

Induction of Cognitive Processes from Semantic Referents Based on Recognition and Visual Priming with a Tragic Outcome*

[English Version]

Inducción de procesos cognitivos a partir de referentes semánticos basados en el reconocimiento y priming visual con desenlace trágico

Indução de processos cognitivos com base em referentes semânticos com baseamento no reconhecimento e priming visual com resultado trágico

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Abstract

Objective: to establish if the induction of cognitive processes – from semantic references – allows an improvement in the response of Culture of Legality concepts as instruments of educational models to prevent disruptive and criminal behaviors in students with attention deficit and conduct disorders.

Methodology: a descriptive-explicative exploratory study, with two focus groups composed of 11th-grade students who underwent a semi-structured interview,

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the application of the Antisocial and Criminal Conduct Scale and were part of the control group workshops. **Results:** from the 19 items evaluated, the procedure showed an improvement in 8 aspects, worsening in 4 items and 6 items that did not show any changes. It evidenced that the induction of processes from semantic referents reflects a general way of learning in systems of perceptive representation that can produce deep cognitive modifications. **Conclusions:** semantic induction through recognition and visual priming in the learning of Culture of Legality, is a method that affects the cognitive structuring of the student and its effectiveness depends on the degree of perceptual overlap between the first stimulus and subsequent stimuli.

Keywords: Learning; Cognition; Recognition; Semantic Induction; Tragic outcome.

Resumen

Objetivo: establecer si la inducción de procesos cognitivos, a partir de referencias semánticas, permite una mejora en la respuesta de los conceptos de la cultura de la legalidad como instrumentos de modelos educativos para prevenir conductas disociales y criminales, en estudiantes con déficit de atención y trastornos de conducta. **Metodología:** estudio exploratorio descriptivo-explicativo, con dos grupos focales integrados por estudiantes de 11° grado que se sometieron a una entrevista semiestructurada, a la aplicación de la Escala de conducta antisocial y criminal y formaron parte de los talleres del grupo de control. **Resultados:** se encontró que de los 19 ítems evaluados el procedimiento mostró una mejora en 8 aspectos, 4 ítems de empeoramiento y 6 ítems que no mostraron cambios. Se evidenció que la inducción de procesos a partir de referentes semánticos refleja una forma general de aprendizaje en los sistemas de representación perceptiva que puede producir modificaciones cognitivas profundas. **Conclusiones:** la inducción semántica a través del reconocimiento y priming visual en el aprendizaje de la cultura de la legalidad, es un método que incide en la estructuración cognitiva del estudiante y para su efectividad depende del grado de superposición perceptiva entre el primer estímulo y los estímulos subsiguientes.

Palabras-clave: Aprendizaje; Cognición; Reconocimiento; Inducción semántica; Desenlace trágico.

Resumo

Objetivo: estabelecer se a indução de processos cognitivos, com base em referências semânticas, permite melhorar a resposta dos conceitos da cultura da legalidade como instrumentos de modelos educacionais para prevenir comportamentos disociais e criminais, em alunos com déficit de atenção e distúrbios de comportamento.

Metodologia: estudo exploratório-descritivo-explicativo, com dois grupos focais compostos por alunos do 3ro colegial submetidos a uma entrevista semiestruturada, à aplicação da Escala de Comportamento Anti-Social e Criminal e fizeram parte das oficinas do grupo controle. **Resultados:** constatou-se que dos 19 itens avaliados, o procedimento apresentou melhora em 8 aspectos, 4 itens de piora e 6 itens que não apresentaram alterações. Foi evidenciado que a indução de processos a partir de referentes semânticos reflete uma forma geral de aprendizagem nos sistemas de representação perceptiva que podem produzir profundas modificações cognitivas.

Conclusões: a indução semântica por meio do reconhecimento e do priming visual na aprendizagem da cultura da legalidade, é um método que afeta a estrutura cognitiva do aluno e, para sua efetividade, depende do grau de sobreposição perceptiva entre o primeiro estímulo e os estímulos subsequentes.

Palavras-chave: Aprendizagem; Cognição; Reconhecimento; Indução semântica; Resultado trágico.

Introduction

This article presents exploratory research with 11th-grade students, which consists of proposing a model of specialized social education based on the creation of a neuro-curriculum to counteract the effects of the disruptive behavior disorder, attention deficits, hostile attribution syndrome, and moral disconnection.

Young people who suffer from this type of syndromes frequently exhibit oppositional, defiant, aggressive, and disobedient behaviors. The students with attention deficit and disorders were selected for the research, as they have a higher level of probability of presenting difficulties in their learning compared to the understanding and acceptance of the norms and the culture of legality.

The research establishes, in the first stage, that in these young people there is a rupture between the centers in charge of designing laws and the ones following them. This lack of awareness, rejection and conceptual difficulty, impacts their understanding, their interest and makes them vulnerable to violence. It also affects the way in which they structure their legal rationality and fully exercise their rights and citizenship.

This generated a need to investigate from a second stage, thinking about the role of the educator and the possibility of generating a solution to the problem found in relation to attention deficits and disorders. These disorders affect so many young people, who are prosecuted for crimes each year. A reality that questions the effectiveness of educational and institutional models in creating the appropriate cognitive referents, to inhibit criminal or fraudulent behavior in young people.

The preparation of the instruments and methods of the second stage was carried out with the application of a pre and a post-test, which demonstrated a relation between the activation of the cognitive and neurolinguistics systems through semantic referents. For this study the assumptions of the theory of cognitive configuration models are used, the relationship between subject/object and the common structure of recognition of the form, background, and figure of the object, as well as the degree to which these spatial relationships deviate from the prototype 'average' object.

The models of recognition by cognitive configuration help to explain how mental referents are created at the level of meaning and significance based on a semantic category. They have been especially useful in the field of facial recognition Diamond and Carey (1977) and Rhodes, Brake and Carey (1987), since the research supports the thesis that the strongest effect on the behavior of

young people comes from their cultural context; following the logic of the configuration models, one can explain how the extent to which the relationship between norms, illegality and their incomprehension, affect how much those relationships deviate from the prototype established by the Culture of Legality, influenced by the images they receive from the context.

On the subject of attention, the theories of the British psychologist Broadbent (1958) are followed, he defended the postulate that selection takes place in an initial phase of processing; and in order to understand how it works, he proposes a model of the system of attention that contains a channel of limited capacity whereby a certain amount of information could pass. His research makes it possible to determine that sensitive inputs carry out a screening process to allow only the information they consider most important to pass through.

This factor explains why young people are vulnerable, since they do not have references that allow them to rationally process the information that comes from their context and especially in the exclusion zones where the evidence of disruptive disorder is more critical, because of the greater influence of subcultures and countercultures. In the classroom, the problem becomes a learning barrier that manifests itself in the appearance of a parallel behavior, which can be compared with normal development.

Authors such as Bloomquist and Schnell (2005), affirm that the cases of children with problematic behavior who do not have educational interventions, exhibit an increase in their conflictive development towards their social interaction begin to act more conflictive in their social interaction. Besides, they attribute difficulties in psychological development, due to the lack of competencies and skills in certain areas. For Greene and Oliva (2009), the lack of cognitive abilities affects their understanding of the social environment, the resolution of problems, and the capacity to face adversity. In turn, the contributions made by Turecki and Tonner (2003) are taken as evidence, who propose that people may be trapped in certain schemes of thought and that such schemes become a cycle of conflicts. Finally, Geddes (2010) maintains that attachment is fundamental during these years for the creation of affective bonds, as it affects their emotional balance and social adaptation.

Theoretical and Conceptual Foundations: Cognitive Alterations and Disruptive Disorder in Adolescents

The research is based on the theoretical premise supported by Ruchkin et al. (2002), that violent environments together with cognitive development deficits in school and family disruption have an impact on the generation of Disruptive Behavior Disorder (DBD). Since it is a personality alteration that impedes the fulfillment of the basic norms for social coexistence and generates patterns of delinquent conduct, it must be taken into account, since its appearance and dynamics serve to explain and understand its relationship with the learning acceptance/rejection of legality.

The line of argument of theorists such as Déry et al. (1999) emphasizes identifying difficulties in communicative, social, executive and planning skills, attention, abstract reasoning, judgment, self-monitoring and motor control. The most important clinical correlations established from the disruptive disorder are; the consumption of alcohol and drugs by young people, showing that their behaviors tend to be related to impulsivity, aggressiveness, sensation-seeking and violent narratives.

This has an impact on the following aspects: (i) children's temperament, having the acquisition of oppositionist patterns as the most characteristic factor, with a low level of social adaptation; (ii) parental factors, with an inadequate parent-child relationship as the most common; (iii) family factors, which frequently appear in large households with little stability or cohesion; (iv) socio-economic factor; (v) community factors, especially in communities with high crime; (vi) and, finally, school factors, which manifest themselves in poor academic emphasis and changes in conduct and discipline. This means it is associated with factors that influence the learning of rules, norms and the incorporation of the principles of legality.

Now, because it is a cognitive syndrome, the disruptive factor has profound implications in behavior, and the ability to establish semantic and neuronal networks. Which in aggressive students presents the following characteristics: i) they carry out an analysis of the situation focusing more on their past experiences in similar situations than on the concrete facts of current reality; ii) they have a greater number of hostile attributions and iii) they present a deficit in the processing of information and in decision making.

Since the memory of the individual is distorted by the cultural panorama, it is taken into consideration that the problems come from their structural part and reach the young person who receives them without clear cognitive or moral barriers. This complex phenomenon is explained by Nadel, Campbell, and Ryan (2007) who demonstrate that there is an activation in the hippocampus

during the development of activities and tasks that involve semantic memory and remembrance. Whereas Campbell and Conway (1995) demonstrate in their work the important role that cultural patterns play in the restructuring and distortions of memory. These authors evidenced that the individuals measured in the groups tended to introduce in their contact with other cultures the typical factors of their tribal folklore. In the same way, they reorganized the sequences and introduced twists in the plot that were characteristic of their native stories.

This phenomenon also occurs in aesthetic preferences and artistic taste; the evolution of styles in music, design, architecture, drawing and other arts is a testimony of transformation of preferences. One generation rejects the other or at least creates some subtle look of approval or a period of gradual familiarization. For Huesmann et al. (1992), the issue becomes complex when it comes to normative beliefs and their acceptability or non-acceptability of a conduct, since norms are the instruments that serve to regulate human performance, through admissible or prohibited behaviors. From this point of view, it can be stated in the research that the students who have a greater reaction to the norms have beliefs that approve or justify such behavior, in this way, there is a direct relationship between the cognitive systems of reference and behavior.

From this perspective, theoretical efforts have focused on determining the relationships between disruptive or criminal behavior and the existence of beliefs and attitudes justifying it. According to Slaby and Guerra (1988), adolescent offenders who had precautionary measure had a significant association with illegal behavior, which becomes stronger as the age of the subject increases. The differences in the normative beliefs justifying illegality are those who establish their behavior, which in turn become justifiers of violence and aggression.

In this regard, Calvete (2008) determined in an investigation with adolescents that the scheme of justification of violence appears as an element that precedes aggressive and delinquent behavior. While Calvete et al (2014) focus their efforts on studying the relationship between the pattern of justifying violence and exposure to violence, concluding that witnessing violence is a predictive factor of aggressive behavior.

The above is associated with the learning processes about the way reality is perceived and acted upon. For this reason, the performance patterns of memory tasks are investigated, as they are considered a fundamental factor affecting dissociation and are directly related to the explicit and implicit retrieval of information in working memory. Explicit memory makes it possible to recall experiences, evoke situations and retain information as concepts, arguments, and theories (Schott et al., 2002; Schott et al., 2004, 2006); experiences may or may not be intentional and may be mediated by the production of free or motivated

memory; instead, implicit memory arises through the unintentional retrieval of information, data, and memories (Baddeley, 1999).

Thus, the so-called visual priming effect works as a stimulus in memory with a specific domain, affecting the way information is represented or directly in its meaning (Schacter and Tulving, 1994). Other authors such as Macbeth and López-Alonso (2007), maintain that priming can be a semantic and perceptual stimulus, whose origin comes from sensory, optic, olfactory and gustatory modalities.

The capacity of the stimulus depends on the possibility of coding, becoming superficial or deep when it is done from meaning comprehension.. Theorists such as Nilsson, Law, and Tulving (1988) defend the duration of the impact of priming, which may be conditioned by the variable of time, but argue that once it is imprinted into the memory, it can be remembered throughout life and serves to complete the understanding of new word roots. While Froufe (1997) argues that this relationship depends on time and the acquisition and recovery of stimuli with unequal impact on people, by other factors such as past experiences, significant learning or reiteration of the process.

In many cases this type of stage depends on the different conditions under which the handling of the retention processes was carried out: For example, a class development depends on the use of didactic resources, mastery and explanation of the contents, the possibility of retention, comprehensive significance of the data and; finally, the level of empathy with the subject.

Therefore, the decay or retrieval of information within the memory may be accelerated or delayed, depending on the deep or superficial effects of priming. For Tulving and Schacter (1990), the use of semantic priming can be affected by the use of coding operators, so that, during the appearance of stimuli and the recovery of information, it depends on the semantic organization of the same, in memory. This indicates that semantic priming requires conceptual processing of stimuli and is sensitive to information changes.

However, Mulligan and Hornstein (2000) argue that manipulations of attention during the coding process do not affect memory performance; even some theorists of this line of thought show that coding can be successful, even considering the problem of divided attention. In this sense, the investigations carried out by Baron and Eustache (2001) in the condition of superficial and intermodal coding of images and words, achieving a higher level of coding with the effect of priming. While Felser and Roberts (2007) used active vision and touch, they concluded that the stimuli studied facilitated coding in intramodal and intermodal conditions.

Methodology

A sample was identified with two focus groups made up of 11th-grade students, segmented in this way: 15 men between the ages of 16 and 17, 12 women between the ages of 16 and 17. These participants were given a semi-structured interview, along with a *Scale of Antisocial and Delinquent Behavior* questionnaire. Afterward, the intervention was carried out before and after with a control group, using a structured pre-test and a post-test form. The second session took the form of a workshop where they were induced through cognitive processes from semantic referents based on the recognition of key concepts related to the theory of the culture of legality, such as state, power, legitimacy, and authority. For this purpose, the visual priming with tragic outcome was used as a persuasive referent. After this intervention, a Post-test questionnaire was passed again to compare the results of the two stages.

The experimentation process is carried out following the method of Velten, which consists of reading a set of self-referred phrases that express pleasant or unpleasant experiences and involve situations with the subject under study in the classroom and the student's personality and negative thinking about the subject.

The autobiographical procedure of remembering highly pleasant or highly unpleasant personal experiences was also incorporated, being part of different induction methods, along with the viewing of films and the listening of musical compositions. The methodology used in the workshops was based on the Sociological Methodology (SM), depending on the questions asked by the students or the debate during the semantic induction process employing visual priming and tragic narrative.

Scope, Population and Period of Study

The target population was made up of young people between 16 and 17 years of age, of both sexes, who were in the 11th-grade at the López Michelsen High school with socio-economic stratum 2, and presented the syndrome of dissocial conduct disorder.

Complementary literature was reviewed grouping the reflexive axes in the following dimensions: a) Family nucleus, fragmentation, and violence (Factor I). This factor is composed of four items: A.1. Perception of growth, A.2 Painful life experiences, A.3 Experiences of depressive states and A.4 Episodes of fa-

mily dysfunction; b) The institution and its obstacles (Factor II). B.1. Childhood and relationship with parents, B.2. Problems in school, exclusion and lack of adaptation, B.3. Child labor experiences, and B.4. The street, group leaders and bad companions; c) The neighborhood and neighborhood associates (Factor II). C.1. Community, violence and poverty, C. 2 The feeling of security/insecurity, C.3. The experiences of exclusion; d) The experience of legal violation (Factor III). D.1. The street as a substitute space, D.2. Illicit drug use, and D.3. Challenging police authority; e) Legal violation (Factor IV). E) Identity and deviation, E.2. crime, and E.3. Reasons for breaking the law.

The process of analysis followed the principles of Grounded Theory proposed by Strauss and Corbin (1998). Continuous variables were expressed as mean and standard deviation. Questionnaire variables were treated as qualitative variables and expressed in absolute frequencies and percentages; the X^2 test was used for comparison. A $p < 0.05$ was considered as a value of statistical significance.

The Pre-test and Post-test assessments were carried out on 27 students of both genders; the participation of men (15) over women (12) was greater. The sample was selected according to the inclusion criteria of the research, in which it was evident that the participants had behavioral problems and many of them, family problems and issues in the context of their neighborhood.

Results

The results of the two stages, before and after the educational intervention (tabulated in tables 1 and 2) allow to differentiate three concepts: (i) changes in attitudes towards the acceptance of rules, (ii) changes in the general knowledge of the culture of legality and (iii) a knowledge of the implications of criminal behavior. In relation to attitudes, all percentages improved after educational intervention; just one item showed a worsening.

What stands out most about this block of thematic axes is that, in which only 31.9% correctly responded in the Pre-test and 37.8% in the Post-test, in relation to *Customs, rules and laws*. This indicates that, in the face of other aspects, such as *Maintaining Law and Public Order, The Rule of Law, Administration of Public Affairs and Culture of Legality*, the use of the induction of semantic references based on the recognition and visual priming with tragic outcome generated significant change.

As for the general knowledge of the culture of legality, it points out that from 8 raised items, 50% showed a significant improvement, 12.5% worsened and 37.5% had no changes. It highlights the increase of correct answers in the

post-test in the item *Most people know the laws and their individual rights*, with 89.7% success and in the item *Most people reject illegal behavior*, with 51.6%, demonstrating a major change.

In the knowledge section on crime and illegality, can be established as the most resistant area to change, only the item *Most people support the government agencies that enforce the law* presents improvement, and the other items, significant deterioration; such is the case of the item *Laws protect the rights of every individual as well as the well-being of society* that showed worsening, since only 62.2% were successful in the Post Test.

The item that has a lower percentage is *Most people reject illegal behavior*, with 16% on the Post test. In total, from the 19 items evaluated, it was shown that the procedure showed improvement in 8 aspects, 4 items showed worsening and 6 had no change.

Table 1. Sociodemographic Characteristics of the Population Studied

Variables	Pre-test (N=896)	Post-test (N=805)
Sex		
Men	15	15
Women	12	12
Age		
Median	15,60	15,92
DS	0,70	0,79
Academic level	Highschool graduate	Highschool graduate
11th Grade	14	14
Locality		
Bosa Alameda	27	27

Source: Author's

Table 2. Percentage of Students Who Answer Each Question Correctly in the Pre and Post-test

Ítems	Correct No.	No. Students (%)	P-value	% change correct answers	Rating effectiveness
Attitudes					
Maintaining law and public order	Pre	95,0%	0.01	3.7	Worsening
	Post	91,6%			
The Rule of Law	Pre	83,3%	0.00	4.3	Improvement
	Post	87,1%			
Managing public affairs	Pre	67,7%	0.00	19.7	Improvement
	Post	81,1%			
Customs, Rules and Laws	Pre	31,9%	0.03	18.49	Improvement
	Post	37,8%			
The Legality Culture	Pre	70,2%	0.00	17.2	Improvement
	Post	82,3%			
Knowledge of the culture of legality					
Most people know the laws and their individual rights.	Pre	83,5%	0.00	6.9	Improvement
	Post	89,7%			
Most people accept the law and are willing to abide it.	Pre	90,0%	0.14	2.7	No change
	Post	92,5%			
An attitude against corruption and crime prevails.	Pre	61,4%	0.00	11.7	Improvement
	Post	69,6%			
Most people consider the justice system.	Pre	94,4%	0.02	0.7	Worsening
	Post	93,7%			
Every member of society has the opportunity to participate in the formulation, reform, and enforcement of laws.	Pre	98,3%	0.08	1.4	No change
	Post	96,9%			

Ítems	Correct No.	No. Students (%)	P-value	% change correct answers	Rating effectiveness
The laws apply to everyone equally, including the rulers and the government in turn.	Pre	29,7%	0.00	11.7	Improvement
	Post	36,3%			
Laws protect the rights of every individual as well as the well-being of society.	Pre	72,7%	0.12	2.9	No change
	Post	74,9%			
Most people reject illegal behavior.	Pre	40,8%	0.00	20.9	Improvement
	Post	51,6%			

Knowledge of crime and illegality

It facilitates the participation, equity and protection of each individual.	Pre	97,3%	0.74	0.5	No change
	Post	96,8%			
Every member of society has the opportunity to participate in the formulation, reform, and enforcement of laws.	Pre	67,0%	0.46	4.5	No change
	Post	64,1%			
Laws protect the rights of every individual as well as the well-being of society.	Pre	71,5%	0.00	14.9	Worsening
	Post	62,2%			
Most people accept and are willing to perform the duties of law.	Pre	92,0%	0.09	2.4	No change
	Post	94,3%			
Most people reject illegal behavior.	Pre	20,6%	0.00	28.15	Worsening
	Post	16,0%			
Most people support law enforcement government agencies.	Pre	65,5%	0.00	4.2	Improvement
	Post	68,7%			

Source: Author's

However, the induction of cognitive processes through semantic references based on recognition of visual priming with tragic outcome, is a complementary and important cognitive stimulation technique in the classroom. This, especially

in social contexts of social exclusion and cultural deficit, and when erroneous or distorted cognitive references are identified, that prevent the processing and assimilation of new information.

For the case under study, the use of semantic references allusive to legality and the negative effect of their absence in the life of an individual, served as a point of openness to generate a change in the cognitive structures of the students, who when thinking about the damage that illegality causes, resort to the notion of balance (Inheler, Sinclair and Bovet, 1975), since the subject in response seeks compensation against the disturbances within their context. In humans, the progressive balance of cognitive structures (cognitive balance) is a fundamental process for interacting in social life, being evolutionary and that also can be modified in the different stages of cognitive development of the individual. You cannot talk about regulation, when the disruptive effect maintains or causes the repetition of the action in the student, without achieving any modification.

The cognitive dynamics of the studied focus group, established that semantic induction processes are necessary and reaffirm the Piagetian principle that individual cognitive activities acquire their significance in real and symbolic social interactions that, in turn, structure actions and judgments, based on the various points of view present in social activities. Semantic induction is fundamental for transformation in the classroom, focusing its interest on the student's linguistic-cognitive ability, when arguing their position on issues such as accepting/rejecting legality, and contributing to the building of meanings, as well as in the formation of concepts and categories.

In this sense, in contexts of inequality and social exclusion, relationships and psychic structures with less self-regulation tend to dominate, leading to the predominance of suicidal behaviors and violent practices. This is one of the biggest challenges of public and private education institutions. In this regard, the sociologist Elias (1990), contributes in his study to explain that in social phenomena, there are structural properties that are incomprehensible if attention is paid only to individuals, nor can the regularities of the individual behavior be based solely on group properties.

For this reason, since Siegler's theory (1996), the importance and existence of strategies as a fundamental element in the progress of cognitive performance is validated. This implies that educational projects in exclusionary contexts Wald and Kurlander (2003), must be designed in such a way as to include school standards and expectations related to behaviour, administrative policies, follow-up strategies, mapping cognitive scripts and distorted thoughts, as well as teachers' attitudes and practices.

However, the previously mentioned strategy cannot be the same in all learning processes; above all, in the contexts of exclusion and violence it must be rela-

ted to the incorporation of mental models of information, retrieval and transitive understanding of human behavior. This, because coding and recovery is attributed with the main cause of information loss, due to the process that elaborates the information in the mind and, in particular, to factors that may be linked to the psychological, emotional or rational aspects (Manzanero, 2008).

These theories support the thesis that information is lost from the very moment of transmission, since sensory systems have limits, barriers and interests that guide their attention by cycles of interest, which may be conditioned by the cognitive system, rational-emotional system, or moods. Thus, the information received, selected and interpreted according to the previous knowledge, with the demand for knowledge of the task, the context, and with the additional efforts that students make in their free time to improve their knowledge, skills and knowledge about their disciplines of interest. During the learning process, a part of the abstraction of meaning is achieved until the information is incorporated into their structures of knowledge or lost in memory.

For this reason, educational practices in institutions located in the context of school violence or domestic violence, should use different methods, techniques and teaching in their pedagogy, to clarify and understand the causes that mobilize the violent behavior and, most importantly, prioritize the fact of loss of information in memory and the emergence of habits for the incorporation of violent and aggressive language. These new pedagogies should be included in the development of students' emotions; their real cognitive condition involves knowing the semantic structure and its relationship to reality and the difficulty or ease for incorporating new knowledge.

Bruner (1988) proposes a "paradigmatic" intelligence and a "narrative" intelligence, which serves, in a field of communicative management, but a deeper commitment to the internal reality of the student, implies a neuropedagogy that analyzes polarity between positive and negative language and prevents greater incorporation of violent, hostile and aggressive language, in the face of normative, civic and political language. It's about diagnosing in order to teach and identify problems in the unhealthy memory to incorporate recovery techniques. The pedagogical mechanisms used, should lead to placing the subject before the decisions to be made in their different dilemmas, but in particular, observing that they are constructive decisions that make sense.

Authors such as Luna and Migueles (2008) carry out research that allows us to understand the social and cognitive implications of incorporating false information, and the greater difficulty of accepting speeches with high degrees of veracity and interpretative difficulty. Their contributions have been oriented in three dimensions: actions and details, central or peripheral contents, and high or low typicality.

Then, any failure in accessing memories is established as a failure in memory processes to retrieve information; but it is considered as a necessary, healthy and balanced process, in which the forgetfulness of certain information, facilitates the entry and incorporation of new information (Gómez-Ariza et al., 2005). This, suggests considering other research, such as García-Bajos, Migueles and Anderson (2009) on the theory of review, in which, incorporating information that is stored in memory, makes it more likely that it is remembered at the time of the test, but it also prevents the reminiscing of other memories. It is called an inhibitory type control mechanism, and its function is to help in selecting the most useful information at certain times and, on the other hand, it eliminates accessibility to neural areas where memories are stored.

Such difficulties should be thought of from a neuropsychology, involving different cognitive components; In this sense, for Beck (2005) there are three main components: nuclear schemes, intermediate schemes and voluntary/automatic thoughts. Nuclear and intermediate cognitive schemes are belief systems and forms of verbal and attitudinal expression that affect how information is processed; and for (Beck and Clark, 1988) are "functional structures of relatively long-lasting representations of knowledge and previous experience" (pp. 382).

The nuclei, work at a deeper level of neural interaction, meaning they have a greater impact on the processing of information. Intermediate schemes affect the meaning of experiences and condition how reality is interpreted, understood and acted upon (Sanz and Vázquez, 2008). On the other hand, voluntary/automatic thoughts are hierarchical ideas that operate on human memory and occur automatically, naturally and spontaneously.

When there are external factors that affect one of these components, we see that memory is affected. The issue becomes dangerous, when memory stops receiving information and incorporates false, distorted or reduced assimilation information. Different mechanisms should be developed to produce cognitive rehabilitation, including: Restoration, Compensation, Substitution, Activation-Stimulation and Integration. They can be developed through different modalities: Untargeted stimulation, Training of specific processes, Improvement of physical, emotional and social functioning health. Likewise, the techniques of visual and semantic priming can be used, to serve as a trigger element in the student's consciousness, by sizing negative aspects of the effects of the learning problem that is appearing.

To measure its evolution, a neurocognitive assessment is carried out to establish the moments of change during recovery, being always necessary the use of standardized quantitative and qualitative tests, to compare the evolution of the process. Variables such as stimuli exposure time and reaction time, response and response evolution, as well as the increase lack of hostile or violent words, and words related to positive factors or values such as hope, peace and human rights.

Forgetting in education has an important value and the lack of a clear cognitive and conceptual map influences the completion of understanding in the fabric of thought. Any emptiness or inaccuracy is an error in the programming of the subject to codify reality, understand it and act upon it, especially in fields where the demand for integrated knowledge makes it necessary. So, validating visual and semantic priming is a way of making the student's understanding more flexible, a mechanism of thinking that allows him to generate instant forms of response from the operation of his healthier and more stable mental semantic fields, and not from the neutral or negative areas of the brain.

In this sense, the use of visual or semantic priming, is a strategy of generation or response planning that serves as an anchoring element to retrieve information and organize it and works best when the responses or behaviors generated are appropriate or adapted to each task. On the other hand, Anderson and Bower (1974) argue that decoding produces a multiple representation of information, depending on the subject and thus, the meaning that is acquired from the context and representation of the word on the subject meaning of that word is discriminated, as well as its relationship in a broader semantic-cognitive context; in order to establish the effects among items at a macro-structural and supra-structural level.

As a complex and multi-causal topic, institutions that have contexts and internal climate of school violence should be accompanied in order to make a diagnosis to establish the students' levels of cognitive development and identify potential students with difficulties in memory of the culture of legality, since they are at risk and, in particular, pedagogical and preventive actions must be directed towards them.

In this field, actions must be taken with specific pedagogy, based on transformation strategies. According to Román y Gallego (1994) there are five groups of learning strategies: a) Information acquisition strategies, b) Information coding strategies, c) Information retrieval strategies, d) Socio-affective strategies, and e) Metacognitive Strategies. Alternating these strategies, involves promoting the search for information in memory and the generation of responses, and promotes the development of skills and knowledge to control anxiety, expectations, distractors and to promote solidarity and cooperation.

Conclusions

The use of semantic induction through visual recognition and priming in the learning of the culture of legality, is a method that affects the cognitive structuring of the student and in order to be effective, depends on the degree of perceptual overlap between the first stimulus and subsequent stimuli. It is established that priming reflects a general form of learning in perceptual representation systems (Tulving and Schacter, 1990), which can produce profound cognitive modifications; its use in education serves to incorporate new expressions into everyday vocabulary, in which the form of priming is decisive for accessibility to concepts that can only be managed as a result of learning in semantic representation. To do so, conceptual priming is demonstrated with tragic narrative, which leads to a facilitation of the processing of the meaning of a word.

It is also concluded that the presentation format of the stimuli is much more striking when moving elements are used, with musical background, being a stimulant that increases motivation.

Finally, its use in the classroom allows quick and correct feedback, to influence the interactive system of changes of ideas of the student, based on the answers and their correction, and the deep-rooting that can be present in distorted thinking, in such a way that it allows to precisely control and modify, if necessary, certain parameters of the tasks, such as the number of stimuli, the exposure time of these stimuli and the level of difficulty.

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