



Science of Learning - Online

BECOMING A SOPHISTICATED LEARNER

for students



*“COGx has been devoted to translating scientific research and **evidence-based practice** into **accessible** programs. They are **rigorous in their approach** and committed to applying research findings and evidence with fidelity. As a result, they are making great strides in changing the status quo in education to one that embraces scientific research on learning.”*

Professor Robert Bjork

*Professor of Psychology, UCLA;
Founder of the Bjork Learning & Forgetting Lab*

PROGRAM OUTLINE

Most students are asked to learn without ever being taught how to do so. Optimal learning is not intuitive. Research reveals the most common strategies relied on by students are based on myths and misconceptions about learning. This forces too many students to struggle or to learn inefficiently. However, through Becoming Sophisticated Learners (BSL), students master evidence-based techniques and strategies based on the science of learning. BSL teaches students to process information effectively, amass knowledge reliably, and learn deeply. BSL also improves their comprehension, critical thinking, and creativity, empowering them to be protagonists in their education. A suite of application guides complements the program, providing students with dozens of strategies to develop skills and enhance their learning.

 7 Modules

 15 hours

 Synchronous + Asynchronous

MODULES



Module 0: Prerequisite Information

Our introduction prepares students for success throughout the program. The focus of the module is understanding the science behind habits and **productive habit formation**. It begins by dispelling common misconceptions about habit formation. Students review studies on habit formation and predict outcomes, learning the formula for establishing habitual behaviors in their college work and beyond. Similarly, students explore the concept of **desirable difficulties** and practice methods to persevere through difficult tasks. The module concludes with students creating a “time capsule” video to capture their new understanding of habit formation and how they will apply it throughout the program.

Did you know?



Students rely on the least effective techniques to study, due to misconception about how they learn (Bjork & Bjork, 2011)



Module 1: Unlearning

We begin by exploring students’ existing **misconceptions** about learning. It introduces basic **brain anatomy**, how **emotions** can interact with cognitive functions, and the role that **stress** can play in decreasing our cognitive capacity. Students participate in an activity and then identify the most common and essential aspects of a **satisfying learning experience**. They then share and reflect as a group on common themes such as clear objectives, immediate feedback, and a sense of belonging and trust.



Module 2: Relearning

Students identify the qualities of a good student or an successful person, followed by a mini-lesson on **neuroplasticity**, highlighting the brain's ability to change through behaviors. They explore the impact of mindset on learning, emphasizing the benefits of a **growth mindset**, recognizing that it is just one element of success in learning. They learn to interpret and manage emotions. The concept of '**flow state**' is introduced, and they explore the balance between challenge and ease. They then learn about **metacognition**, establishing a baseline for self-reflection and feedback. The session concludes with **deliberate practice**, emphasizing that mastery requires effort, even for experts, and debunking the notion that success is purely due to innate talent.



Module 3: Learning for Mastery

The basic processes of memory creation are presented, starting with the **myth of familiarity** and how we often misjudge our knowledge. Then, the metaphor of **attention as a filter** is introduced, explaining how we can control which information passes through it. The mini-lessons address the limitations of **working memory** and how to overcome them when learning new information. They also explore why **long-term memory** is unlimited and strategies for better encoding information. Students apply eight strategies to achieve this. Finally, they create their own mind map to remember key terms.



Module 4: Mastering Retrieval)

The '**forgetting curve**' is introduced, explaining that, although it may seem counterintuitive, it is beneficial to allow some forgetting to occur before attempting to practice **information retrieval**.

Recovering data from memory is, in fact, one of the best ways to strengthen it. To demonstrate the power of retrieval practice, students are asked to use grids to recall information from previous modules. This also illustrates other **study strategies** they can master to study effectively. Finally, they are asked to reflect on their study routines and update their methods using our guidance.

Did you know?

Effective learners “engage in activities that foster storage of new information and subsequent access to that information.” (Bjork et al., 2013).



Module 5: Executive Function

Students learn about the role of **executive functions (EF)**, the “CEO” of the brain. Throughout the module, students construct an answer to the question, “How does your mind go about managing all the tasks before, during and after a goal that you have set?” Students discover that their 'internal CEO' carries out various skills, such as **planning, organizing, controlling attention, and reflecting on performance**, and they explore the brain regions responsible for these functions. They experience a mini-lesson on writing **effective goals** that are short-term, specific, and moderately challenging. To apply the content, they analyze the **time management and planning** of a fictional peer in their final project, reviewing her agenda and providing constructive feedback.



Module 6: Metacognition

This module builds on Module 5 to discuss executive functioning behaviors needed to sustain **attention**, reduce distraction and **impulsivity** and **manage frustrations**. Students apply these skills to supporting their fictional peer to help her stay on task and submit her senior project on time. The module concludes with a discussion of why **mistakes** are essential for learning and how to benefit from **feedback** and even **failure** and use it effectively for improvement. In this way, **metacognitive skills** are developed in these last two modules.



If this program were integrated into the school system, and teachers and students knew the techniques and strategies we learned, everyone would be a lot smarter!

Kevin Hatchett,
Student, Walt Whitman High School,
Bethesda, MD

GLOBALLY RECOGNIZED

COGx was honored as the world's Top Science of Learning solution at the Reimagine Education Awards among 1100+ entries, impressing a panel of 650+ judges. In addition, COGx was recognized as the Top EdTech innovator (USA) to promote college-readiness at the LatinX Conference. The Dubai Future Foundation recognized COGx as one of the world's Leading EdTech organizations.



HOW STUDENTS LEARN

The instructional design of the program adheres to the scientific principles of human learning. We incorporated methodologies that support mastery of content and transfer of skills. As such, the majority of the course is active learning. Each module presents an engaging learning experience through which students are learning-by-doing, through storytelling, and collaboration. Students demonstrate their learning to authentic audiences of their peers and beyond.



Storytelling: Students learn from other people's stories and share their own experiences.



Priming activities prepare the students' brains for learning and make it easier to recall the material later on.



Retrieval Practice: Students engage in frequent retrieval practice including elaboration, spacing, self-testing, and interleaving.



Creative Expression: Students engage their creative side while writing and making videos.



Collaboration: Students give and receive structured feedback to their peers



Reflection: Students make meaning of what they're learning and understand themselves as a learner through reflection.



Video Micro-Lessons: Students watch video micro- lessons to make the information come alive.



Application Guides: Students can print out these study guides or store them on their computer for easy reference.



Authentic Assessment: Students demonstrate their learning to authentic audiences of their peers and beyond.