

#### CYBER GURU ACADEMY

# Contents that makes a difference

In recent years, the rapid development of digitalization has questioned, particularly in light of the increased use of Artificial Intelligence, the true purpose of digital technologies: to enhance people's lives.

This purpose is often overshadowed by the risks lurking in the digital world, where new criminal groups are always ready to seize the right opportunity for profit.

A lack of awareness of risks and a too casual use of digital devices can turn into a real nightmare for anyone. The only solution to counter the cyber risk is to transform people's digital behaviors by increasing their resistance to attacks. An undoubtedly ambitious goal, but achievable with genuinely effective Cyber Security Awareness training.

But what makes training truly effective?
And how do you choose among the many available platforms?



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# Training vs Learning

### Truly effective training is training that can maximise learning.

Because there is a significant difference between training and learning! Sometimes, a considerable gap arises between these two terms because too often, those who produce training seem to forget what its real objective is.

But what exactly does learning mean? It means acquiring persistent modifications in behaviour.

In simpler terms, the fundamental goal of learning is to induce a "stable" transformation of behaviours in the digital realm.

For this to happen, it is necessary for the Cyber Security Awareness training to act on two levels: **instructional effectiveness** and the **learner's motivation**.

These two levels are closely intertwined because there is no instructional effectiveness without motivation, and vice versa.



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# The content journey

"At Academy, we focus on the conception, design, and production of all educational content. A multidisciplinary team is dedicated to creating content that makes a difference."

Maurizio Zacchi - Head of Academy

Content is a crucial element for effective learning and, consequently, for selecting the most suitable Cyber Security Awareness platform. Designing and implementing effective educational paths means transforming technically-oriented content into material functional for the learning of everyone, including those who may not have a strong affinity with technology or believe they have limited time for training.

This transformation process can only be achieved with the possession of five robust competencies in the following areas: cybersecurity, psychology, andragogy, communication, and multimedia.



# Cybersecurity

Cybersecurity is undoubtedly a fundamental skill.

The Academy division primarily focuses on aspects related to the human element, the dynamics of attacks, and the mindset of attackers.

Researching and studying threats are crucial for understanding the dynamics of attacks and their potential consequences, as well as comprehending the human mechanisms upon which cybercriminals rely for the success of their attacks.

The dynamics employed by cybercriminals are extremely complex and varied. Therefore, activities in "threat intelligence" are necessary to stay consistently updated on the developments in attack techniques.



## Psychology

Equally crucial is the expertise in psychology, particularly concerning the study of cognitive and behavioral aspects of the human mind.

#### For instance:

- Examining the mindset of attackers and the tactics of persuasion and manipulation they employ. Both are essential for a comprehensive "mapping" between these tactics and various types of cyber attacks;
- Investigating human vulnerabilities, identified as "cognitive biases". This is useful for understanding decision-making processes and conditioning, with particular attention to heuristic operations and expert intuitions;
- Exploring the architecture of human cognition, acting as a bridge between psychology and education, and significantly influencing the effectiveness of training and mechanisms for motivating learning.



# Andragogy

Equally vital is the proficiency in andragogy or the science of adult education, oriented towards corporate training and continuous education.

In this perspective, for example, the application of the main theory of adult learning, "Cognitive Load Theory", has influenced many of our methodological choices, as seen in the case of "Micro-Learning", fundamental for containing training overload, and "Time-Spaced Learning", to achieve permanent learning through distributed training over an extended period, notably more effective and regularly scheduled.

The "Cognitive Load Theory" concerns the primary learning mechanism and the role of Working Memory and its relationship with Long-Term Memory, where the transformation of behaviors occurs.

If the limits of Working Memory are exceeded, training loses its effectiveness because each new piece of knowledge contributes to the cycle of forgetting, and thus, concepts that should be learned are forgotten before being acquired.

This is why the use of Working Memory must be optimized to the maximum, employing precise techniques.



# "The highest training effectiveness is attained when the training is designed in conditions that align with the human cognitive architecture"

"Cognitive Load Theory" John Sweller

A sophisticated remark from the esteemed psychologist to convey a straightforward concept: when training is conducted using techniques that align with how people learn, we attain optimal training effectiveness.

### Communication

### Communication is an equally vital skill as it profoundly influences the effectiveness of learning.

When addressing everyone, particularly those not well-versed in cybersecurity, it is essential to primarily focus on using an informative language, a language "purged" from any form of technological jargon.

In addition to communication, making proper use of semiotics, the discipline that studies the language of symbols and the meanings these symbols convey, is important.

This competency is fundamental to understanding how symbols should be effectively employed in educational contexts.



### Multimedia

This competence might appear obvious in the e-Learning sector, but often, the use of multimedia is employed in a dysfunctional manner concerning learning, creating distractions that contradict the cognitive load theory. Our reference, on the other hand, is based on all the principles of the "Cognitive Theory of Multimedia Learning", which allows for maximizing the effectiveness of multimedia tools.

It's important to know that our memory utilizes two channels, one dedicated to processing words, the other to images.

Only a proper balance of these two channels can lead to increased instructional effectiveness and avoid elements of distraction or boredom that may arise from an inappropriate use of such a tool.







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