

# NLP for Serious Games

**John Vrettaros**

*University of Patras, Greece*

**George Ximeris**

*University of Piraeus, Greece*

**Eugenia Koleza**

*University of Patras, Greece*

## INTRODUCTION

The Serious Games is a blooming industry which either complements or substitutes completely the given educational methods. The IDATE (Laurent Michaud, 2010) estimates research shows that The Serious Games sector is expected to grow significantly as it currently generates 1.5 billion with an average annual growth rate of 47% between 2010 and 2015. The application of neuro-linguistic programming (NLP) in the field of education in the last decade is great and very important, and there are several countries and international organisations that have started to apply it massively in classes, just like cbdf who has been applied in a wide range tryout in England.

A beneficial factor that will help this newly-growing technology is the right choosing of pedagogical design techniques and strategies which, when applied, will create an effective learning method. This kind of approach suits the style of Neuro Linguistic Programming (NLP) because it combines the conscious and the sub-conscious learning procedure as well as the acquisition of specific skills.

Also, many researches and applications about the methods of NLP exist in American universities as well as Australian, Indian and other universities of the middle east and Europe but still, not one research about the application of this methodology in educational programs through a computer and in serious games exists in the international bibliography. ([www.nlp-coaching-gr.com/mlm/](http://www.nlp-coaching-gr.com/mlm/), [www.epistimonikomarketing.gr/telika-ti-einai-o-NLP/](http://www.epistimonikomarketing.gr/telika-ti-einai-o-NLP/))

The purpose of this article is to study the importance and the ability to fit the neuro-linguistic programming

in the design of serious games and in educational programs generally, through a cbt computer.

For the documentation of the importance and the application ability of this method we will introduce in the beginning a pedagogical documentation about the significance of using this method as well as the abilities this gives on the cbt, sg and then, in order to prove the feasibility of it, we will explain one NLP pattern modelling proposal using UML language in order to be able to fit in the design of the educational process and the lesson plans for the use of an sg. Also, we will mention the importance of the NLP methodology for the education of people with disabilities.

Generally we can say that the modelling NLP skills provide us with very accurate tools that are needed in order to understand the different range of the subjective experience of the trainee, and to find where he has answered wrong. In many cases, the only thing that is needed is the addition or the deletion of one simple step to the learning strategy of the trainee so that when the wrong stage is eliminated, learning is happening and the NLP patterns greatly help in this process through which we can find the appropriate steps in our learning strategy of the trainee.

The NLP methodology takes into account the learning type, the multisensored learning, the establishing of the objective, the auto-inducement and other very important learning factors which are significant in the development of adaptive multimedia systems for educational applications.

For the purpose of comprehension we will introduce some examples of NLP Techniques (Wikipedia) like Anchoring Reframing, as well as ways these techniques can be represented through UML diagrams, like Activ-

ity diagrams, State chart diagrams etc for the design of and sg or cbt.

Lastly, ideas for further research in the modelling of NLP techniques for more complex applications will be introduced, focusing on methods and models like the Milton model (Wikipedia) which is a hypnotherapy model based on language patterns for hypnotic communication.

## BACKGROUND

### NLP

The NLP became famous worldwide for its unprecedented efficiency in all kinds of phobias, with its use of the modeling process. The NLP techniques are extremely efficient and can change a person's personality in a very short time. We could say that the NLP is a way of life.

In the education sector, the NLP offers techniques for trainers to enhance their effectiveness in creating acceptance of the learners, the growing availability and interest for learning, effective absorption of the material, the development of thinking and their formulation of judgment.

All the techniques and procedures of Neuro-Linguistic Programming are designed so as to make the change in the unconscious mind (which controls all behaviors), but with the full participation of the conscious individual. Working with the unconscious, the changes are faster, more efficient and last longer. ([www.nlpingreece.com/inside.aspx?id=14](http://www.nlpingreece.com/inside.aspx?id=14) [www.nlp-greece.com/www.drosostalida.com/articles2.asp?eid=251](http://www.nlp-greece.com/www.drosostalida.com/articles2.asp?eid=251))

The NLP seems to bring great possibilities in teaching and learning. There are many application examples of the technique in the field of education and training, for example Deni Lyall (2002). In short, we could characterize an NLP approach for teaching and learning as the focus on successful patterns of behaviour, the modelling of such patterns and the generation of change.

The teacher-student relationship is a dynamic process which is built through mutual feedback, not a one-way transmission of information from one to another, because people act based on the way they understand and represent the world, and not according to the way the world is.

For the reason above, the primary focus of NLP is the ways in which people represent the world through sensory imagery (principally visual, auditory and kinaesthetic) and language. According to neuro-linguistic programming, the representation of the world from people is 40% visual, 30% acoustic and 30% kinaesthetic.

The NLP is interested particularly in the way these inside representations are structured, as well as their dynamics, meaning the way they are created and change. For NLP, the structure of the inside representation is different for each person. The detection of the representations as well as their dynamics is reflected in different ways to their external behaviour, verbal or non-verbal.

The skills, the beliefs and the behaviours of a person have corresponding sequences in the inside representation, which is often called as strategies. Learning is a procedure through which these representations and sequences can be acquired and modified.

These modifications derive from the teacher-student communication which happens through verbal and non verbal channels, consciously and sub-consciously.

In NLP the language and the behaviour of the teachers aims at influencing the trainees on both levels, the conscious and the sub-conscious, simultaneously because the learning function, which can be checked consciously represents only a small percentage of its whole functionality.

In essence, the meaning of teaching for NLP is the process of creating a favourable climate for learning, easing the students and improving their inside representation or guiding them to the desired goal. Next, we explain two techniques which will be analysed in the next article.

### Anchoring

Anchoring is the matching of a specific stimulus with an answer, for the purpose to create a new stimulus-intervention program.

An anchor is any cue which will evoke a single state on a person. Also, they are naturally occurring so almost everything recognizable in our experience is an anchor. The NLP teaches us that we continuously create anchors between what we see, hear, feel and our emotional states. If a person is exposed to a single stimulation while in an emotional state, a con-

6 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/nlp-for-serious-games/112966](http://www.igi-global.com/chapter/nlp-for-serious-games/112966)

## Related Content

---

### Migrant Worker Empowerment in Online Communities

Stevanus Wisnu Wijaya, Jason Watson and Christine Bruce (2015). *Encyclopedia of Information Science and Technology, Third Edition* (pp. 6503-6513).

[www.irma-international.org/chapter/migrant-worker-empowerment-in-online-communities/113109](http://www.irma-international.org/chapter/migrant-worker-empowerment-in-online-communities/113109)

### Scaffolding the OEEU's Data-Driven Ecosystem to Analyze the Employability of Spanish Graduates

Andrea Vázquez-Ingelmo, Juan Cruz-Benito, Francisco J. García-Peñalvo and Martín Martín-González (2018). *Global Implications of Emerging Technology Trends* (pp. 236-255).

[www.irma-international.org/chapter/scaffolding-the-oeeu-data-driven-ecosystem-to-analyze-the-employability-of-spanish-graduates/195832](http://www.irma-international.org/chapter/scaffolding-the-oeeu-data-driven-ecosystem-to-analyze-the-employability-of-spanish-graduates/195832)

### Detecting the Causal Structure of Risk in Industrial Systems by Using Dynamic Bayesian Networks

Sylvia Andriamaharoso, Stéphane Gagnon and Raul Valverde (2022). *International Journal of Information Technologies and Systems Approach* (pp. 1-22).

[www.irma-international.org/article/detecting-the-causal-structure-of-risk-in-industrial-systems-by-using-dynamic-bayesian-networks/290003](http://www.irma-international.org/article/detecting-the-causal-structure-of-risk-in-industrial-systems-by-using-dynamic-bayesian-networks/290003)

### The Application of Multimedia and Deep Learning in the Integration of Professional and Innovative Education in Colleges

Shilin Xu (2023). *International Journal of Information Technologies and Systems Approach* (pp. 1-13).

[www.irma-international.org/article/the-application-of-multimedia-and-deep-learning-in-the-integration-of-professional-and-innovative-education-in-colleges/320489](http://www.irma-international.org/article/the-application-of-multimedia-and-deep-learning-in-the-integration-of-professional-and-innovative-education-in-colleges/320489)

### Query Languages for Graph Databases

Kornelije Rabuzin (2018). *Encyclopedia of Information Science and Technology, Fourth Edition* (pp. 2031-2042).

[www.irma-international.org/chapter/query-languages-for-graph-databases/183916](http://www.irma-international.org/chapter/query-languages-for-graph-databases/183916)