high psychological and mental requirements in its field of work may affect the performance of the team and its ability to adapt to challenging and pressure situations in order to enhance our understanding of the extent to which cognitive-behavioral training programs affect the development of mental abilities and improve the overall performance of individuals in the psychological, cognitive and military field. As neuro-Linguistic is a science that enters into all the actions and behaviors of man and includes many areas of his life, and the mind has its own methods of sorting and distinguishing different and disparate information from one person to another and works easily, to remove confusion or misunderstanding, and this is an important part of the process of human discovery of himself and his real powers and supernatural abilities by which he can change his lifestyles behavior and thinking and motivate him to change for the better (McDermott et al., 2004: 8)

Neuro-Linguistic is a variety of methods, techniques and scientific knowledge about the functioning of the human mind and its psychological responses to self-engineering to enable it to meet the needs of individuals and enhance their experiences within the environment, and it also works to help individuals understand themselves better and achieve their personal satisfaction, by promoting self-awareness (Abdullah, 2002: 14).

Neuro-Linguistic is concerned with studying the impact of psychological factors on individuals and societies and aims to develop and improve social and psychological relations, as it is concerned with understanding the factors that affect human behavior and developing methods and tools to improve psychological and social processes, such as analysis, design and development of social systems. ... elc, 2004: 56 & Raja Parasuraman

Neuro-Linguistic is also concerned with emotional experiences as experienced and experienced by the individual and the meaning that these experiences take for him, and emphasizing his perceptions of himself, his personal experiences, others and the surrounding sphere as a basis for explaining his behavior and understanding his personality (Jarrett, 2004: 87).

The importance of neuro-Linguistic is highlighted through its control of the process of thinking and controlling emotions, getting rid of fears and bad habits, realizing the strategy of success, superiority and genius of others and applying it to oneself, practicing rapid change systems for anyone you want, influencing others and quickly persuading them, integrating cognitive patterns as well as the role of both trust and control strategies in the distribution of tasks between man and machine according to Neuro-Linguistic Systems (MACDYermout et al., 2004: 13).

Neuro-Linguistic aims to understand and analyze the interaction of humans with technology and improve their experience by designing technological products that are more quality and effective to facilitate their use and improve human performance in work environments, analyzing and designing transportation and communication systems, and many other areas that benefit from analyzing human behavior and cooperation with technology, and thus it is one of the most important modern technologies to reach specific goals and objectives. Such as communicating in a correct and effective way, enhancing self-confidence, improving relationships with others, changing worldview, and personal development (Joseph O'Connor, Robin Pryor 2004: 232).

Neuro-Linguistic is based on the fact that the individual not only acts on the basis of objective characteristics related to his social environment, but there are cognitive roots that need to be clear and known in advance. One of its techniques is to see negative or catastrophic situations with a positive eye: for example, when the electricity goes out, everything you wrote through the computer goes in vain, here we learn to immediately store everything and at every stage so that this does not happen again. Everything in the world is based on (understanding the general context) within which the event is involved, and the extended mind is concerned with vital aspects to enhance the individual's abilities to deal with work pressures and psychological and occupational challenges (Cardeña, E., & Croyle, K. 2009: 65).

That the mind of the important components of the soul, and its distinction of man and preferred from other creatures, has emphasized the Koran on prudence and contemplation of any wisdom in thinking, the mind realizes the human being and guided by the best option and knows the good and ugly, as it is the balance and guide assignment in front of God and his creation to employ rational power In all areas of life, otherwise the human being besieges the bad deeds andenables him to evil as stated in the saying of the Almighty {and the soul would not believe except with the permission of God and make abomination on those who do not reason} (Yunus: 100) (Farhadian, 1414 AH, 45-46).

There have been hadiths about the mind, including what was narrated from the Prophet (may Allah's peace and blessings be upon him) that he asked: What is the mind? He said: Work in obedience to Allah and that the workers in obedience to Allah are the wise, as it was narrated that Imam Ali (peace be upon him): He said, "The mind is an instinct that increases with knowledge and experiments" and said:The mind is the virtue of man" and narrated from Imam Sadiq (peace be upon him) that he said: "The place of the mind is the brain " and said "The abundance of consideration in science opens the mind" (Majlisi, 111 AH: 65).

Plato looks at man in terms of composition as a rational force in three: the first sensuality with physical sensual desires and the second angry with noble instincts whose task is to preserve human dignity, and the third rational which means the power of real perception and virtue of wisdom, and goes Canadian to say that the return of every action leads to the mind as he wants to elaborate it) (Abdel Nour, 1975: 35).

The extended mind has the ability to determine the processing of information, and other cognitive mental states , outside the brain, that is, in the relationships that a person establishes with the environment and its objects, gives great importance to its role in expanding the individual's perceptions and creativity beyond the individual himself, to the tendency towards infinite knowledge, uncharted solutions and creative diversity away from the more classical cognitive sciences, which led to The study of the extended mind is widely in various fields such as sociology, psychology and information sciences, andthe development of theoretical models and theses on how external tools affect mental work and social interaction, and the extended mind has been used to explain many phenomena and practices such as the adoption of technology in learning and social interaction via the Internet, and Academic studies on the extended mind are increasingly interested, including numerous researches exploring the influence of external tools on the mind and hence individual behavior (Clark, A., & Chalmers, D, 1998:7-19).

In this sense, it is a brain-centered theory, as everything human will be limited to the potential of activity, and the activity here is not only the physicochemical activity of our neural networks, it is no longer about the environment that forms the mind, but the environment is part of the mind itself, cognitive structures have wide realities and are not limited to the physical limits of the human body.Cognitive structures are subject to constant modification through their connection with other physical elements, but it is not enough to have a first contact (for example, with a technological device) to consider it as an extension of the mind with its abstract subjects to be able to think in this way, but rather necessary conditions such as automation and accessibility 2005; 53) ,Gregorio Sanchez &).

To illustrate this, Clark and Chalmers (1998) (cited by Andrada de Gregorio and Sanchez Barrera, 2005) as an example, presents an individual suffering from Alzheimer's disease and to compensate for his memory loss, writedown everything that seems important in a notebook so that it is automatically, and it is customary to review this tool so that he can interact and solvehisproblems.Journal, so the notebook acts as a storage device for your beliefs, needs, and everything you think matters to you and enters into your interactions with your physical and moral surroundings alike, as well as it is a physical extension of Zakir Tech, asthe notebook plays an active role in perception and then, the establishment of a cognitive system, and for the multiplicity and difference of sources of knowledge, the extension of the mind has no limits (2011:56, Sheldrake)

The extended mind variable passes through a variety of names, such as the positional externalism Wilson (2004, 2003), the active externalism (Clark and Chalmers, 1998), compound externalism (Hurley 1998 (Rolands, 2006), environmentalism (Rawllands, 1999), cognitive extension (Clark, 2008) and extended mind (Clark and Chalmers, 1998). Phraseology is the commitment to the idea that aspects of the external environment outside the brain environment can, at certain times, play a foundational role in the physical perception of the mind or aspects of it (Clark, 2010: 56).

The assumed sample is of great importance that emerges through reviewing its specialized role in developing and developing a comprehensive policy and strategy to combat terrorism, implementing security operations and strategic plans, coordination, cooperation and exchange of information with the relevant authorities and counterpart agencies of Arab and foreign countries to effectively address terrorist

operations targeting the state, citizens and their property and for the purpose of taking all appropriate measures to eliminate terrorism (Anti-Terrorism Service Law No. (32). 2016 :10)

The importance of the research can be inferred as follows:

A theoretical importance

1. The importance of the research appears by addressing the supposed sample, as it represents the shield of the country's security at the internal and external levels and the symbol of its development in various security, cultural and strategic fields, and it needs attention in terms of conducting studies and research that enhance the elements of its success and undermine the chances of its decline, which is the first research _ as far as the researcher knows _ addressing the variables of the current research with this professional segment, Being touched on the impact of a cognitive-behavioral training program for neuro-Linguistic on the extended mind of the assumed sample.
2. Directing scientific attention with an academic professional vision and providing a large amount of theoretical data that enables the adoption of the impact of the neuro-Linguistic program to enhance the extended mind by clarifying its importance in solving problems and strategic thinking in dealing with terrorism cases to combat them with the latest means and with the least losses.
3. As far as the researcher knows, there is no local study that dealt with the impact and the relationship between the variables of the current study, so this study is a unique and modest attempt in its field, especially with regard to the study population (the assumed sample), which is very useful from the results of this study in their psychological, cognitive, professional, social guidance. To record the addition of a modest scientific contribution to the Iraqi library.

B - Applied importance

This research derives its applied importance from being:

1. Providing a program for neuro-Linguistic is the first attempt of its kind in the country to find out its impact on the extended mind of the supposed sample and can be applied in the future to other samples, or conduct comparative research or reduce and raise other variables in line with the conditions of the same sample due to the lack of psychological studies for the current research sample at all.
2. Providing some data and information on some methods and strategic methods of behavioral, training and cognitive, which can be used to find out the impact of the neuro-Linguistic program in knowing the existence of the extended mind or not in the assumed sample.
3. Building a cognitive-behavioral training program for neuro-Linguistic in the extended mind is useful for academics and professionals in supporting efforts to enhance the extended mind, which needs the existence of the supposed sample to be studied and the adoption of the results of those studies to raise the level of the security field and the national strategic plan on the one hand and promote professional studies scientifically to raise their status on the other hand.
4. The study will provide a program of neuro-Linguistic for the extended mind variable of an important segment of Iraqi society within the high-task security military sector.
5. The study will provide a measure to measure the extended mind for the first time locally and globally.

Aimes of the Research

The current research aims to:

Investigating the effect of a training program (cognitive - behavioral) for neuro-Linguistic on the extended mind of the assumed sample

To achieve the objective of the current research, the researcher formulated the following null hypothesis:

1- There are no statistically significant differences at the level of (0.05) between the averages of the experimental group scores, and the average scores of the control group in the extended mind .

Limits of the Research

The limits of the current research will be determined by the following:

- Objective limits: the effect of a training program, neuro-Linguistic , extended mind.
- Spatial boundaries: Iraq.
- Human limits: theAssumed sample
- Time limits: 2024.

Definition of the terms

First: The effect

- Impact language: the rest of the thing, and the plural effects and effects and came out in its impact, and in its impact any dimension. And the effect: keeping the impact in the thing left a trace, the effects: the media (Ibn Manzur, 711 AH : 19)

- Impact idiomatically:
He defined it (Hefni, 1975) as the result of an accident, or a phenomenon in a causal relationship (Hefny, 1975: 253).
Second: Training Program:
Known by:
- (1977, Shaw)
A cycle of elements expressing interrelated activities that begin with general and specific objectives, and a set of processes that end with evaluation strategies to check the extent to which goals have reached goals (Show, 1977: 340).
- (Hindam and Jaber , 1978)
An activity that aims to change individuals in some way, adds knowledge to their knowledge, enables them to perform skills they would not otherwise be able to perform, and helps them in a certain way (Hindam and Jaber, 1978: 121).
- (UNESCO Regional Bureau for Education , 1993)
Organized and planned activity provided to trainees to develop their skill and knowledge level (UNESCO Regional Bureau for Education, 1993: 3).
The procedural definition of the training program prepared by the researcher:
All training procedures and activities, to implement training sessions that include neuro-Linguistic and the fields it includes, which were prepared to train the high-task security forces (Iraqi Counter-Terrorism Service forces) with the aim of revealing their abilities to communicate effectively, solve problems, manage emotions and promote positive thinking that can be inferred through the tool prepared in this study.
Third: Neuro-Linguistic
Defined by:
(Bandler, 1979)
A position or direction full of strong human curiosity with a methodology that creates a specific number of techniques (Bandler, 1979: 83).
(Al-Tikriti, 2001)
The art of excellence and personal success, which is based on a set of models, skills and methods of thinking and effective achievement in various areas of life (Al-Tikriti, 2001: 15).
(Shakshak, 2012)
A means that helps a person to change himself, reform his thinking, refine his behavior, purify his habits, sharpen his mettle, develop his talents and skills, i.e. change in the soul and influence others, and thus he has reached what he wants and obtained what he asks for (Shakshak, 2012: 221)
The researcher has adopted the definition of Bandler (1979) for neuro-Linguistic because the researcher adopted it in the preparation of the topics of training sessions commensurate with the tasks of the sample and the effective cognitive-behavioral impact occurs in the current study .
Fourth:The Extended Mind: The Power of Thinking
Known by:
(Clark & Chalmers,1998)
An interactive mind that shares its mental interactions and processes with the physical environment through external tools such as books and computers (Andy Clark & David Chalmers, 1998:34).
(Tewre, 1998)
An extension of human mental and cognitive processes to bodies, institutions, tools, architecture and cultural phenomenon in general . (Tewre, 1998:45)
(Damaseo,2010)
An interactive process between the mind and the external environment, with external tools contributing to the extension and enhancement of the mental abilities of the individual (Damaseo, 2010: 98)
The researcher adopted the definition of Andy Clark and David Chalmers (1998) because the researcher adopted it in building the paragraphs of the extended mind scale forits suitability in terms of clarity and accuracy with the tasks and conditions of the sample in the current study.

The procedural definition
is the total score obtained by the respondent through his answer to the paragraphs of the extended mind scale used in the study.
Theoretical framework
FIRST: Neuro-Linguistic

It is a branch of social and behavioral sciences concerned with the study of factors that affect human behavior, emotions and thinking, helping individuals to achieve their goals and develop their personal and social skills, the impact of both American scientists John Gr Ander, a linguist, and Richard Bandler, a mathematician who greatly influenced the origin of linguistic programming for the mind, both based his works on research by other scientists, including the famous linguist NoamChomsky, and the Polish scientist Alfred KorzybskiAifrdKorzybsky, the English thinker Gregory Batison, the psychologist Milton Erickson and Virginia Satir, the German scientist Fritz Perls, the applications of neuro-Linguistic extended in every matter related to human activity such as education, mental and physical health, sports and games, trade and business, advertising, skills and training, and the arts and acting, personal, family and emotional aspects (34): (Lee, J.D., & Moray, N. 1994

Procedural steps for using neuro-Linguistic to achieve effective communication

A. Setting the goals to be achieved and relying on (well-formed outputs as a model for setting effective goals.

B. Determining behavior is the only thing observed by others and from the methods of neuro-Linguistic that work with behavior: -

1. Helping individuals to learn skills (modeling lessons).
2. Building and enhancing intimacy and influence by matching Most individuals feel comfortable with others who are similar to them (Carol Harris, 2005: 12)
3. The use of language for communication and influence and has a number of aspects, including:

Identify individuals' personalities and motivation models through their language models.

Recognize the senses that individuals rely on through their used words.

Be able to use general or accurate language and appropriate to achieve special results.

The use of indirect language for persuasion and influence.

Respect words that depict individuals' real-world experiences.

Thinking and includes the elements of thinking (vision / perception / hearing / experience / emotional sensory sensations) It helps individuals to create a lot of pleasant experiences for themselves, and to use their mental experiences to create something completely new.

Feelings emphasize the importance of emotional balance to achieve effective performance, emotional responses are evoked by thoughts, so emotional responses can be changed by changing thinking models. Changing beliefs, values, and assumptions by individuals learning new skills directly (display) a blue rose if he thinks all roses are red), and indirectly by demonstrating giving a person who thinks she is weak in public conversations the opportunity to train until she is convinced that she can do so (Carroll Harris 2005:21).

Optional Order: A framework for exploring effective performance and can be summarized in five elements that contribute to performance. (Outcomes, behavior, feelings, mental strategies, beliefs and values). (O'Connor, Pryor, 2004: 232).

Neuro-Linguistic is based on two main pillars:

1 The system of belief in its general linguistic sense.

2 How to succession of ideas and perceptions, and the resulting of these ideas of action, saying or behavior of belief on the one hand, and the senses on the other hand, and between them the mind that goes to the senses increases them knowledge and knowledge, and returns to belief and faith refines it from the impurities of illusions, purifies, and prepares the way for him (Dilts & al, 1979: 5)

The research of both (Bandler and Grinder, 1972) and then (Meckenbaum, 1975) in this area found that this technique plays a major role in success and excellence in all areas of life, it enriches the individual with the vocabulary of his feelings, and identify the strengths and weaknesses in his emotions and behavioral aspects, and try to see the self in a positive perspective in light of the alternatives of thinking for negative citizens, and the possibility of seeing them in positive colors and halos of happiness, away from the skin of the soul and assigning it what it has no energy, or placing the burden on others and exempting oneself from confrontation (al-Fiqi, 1999: 78).

Features of neuro-Linguistic

1- It follows an integrated approach: Neuro-Linguistic adopts the idea that all parts and components of an individual must be seen as complementary and any change in a part is reflected in the rest of the parts and affects them, and this view takes into account all the possible consequences of changing a particular component in the individual (Harris, 2004: 20).

2- It deals with fine details: The other side of the fact that this technology is holistic and integrated is the attention to fine details and an example of this is the way in which it interacts with a specific element of thought processes such as how individuals imagine what or how they use mental dialogue, as neuro-Linguistic provides us with tools and skills through which we can identify the human personality, way

of thinking, behavior, performance, value and obstacles that stand in the way of creativity, performance and operations Psychoengineering enables humans to analyze such precise processes in a way that helps them become more effective, and that the study of details helps to understand, simulate and deal with each element separately rather than dealing with a complex set of activities simultaneously (Garrett, 2004: 50).

3- It is based on important elements such as efficiency and building role models: Neuro-Linguistic is very interested in individual skills and abilities, and it is thus linked to modern concepts of training and development, and building models is the essence of neuro-Linguistic technology, especially the formulation of role models for individuals who are distinguished effective, and work to determine the elements of performance in their success, so others can be helped to perform in the same way (Al-Fiqi, 2001: 24).

4- It focuses on mental processes: Although a large part of neuro-Linguistic is focused on apparent behavior, a great deal of attention is directed to how ideas are affected by performance as well, and provides us with tools andframeworks that can bring about the required change in human behavior, feeling and abilities to achieve goals, as neuro-Linguistic provides several ways to activate patterns (mental strategies) and help individuals to make changes to them, which supports their lives (Garrett, 2004 : 119).

5- It deals with consciousness and unconsciousness: The term consciousness is used to express the state of a person's perception of himself or the elements of the environment surrounding him or beyond, while the term "unconscious" is generally applicable to situations such as: normal sleep or under the influence of anesthetics, or fainting, but it is also used to describe some mental processes that take place outside the framework of perception and this case includes a wide range of things such as learning a particular language by repeatedly listening to it, And not through the study of rules and vocabulary or the possession of the person in the conversation is not aware of them, and here comes the role of neuro-Linguistic as it allows us to identify the elements of the unconscious and thus know how to do what we do and there is a general acceptance of the existence of the unconscious mind and a state of great impact on trends and behaviors and this effect may be positive or negative, which may lead to behavior or to achieve useful and fruitful results, Or it constitutes an obstacle (al-Fiqi, 2001: 30).

Psychoengineering takes advantage of this effect in its work and the effect is most effective when the processes of consciousness and unconsciousness are integrated together, for example, when teaching a certain skill to a person who thinks it is difficult for him to learn it, an educational methodology can be followed that allows adding elements that address the unconscious mind and reach the deep level of this person's mind directly (Connirare& Steve, 1989: 2).

6- It is characterized by the speed of implementation and in obtaining its results: The speed of achieving results is a major feature of neuro-Linguistic and there are many techniques that are characterized by tremendous speed in their application and this is contrary to many traditional ideas, especially those related to psychoanalysis (Andereeas& Tamara, 1994: 9)

7 - It is characterized by neutrality: This specialization is characterized by friendly life, it is a tool used and not a ready-made prescription, and the use of neuro-Linguistic depends entirely on the practitioner and the user, as there are many methods of use that vary as much as the diversity of users (Samman, 2005: 5).

8 - It respects its users: One of the important principles of neuro-Linguistic is to take into account respect for others and the importance of this principle is established since the early stages of training, and for this reason attention is directed to the so-called (correspondence of the surrounding environment), which means in neuro-Linguistic the conditions surrounding any intervention on its part, the study of this term means to take into account the broader context of this intervention and to pay attention to the needs and desires of the people with whom you deal, Taking their views into account along with what they believe is desirable, this ethical orientation is characteristic of neuro-Linguistic (al-Feki, 2001 : 32).

Theories dealing with neuro-Linguistic

Neuro-Linguistic depends on many sciences and theoretical frameworks that contribute to understanding human behavior and designing systems and products that meet the needs of users, because it is a specialty that combines psychology, engineering and sociology, as systems and technology are designed and developed that aim to understand and improve human interaction with machines and systems, and among these theories:

Theory of Neuro-Linguistic (Miechenbom, 1975)

The method of self-evaluation is a method of guidance methods added by Meknbaum to the theory of neuro-Linguistic in its classic version to come out to modern psychology with an updated version based on the cognitive behavioral trend, and Meknium emphasizes that the process of learning and

teaching can not be limited to a stimulus and response only as you see behavioral theory, but if we want to change the behavior of a must include his thoughts, feelings, and beliefs, ideas are what move the motivation of the individual to work, so the treatment is not limited to controlling the Behavioral conditionality, and that there are other factors that play a prominent role in the learning process, namely thinking, perception, cognitive constructions, the individual's internal talk with himself and how he enhances things, these all have an effective role in influencing the behavior of the individual, and McKenbaum has concluded that thinking, beliefs, feelings and positive talk with oneself giving orders to himself any self-evaluation of himself, which indicates neuro-Linguistic in the behavior of the individual (Peter, 2008: 178).

This is what neuro-Linguistic aims at, in the sense of changing what is in the soul and influencing others and here we can link and mix between rational method therapy and training according to neuro-Linguistic , especially if we know that the psychologist Alice of those whose ideas influenced neuro-linguistic programming (NLP), which is the basis for the theory of neuro-Linguistic , which is one of those who participated in the development of the theory ofNeuro-linguistic programming (NLP) and contributed his ideas to the advancement, diffusion and expansion of these technologies (Harris, 2004: 41).

The use of Meichenbuom self-instruction on children with hyperactivity and training them to talk to themselves so that they understand the requirements of the tasks required of them in order to control their behavior and use the method of imitation and modeling to achieve this end as well asTo enhance cognitive therapy, McKinium has trained each individual to observe himself and evaluate his actions, to guide himself if his behavior is unhelpful and to give him orders in order to provide a better response, and to encourage the individual to overcome problems through new and successive attempts and an alternative and appropriate response (Alhosn Psychological Forums, 2007: 2)

Meckenbaum believes that behavior correction goes through sequential stages in occurrence, starting with internal dialogue, cognitive construction and resulting behavior, as the cognitive trend focuses on how to evaluate the individual because of his emotion and to the way he attributes the cause of that emotion, is it caused by him or others? Meckenbaum also believes that there is a dual goal behind the individual's change of internal dialogue, and the individual's need for the thing he wants to achieve or the thing he wants to bring about in the environment must be determined, and how he evaluates stimuli and for anything that attributes the reasons for his behavior and expectations about his own abilities in addressing stressful situations, the individual's perception affects his physiology and mood, mwhat makes him He argues that the process of change requires the individual to absorb, i.e., to absorb a new alternative behavior instead of the old one (Educational Forums, 2004: 3).

In summary, Meknbaum has developed the theory of neuro-Linguistic in its classic version to a modern version that adopts the cognitive-behavioral method to be possible self-engineering and with studied stages, each stage makes a clear change in the behavior of the individual and is an alternative to the previous unwanted behavior, and so the process of change requires internal dialogue and alternative convictions that contribute to the crystallization of the resulting behavior, overcoming the difficulties of various pressures, burdens, obligations, accumulations of psychological trauma and successive calamities to catch up with development, self-building and reaching the desired goals, Since mastering performance with high efficiency and emotional balance is one of the basics of the work of the security services with high tasks, so neuro-Linguistic has an important role in this process as it re-engineering the self to suit the aspirations and goals of the individual to be reached, and the researcher has benefited from this theory in its modern version (Meknbaum, 1975) in building her program in the light of the stages of cognitive-behavioral construction.

The researcher adopts the theory of Meknbaum to explain neuro-Linguistic , as it is the most appropriate for designing the steps of the program to be prepared, and the researcher benefited from the method (Meckenbaum, 1975) for correcting behavior through sequential stages begins with cognitive construction through dialogue to reach the resulting behavior, which helps in achieving the goals of the current research, as well as that the cognitive-behavioral method used in updating Meknbaum for neuro-Linguistic has importance in bringing about changes with personal and professional values for the individual and mastering skills and enhancing mental abilities Especially enable him to deal with various stressful situations.

Second: Extended Mind

The human brain is limited in the amount of information it can store in memory, so we need external devices and tools such as notebooks, computers and books on which we carry records, ideas and quotes that enable us later to perform cognitive tasks such as writing a research, and that this data is available in the surrounding environment and can be retrieved when needed, and similarly when performing

complex tasks we need to transfer some cognitive tasks to the environment, As in the case of performing a complex calculation using a pen and paper, in this case part of the calculation occurs outside the confines of the brain, i.e. cognition takes an active role in the process but involves a mental act, i.e. cognitive mental processing, where the brain integrates a cognitive chain through which it receives cognitive and motor feedback loops (Wilson and Clark, 2005: 43).

Moreover, the idea that all kinds of processes that transcend the boundaries of consciousness play a crucial role in cognitive processing, is widely accepted so that mental processes can occur in a complex task regardless of whether the individual is aware of their implementation or not, and thus the individual learns and perceives through the environment around him (Clark and Chalmers, 1998: 65)

To illustrate the mechanism of accompanying the extended mind of the learning process, we can include the example of learning mathematical calculations: the child learns to count using his fingers in kindergarten, and later in school uses a pencil and paper to divide a complex mathematical calculation into less difficult subtasks, and will use a calculator to calculate the cosine of the angle in problem-solving tasks, and all these cases in which the mind empties the small tasks of the environment, If this child becomes an accountant, he will create an integrated budget using a calculator or an Excel spreadsheet to perform addition, subtraction, finding averages, and other calculations that allow him to match large values that his brain can do, but delegates to objects and tools in the environment to deal with them. Clark, 2008: 49)

The mind embodies the idea that its abilities are not limited to the brain only, but extends to include external tools and the surrounding environment, and depends on the use of technology and external tools as an extension of the capabilities of the human mind, and according to this concept, external tools such as computers, smartphones, notebooks and agendas, can enhance the mental abilities of the individual, contribute to expanding the scope of memory, thinking, arithmetic, learning and innovation, Thus, the knowledge, skills and experiences stored in these tools form an integral part of the human mind, the mental and cognitive process of man transcends the limits of the brain and expands to include external tools and the surrounding environment, and accordingly, the extended mind is a model that suggests that the tools and technology used in daily life, become an integral part of the mental process and enhance the individual's cognitive abilities (Wilson, R. A., & Clark, A. 2009:55-77).

The concept of the extended mind came from an idea that is almost a myth, from the fact that our cognitive set and personal beliefs extend outside the body, such asthe informational contents of the Internet, just because we have a mobile phone connected to the Internet, but the theory of the extended mind requires the availability of conditions under which we are a group of external resources part of the environmentally extended mind, and in that Clark and Chalmers (1998) adopt a set of standards that take into account the accessibility, portability and reliability of external resources.

1 The resource must be available and usually called.

2 Any information obtained from the non-biological resource must be automatically authenticated in one form or another, that is, be welcomed by the individual himself and should be considered trustworthy as something clearly retrieved from biological memory.

3 Information from the source should be easily accessible when it is needed at any time (Clark, 2010: 57)

These criteria guide and constrain an individual's feelings about the type of artificial and biotechnological associations relevant to extended mind formation because they determine the range of situations under which an individual perceives that the capabilities generated by an external resource are most likely those of an individual or object. (Wilson and Clark, 2009: 43) .

The extended mind has many important characteristics, including the following:

1. Mental Space Extender: This aspect focuses on the idea that the extended mind makes use of external tools to expand the space of the mind and improve the performance of mental processesAnd I can Use tools such as computers and smartphones to store information and data and provide assistance with complex calculations and mental processes Clark, 2008:82))

2. External Memory Enhancer: This aspect refers to the idea that the extended mind makes use of external memory that enables it to store information and data extensively and quickly access it. Electronic devices such as a computer and smartphone and storage media such as hard drive and cloud can be used to provide additional storage space (Clark & Chalmers, 1998:43).

3. Sensory Extender Abilities: This aspect suggests that the extended mind makes use of external tools to expand its sensory abilities. Modern tools such as smart glasses and sound microphones can be used to improve sensory interaction with the surrounding environment and enhance the quality of sensory input (Clark, 1997:55).

4. Motor Extender: This aspect refers to the idea that an extended mind can use tools to expand its motor capabilities. For example, keyboards, mouses, and touch devices can be used to interact with computers and the Internet, and control programming interfaces (Hurley & Noe, 2003:44).

It is a question of expanding the concept of "mind" beyond the individual himself, that is, mental processes are not only created within the individual, but also outside him, which are functional states insofar as they are defined by the cause-and-effect relationship with a particular function (a relationship that includes a set of material elements, even without a life of its own), that is, mental states are the last link of a long chain of causes that ultimately have these processes as an effect. Other links in the chain can range from physical skills and sensory skills to a calculator, computer, watch or cell phone, all of this insofar as they are elements that allow us to generate what we know about intelligence, thought and beliefs (Tauzin, Tibor; Gergely, 2018 : 87)

Thus, our minds extend beyond the boundaries defined by our brains, and even beyond our general physical boundaries so what is the subject, and this not only changes the way the mind is understood but also the definition of the meaning of the word I (understood as an extended self), as well as the definition of behavior itself, because it is no longer planned to act rationally, as it is about learning which is the result of practices in the physical environment. As a result, the individual is more than just a subject, for this reason, many consider this theory a radical and active determinism. The environment no longer shapes the mind, but the environment has become part of the mind itself: cognitive states have a broad position and are not limited to the narrow borders of the human body (Gregorio & Parera, 2005: 76).

(Chloe Amor, 2011) looks at how the extended mind interacts with technology to extend the size of the self and mind and how this affects the lives of individuals, raising the level of perception with the environment and with more full awareness to develop thought and knowledge processes within the information processing system and then reach a degree of mastery (Amor, 2011: 43).

In general, the work of the body in the best way with the presence of the individual in external environments is the path of his development, which calls for advocating for nature-friendly biological architecture, which is characterized by its wide windows and green spaces as basic elements in the construction plans for spaces that meet the need of individuals to reflect on difficult concepts, away from what distracts, as well as their need for fruitful discussions and an extension of mental processes outside the brain, so they are a variety of ways through which social interaction with peers and experts can be made, or through group training, as It contributes to learning, analysis, and collective thinking that can be employed in the distribution of cognitive load. (Jessica Wynne, 2021:43)

Chalmers notes that the human mind is a miracle in itself, as all the computers in the world that can process commands reach 6.4 quantillions (10 billion million operations per second or 10 to the power of 18), but this number is almost equal to the number of nerve impulses that a human brain sends every second, which means We need all the computers in the world to process the information that the human mind processes every second. (Clark, & Chalmers, 1998:36)

Thus, the contemporary man is the most fortunate compared to the past because of the elements of this era in technological progress, and the knowledge of knowledge, and the innovationof more applications, and devices that can interact with the human mind, and technology has succeeded in recent years in probing many of the secrets of the human mind, and its components, and sections, and how it works, and its communication, and its control over allparts of the body, Rather, technology has intervened to treat the deficiencies of mental and vital functions, and made the human being more efficient and effective, and able tointegrate with its development materially and morally. (Clark, & Chalmers, 1998:39)

Research conducted by the US Defense Research Projects Agency has succeeded in reaching an understanding and analysis of brain signals, which are advanced technologies to deal with the human mind, opens up advanced horizons in theuse of brain signals to deal with electronic devices, and communicate with them, wirelessly, but this wireless form of communication with the human mind will not be like traditional wireless communication, but will be Directly between human minds, technology will allow the human brain to exchange information, whether directly from one mind to another, or between the human mind and information networksor satellites (Ashraf, 2015: 3).

The success of scientists at the Max Planck Institute in Germany to produce a silicon chip that can stimulate neurons to produce a bilateral interstitial connection to transmit information by converting the nerve impulse from the mind intoan electronic signal and vice versa, promises the possibility of connecting any electronic device to this cell, whichpervadesas an intermediary between the mind and the device, and the possibility of receiving and understandingm and interpreting nerve mental impulses and sending a signal understood by the nerve and thus the brain (called Scientists This cell, the transistor neuron, could be the nucleus for further research and projects dealing with communication between humansand electronic devices (Ashraf, Ibid. 2015: 5).

The extended mind and other minds

There is a difference between the extended mind and other minds according to the theory of the extended mind, as the extended mind is not limited to the brain or body, but extends to include the surrounding environment and the outside world, including the tools and technology that we use, while other minds such as the traditional mind, which is also known as the biological mind and indicates that cognitive processes occur inside the brain and do not exceed the skull, and there is the physical mind that describes the mind as just physical processes in the brain and can be fully understood through the study of Physics is unlike the immaterial mind, which describes the mind as having an immaterial essence that cannot be reduced to the physical processes of the brain and is independent. (Clark, 2005: 76).

Theories that explained the extended mind

The theory of the extended mind (extended - predictor)

The theory was founded by philosophers Andy Clark and David Chalmers, who presented it as an idea in a 1998 essay titled "The Extended Mind", with arguments to support it.

The extended mind according to the theory is a productive mind, expanded, predictive, connected to the ocean is not separated from the self, as the theory explained some cognitive phenomena that cannot be easily explained through the classical view of the mind, in addition to that the development of the individual and even the expansion of his perceptions and memory does not depend on himself and his components only, but requires continuous interaction with the outside world to improve his ability to solve problems with high efficiency, simple effort and record time, Technology also has a large and increasing role in shaping and expanding cognitive abilities in an appropriate manner that does not tend to be excessive and dependent.

The researcher adopted the theory of the extended mind of Andy Clark and David Chalmers (1998) to explain this concept, as well as the researcher adopted it in her construction of the tool for measuring the extended mind. This is because the theory of the extended mind supports the real hypotheses that would address the problem of the study, as well as fit the study sample in terms of the level of tasks entrusted to them, and the duties entrusted to them, It is also one of the modern theories in psychology, and this is what increases the importance and originality of the study _ as far as the researcher knows _.

Theory of Extended Mental Processes Beyond the Brain1998

The theory of the extended mind began its formal development in 1998, from the work ofthe British philosopher Susan Hurley, who suggested that mental processes should not necessarily be interpreted as internal processes, as the mind does not exist only between the narrow boundaries of the skull, andcriticized, in her book "Consciousness at Work", the I/O perspective of traditional epistemology, and the publication of philosophers (Andy Clark and David Chalmers, 1998). A decade later, in 2008, Andy Clark published The Scaling of the Extended Mind, which ends with the introduction of the extended mind hypothesis into discussions of philosophy of mind and cognitive science (76): Houghton Mifflin Harcourt, 2021.

In such a scenario, the container replaces the body, which generates the nutrients that the brain needs, from which it derives its well-being and ability to gather sufficient information to understand the environment around it and the different senses. Such as sight, hearing, touch, taste, smell, and reception of deep sense, which help us move in our surroundings smoothly, and when science fiction makers present this image, they implicitly assume that dedicating this vessel to the task of satisfying the basic needs of the brain will allow all its energy to be devoted to the highest levels of intelligence and genius (54): Colwell, J. , 2000)

We conclude from the above that the theory of mental processes extending outside the brain is broader than the theory of the extended mind, but that the extended mind arose from it, cognitive processes according to the theory of mental processes, can exceed the limits of the individual to include tools and even elements of the surrounding environment, but they do not necessarily require that they be a permanent part of the individual's cognitive system, and therefore it is interactive with the environment and a good investor of its elements, but it does not affect his beliefs and does not change his principles

The conclusion of this section comes through the clarification of the concepts of the extended mind and its characteristics and the difference between it and other minds, and then a presentation of theories that explained the extended mind, including the theory of the extended mind (expanded, predictive) and the theory of extended mental processes outside the brain 1998

Literature Review

1 / Neuro-Linguistic Studies

The researcher did not find studies that dealt with the effect of neuro-Linguistic as a cognitive-behavioral training program in a sample such as the current study sample

However, there are many previous studies revolving around neuro-Linguistic that provide an overview of this field, below are some previous studies and associated academic sources:

Study of Hydy(2001)

The Effect Of Using neuro-Linguistic Strategies In Preparing Educational And Psychological Counselors

(The effect of using neuro-Linguistic strategies in the preparation of educational and psychological counselors)

The study aimed to find out the effect of using neuro-Linguistic strategies in the preparation of educational and psychological counselors, and the study was conducted at the National Center for Health Services on (15) counselors who were diagnosed as below the required level at work

The results resulted in the effectiveness of using neuro-Linguistic strategies in preparing educational counselors and psychologists and they have experience in addressing the pressures and problems of the counselors (Hyde, 2001: 18**).**

C _ Studies dealt with the extended mind:

The researcher did not find Arab or foreign studies dealt with the extended mind of the modernity of the variable as far as the researcher knows.

Balancing previous studies

Through the researcher's review of previous studies that dealt with the variables of her study, she discussed them in terms of (goals, sample, tools and results reached by the studies), and the studies varied in the nature of their variables, and the researcher did not find a study that dealt with the variables included in her current study: -

Objectives: The previous studies have been similar to the current study in terms of the use of neuro-Linguistic in achieving the objectives of the study as follows: The study (Satir&etal 1991) aimed to develop structures of formal models for prediction and estimation that describe how the human brain is employed and how it does notwork under the education of individuals using a set of NLP techniques, while (Hyde 2001) To know the impact of the use of NLP strategies in the preparation of educational and psychological specialists, and the study of Maadidi (2005) aimed to find out the impact of the linguistic programming program in the development of cognitive concepts among middle school students, either the study of Abdul Razzaq aimed to find out the impact of two methods of guidance neuro-Linguistic and self-evaluation in the development of moral intelligence among primary school students, And the study of Janabi aimed to build a measure of critical thinking among middle school students, to identify the impact of the neuro-Linguistic program on some critical thinking skills among middle school students, and the study of Abdul Rahman aimed to identify the impact of the neuro-Linguistic program in the development of creative thinking and some problem-solving skills among students of teacher preparation institutes in Salah al-Din Governorate, Al-Moussawi's study aimed to identify the impact of neuro-Linguistic in developing the psychological endurance of kindergarten teachers, Mohammed's study aimed to identify the effectiveness of a program based on neuro-Linguistic in teaching psychology to develop psychological awareness and withstand academic ambiguity among visually impaired students in the secondary stage, while the current study used neuro-Linguistic to investigate its impact on the extended mind of the supposed sample forces.

Sample: In terms of sample size, it varied between (100-400) sample size from one study to another according to the objective and nature of the study, in the study of Heidi the sample was educational and psychological counselors were diagnosed below the required level at work.

Tools: Studies varied in the nature of the tools used, in the study of Satir and others, a program was built along with NLP techniques, and in the study of Heidi, a program was built in NLP, as the skills they lacked were diagnosed, either in the study of Razzaq, the moral intelligence scale and the neuro-Linguistic program were built, and in the study of Al-Janabi, the neuro-Linguistic program and the critical thinking scale, The study of Abdul Rahman was the tool neuro-Linguistic program and the scale of creative thinking, either Al-Mousawi was the tool training program for neuro-Linguistic and psychological endurance scale, and the study of Muhammad was the tool program for neuro-Linguistic and psychological awareness scales and endure academic ambiguity, but in the current study was the tool program for neuro-Linguistic and the scale of the extended mind.

Results: The results of previous studies were similar in the effectiveness of the programs used in them, as the results of the study of Satir and others indicated that the emotional state pressure of the study sample is much better than it was before the program, either what resulted from the study of Heidi possession of the study sample skill in solving problems and facing pressure, and in the study of Razzaq, the results resulted in the effectiveness of the counseling program according to the methods of neuro-Linguistic and self-evaluation in the development of moral intelligence among primary school students,

The results of the study of Janabi was that the neuro-Linguistic program has a significant impact on the development of critical thinking abilities, either the study of Abdul Rahman was the results that the neuro-Linguistic program had an impact on the development of creative thinking as well as the development of problem-solving skills in the study sample,

Aspects of benefiting from previous studies

In light of the similarities and differences between the current study and previous studies, the benefits of the studies can be identified.

1 – Determine the hypotheses of the study and formulate them in their final form.

2_ Crystallizing the problem and identifying its questions.

3_ Building the extended mind scale, according to the theory of the extended mind of Andy Clark and David Chalmers (1998) and adapting it according to the study sample.

4_ Determine the basic features of the proposed program.

5_ In the selection of the study sample, it seems that the academic and professional scientific field in the Iraqi environment is devoid of any study that tries to know the impact of neuro-Linguistic on the extended mind of the supposed sample.

Methodology and Procedures

This chapter includes determining the research methodology used in it, a description of the field study procedures, carried out by the researcher to achieve the research goal, and includes determining the method used in the research, the research community and its sample, research tools, as well as methods of statistical analysis of data, then a presentation of the steps for preparing the program used in the research.

As follows:

I. RESEARCH METHODOLOGY

There is no doubt that the nature of the problem, and the goal that the research seeks to achieve, and the hypotheses emanating from it, are the ones that determine primarily the appropriate research methodology to address it, and given the nature of the current study, the appropriate approach in order to achieve the goal of the research The researcher adopted the experimental approach because it is the appropriate approach to achieve the goal of her research :

The researcher used the experimental method, which illustrates the impact of the experimental variable, which is the program on the dependent variable, which is the extended mind of the supposed sample in the province of Baghdad, the capital, which represents the headquarters of the formations of the forces of the aforementioned device, and the experimental method is one of the most accurate types of methods and the most sufficient in reaching reliable results, and choose the appropriate design for any research depends on a number of foundations, Including the nature of the problem taken by the researcher subject of the experiment, and the conditions of the sample that he chooses, which determine the type of design and impose its image. (Al-Zobaie et al., 1981: 108)

II. RESEARCH PROCEDURES

Experimental Design

The choice of the type of experimental design is one of the first tasks that fall on the researcher when conducting his experiment, because it is the basis for reaching accurate results that can be trusted. Al-Zobaie et al., Ibid.: 94)

The experimental design is a program and a work plan for how to implement the experiment, that is, it is the part that summarizes the logical structure of the experiment, and includes the number of examiners, an explanation of the variables, how to distribute them to the groups, and adjust the other variables. (Said,1990: 152)

After the researcher surveyed the opinions of some professors specialized in measurement, evaluation and educational psychology, as shown in Appendix (4), and briefed on a set of experimental designs, which varied in their advantages and limitations in terms of documenting and controlling the extraneous variables affecting the dependent variable, which will usually accompany the independent variable, so the researcher used in the current study and according to the opinion of the arbitrators professors one of the types of experimental designs, Experimental design between groups (Between-Subjects Design), a design that requires the presence of at least two groups (an experimental group subject to the program, and a control group not subject to the program), it is a design that allows comparing the impact of the program on the dependent variables between the two groups, as the current

research consists of a cognitive behavioral training program for neuro-Linguistic and represents the independent variable, while the extended mind represents the dependent variable, this design was adopted for its suitability to the variables of its study, According to the nature of the current study problem and its planned goal for implementation.

Population Research Community

The first step that should be adopted when selecting the research sample is to determine the population in which the phenomenon is to be studied. (Al-Zobaie et al., 1981: 76)

The statistical population of the research refers to the total group with elements, to which the researcher seeks to generalize the results (related to the problem) (Odeh and Malkawi, 1992: 159).

The current research population was determined by the assumed sample in the province of Baghdad , the capital, for the year (2023-2024), and the researcher was not given the exact size of the population for security reasons for the sample.

Research Sample: (The Research Sample)

The sample means the part of the population on which the study is conducted, the researcher chooses it to conduct his study on it, according to special rules, according to which it is properly representative of the community, so that it bears its common characteristics (Melhem, 2000: 37) (Kandilji, Al-Samarrai, 2009: 255).

The increase in the number of sample members is the preferred framework in its selection, the higher the sample size, the lower the probability of standard error (Ebl, 1972: 290).

The current research sample, numbering (66) individuals, was selected in a simple random way from the population of the assumed sample and then randomly selected by lottery, by (33) individuals for each of the two groups used in the research.

III. RESEARCH TOOL

Since the current research aims to find out the impact of a cognitive behavioral training program for neuro-Linguistic in the extended mind of the assumed sample, so the researcher has built the extended mind scale according to Andy Clark and David Chalmers (1998), and the following is a description of the scale and how to extract its psychometric properties:

The Extended Mind Scale

To measure the extended mind , the researcher built a scale for this variable according to Andy Clark and David Chalmers (1998), as this scale consists of41) paragraphs, paragraphs can be answered with the five-point range and the following gradient alternatives: (strongly agree - agree - neutral - disagree - strongly disagree), was given degrees (1-2-3-4-5) respectively.

Because the researcher could not obtain ready-made measures to measure the variable (extended mind) for the sample of the security forces high-tasking , the Iraqi Counter-Terrorism Service, as a model from the Iraqi environment (as far as the researcher knows), so the researcher resorted to building a scientific tool to measure this variable, and both yen and yen (Aleen & yen), indicate that the process of building any scale must go through basic steps, The procedures for building the scale for the research variable will be reviewed.

For the purpose of building the extended mind scale, the researcher followed the following steps:

First: Defining the concept of the extended mind according to Andy Clark and David Chalmers (1998), who defined the extended mind as "an interactive mind that shares its mental interactions and processes with the influential physical environment through external tools such as books and computers." (As mentioned in the definition of previous terms, studies and literature).

Second: Preparing and drafting paragraphs for the extended mind scale in their initial form: In light of reviewing the literature related to the extended mind variable, according to Andy Clark and David Chalmers (1998), as well as reviewing the history of the current research sample (the Iraqi security forces with all kinds of tasks and the Counter-Terrorism Service Law No. (31) of 2016), the paragraphs of the scale were drafted, in the style of self-assessment (Self Report).) which depends on the fact that each paragraph has a full meaning followed by the number of graded alternatives, and the respondent to choose the alternative that applies to him the most and the following was taken into account the process of preparing the initial version of the scale:

A Wording of paragraphs in the first person (Thorndike, 1999: 99).

Some paragraphs are positive and some are negative (Allam, 2000: 98).

c) The number of paragraphs of the scale in its initial form is more than the number prescribed in its final form, as some of them may be excluded during statistical analysis (Thorndike, 1999: 300).

D. Avoiding putting two ideas in one paragraph because it may lead to the inability of the examinee to choose the possible answer (Faraj, 1997: 201).

The answer consisted of five alternatives (strongly agree, agree, neutral, disagree, strongly disagree) and the weights of the alternatives range between (5-1) for positive paragraphs and (1-5) for negative paragraphs.

Based on that, the paragraphs of the extended mind scale were prepared in its initial form by (41) items, to suit the Iraqi society and the research sample.

Third: Response alternatives and how to correct the extended mind tool

The researcher adopted the five-way chart to estimate the response on the paragraphs of the tool, namely (strongly agree, agree, neutral, disagree, strongly disagree) and the weights of the alternatives ranged between (1-5), Appendix (5)

Fourth: Preparing the instructions of the extended mind scale

The researcher prepared the instructions of the extended mind scale, ie how to answer the paragraphs of the scale, and give an example that illustrates this, and urge the respondent to accurately answer, and not to leave any paragraph without an answer, as the researcher explained that the answer will be used for the purposes of scientific research only, so there is no need to mention the name, and the researcher hid the goal of the scale so that the respondents are not affected by it when answering, as the literature in this regard indicates that "the correct naming of the scale may make the respondent falsify his answer" (Al-Zobaie, 1981: 74).

Fifth: Determining the validity of the scale and its paragraphs for the extended mind tool:

After the scale was prepared in its initial form, Appendix (5) was verified logical honesty by presenting to experts and arbitrators in all disciplines of psychology, to know their opinions on the validity of its paragraphs, and the clarity of paragraphs, and to judge the appropriateness of the alternatives to the scale used, and in light of their opinions and observations, Appendix (4) adopted (41) paragraph out of (64) paragraph after it has been Modifying and deleting some paragraphs according to the opinions of the arbitrators on the need to reduce to ensure that the respondent is not bored and bored during the application.

Sixth: The experience of clarity of the instructions and paragraphs of the scale for the extended mind variable (exploratory application):

To verify the clarity of the paragraphs of the extended mind scale and its instructions to the respondents, the researcher applied the research tool on a sample of (30) individuals from the assumed sample, in the province of Baghdad, the capital, and the researcher took into account that the exploratory sample includes all the types of the supposed sample mentioned.

It is necessary to verify the extent to which the target sample understands the instructions of the scale and the clarity of its paragraphs and to identify the difficulties they face in responding (Faraj, 1980: 160).

He asked them to read and answer them and a statement of their opinions about their clarity and understanding of their meanings and show through that the clarity of the instructions and content of its paragraphs, the researcher has deliberately applied the scale of the extended mind on the sample in attendance through a seminar for the members of the supposed sample held for them in the province of Baghdad, the capital, has shown the clarity of instructions and paragraphs and the average answer (12) minutes ranged between (10) minutes as a minimum and (15) minutes maximum, Until it was confirmed to be correct.

Seventh: Statistical analysis of the paragraphs of the extended mind scale: The statistical analysis of the scale aims to reveal its psychometric properties and its purpose is the survival of appropriate paragraphs and the exclusion of inappropriate paragraphs (Ghiselli et, 1981: 421)

Because statistical analysis of paragraphs is one of the basic steps for preparing research tools and conducting the process of statistical analysis of paragraphs, the adoption of paragraphs that have good statistical characteristics makes the scale more honest and stable (Anastasi, 1976: 192).

It is also more important than logical analysis because it checks the content of the paragraph in measuring what it is prepared to measure, by checking some of the standard indicators of the paragraph, while logical analysis of it reveals the extent to which it is ostensibly related to the attribute that was prepared to measure it only (Al-Kubaisi, 1995:13).

This procedure is necessary to distinguish between individuals in the measured characteristic, and the researcher relied on the opinion of Anastasi (Anastasi, 1997: 19), in that the appropriate statistical analysis sample consists of (400) of individuals reveal the accuracy of paragraphs in measuring what was developed for measurement, in order to reduce the impact of chance, and statistical analysis procedures included finding paragraph discrimination for the two peripheral groups.

After extracting and verifying theicometric properties of the extended mind scale and using factor analysis and improving the second-order model, the five paragraphs (16,27,33,34,36) were deleted, the scale in its final form consisted of (36) items according to the following five graded alternatives: (Strongly agree - agree - neutral - disagree - Strongly disagree), the total score for each respondent was calculated on the scale from the highest score to the lowest score, thus being the highest score (180) and the lowest score (36) and thus the tool is ready for application

Program Application

After applying the extended mind scale and determining the experimental group to which the program is applied, and the control group by selecting them randomly, and applying the extended mind scale as a pre-test for the experimental group, and then conducting a post-test for the experimental group and then analyzing the data.

Statistical Instruments

For the purpose of verifying the objectives of the research, the researcher has used the following statistical methods, using the Statistical Program for Social Sciences (SPSS), which are as follows:

1- TheT test for one sample, not the significance of differences test
2- The T-test for two independent samples (T-test) to test the difference between the scores of the upper group and the lower group in extracting the discriminating power of the paragraphs of the extended mind scale, as well as to test the equivalence of the experimental and control group in chronological age and functional service.
3- Confirmatory factor analysis: used to ensure the structural honesty of the extended mind scale, as well as to verify the validity of the model and the use of indicators of good conformity and ensure that the data conform to the theoretical model.
4- Pearson's correlation coefficient (Person) has been used to calculate the following:
1- A to extract the stability by re-testing method of the extended mind scale.
2- B to find the correlation between scores on the extended mind scale.
3- Cronbach alpha equation for internal consistency: to extract the stability of the two extended mind scales.
4- Analysis of binary variance to identify the differences in the extended mind, according to the variable of chronological age and functional service.
5- Use of the Schiffet test: to find out the significance of the differences between the averages of the extended mind scale.
6- Simple regression analysis: to know the contribution of the extended mind to the assumed sample .
7- Chi-square test: use in factor analysis (indicators of good conformity)
8- The Shapiro-Wilk test was conducted to assess the distributional normality of each component within the soft power scale.
9- A two-tailed independent samples t-test was applied to identify statistically significant differences between the experimental and control groups across the dimensional variables.
10- Levene’s test for homogeneity of variances was employed to verify whether the assumption of equal variances was met between the two groups.
11- Using Cohen's Test to infer the effect size of the cognitive-behavioral training program for engineering on the soft power scale. The researcher used Cohen's Test
12- The Shapiro-Wilk test was conducted to assess the distributional normality of each component within the soft power scale.
13- A two-tailed independent samples t-test was applied to identify statistically significant differences between the experimental and control groups across the dimensional variables.
14- Levene’s test for homogeneity of variances was employed to verify whether the assumption of equal variances was met between the two groups.

CONCLUSIONS

In light of the results of the research, and after verifying the validity of the hypotheses of the study, and achieving the objective of the research, the researcher reached a number of conclusions as follows:

1 The effect of the cognitive-behavioral training program for neuro-Linguistic in the extended mind of the assumed sample was investigated and there was a clear effect.

2 There are statistically significant differences at the level of (0.05) between the averages of the experimental group scores, and the averages of the control group scores in the extended mind , and the difference is clear .

Recommendations

In light of the results reached, recommendations can be made to officials and those in charge of the security operation in the relevant institutions :

1- The need to train the assumed sample on neuro-Linguistic techniques and link them to their tasks in terms of strategic thinking, analysis of situations, challenges, behavioral patterns and psychological factors that affect terrorist elements, and help them make effective strategic decisions to combat terrorism.

2- Working on applying the results of psychological and security studies to serve the security institution, especially negotiation and communication programs to enhance those skills of the assumed sample with high efficiency to deal with extremist groups and suspected individuals effectively and flexibly.

3- The need for continuous education in psychoanalytic mechanisms to increase the capabilities of the supposed sample to analyze the psychological behavior of terrorists and identify the factors that affect their development and affiliation with terrorist organizations, so their awareness increases on how to analyze the psychological, social and economic factors that affect the recruitment of those individuals or groups as organizations, and even enhance the strength of their affiliation as well.

4- The need to pay attention to exercises that will increase emotional control, which enhances the capabilities of the supposed sample in dealing with difficult situations with high discipline and emotional balance that reduces anger and tension, which raises the ability to act appropriately in the face of terrorist threats .

5- Applying the cognitive-behavioral training program for neuro-Linguistic in the extended mind of the assumed sample systematically within the curricula of physical exercises, especially after the positive results obtained by the study .

Recommendation

The researcher suggests conducting more studies to complement the benefit :

1- Conducting a similar study of the current research on other categories, and comparing its results with the results of the current research.

2- Conducting a program for higher psychological operations and investigating their impact on the variables of the current research .

3- Designing various training programs to develop the extended mind of the supposed sample .

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