

# How to Align the use of Brightspace with the Science of Learning?

## Use Your LMS To Support Executive Functions



Planning, organizing mental resources to execute the plan, monitoring progress, and staying on task: The skills that make up executive function are backed by decades of research that suggests they are crucial to **success in learning and in life**. Since the part of our brain most involved in executive function, the prefrontal cortex, is still undergoing dramatic development into our mid-20s, every learner, K-12 through Higher-Ed, benefits from structured support with executive-function skills.

It's important to think of executive function as a suite of skills with great variability. Some students will be good at some of these skills in some contexts, and not so good in others—and they will vary with task, subject, day, sleep, and stress, for example.

The additional challenges of distance learning may mean that students will have a harder time than usual with executive function.

**Some ways you can help your learners develop their executive skills during asynchronous learning via Brightspace:**

- Use **Intelligent Agents** to set up an email nudge reminding learners to login to their course when there is a period of in-activity for X number of days.
- Use the **calendar** to create events with due dates and encourage students to plan their work in lieu of the deadline (e.g., assignment or quizzes).
- Use a **checklist** to itemize a large assignment into related bite-sized tasks encouraging learners to monitor their workload and track their progress independently.
- Use **class progress** to encourage learners to engage in a weekly or bi-weekly reflection on how they've performed, and the learning strategies they used to get those results or with your guidance adapt these learning strategies for improved outcomes.

## Do No Harm – Reduce Extraneous Cognitive Load

Our brain has finite cognitive resources—there is only so much thinking, reasoning, and processing we can do at once. During learning, three types of **cognitive load** are placed on these resources: (1) demands inherent to the complexity of the content being taught, (2) the demands of transferring the content to long-term memory, and (3) extraneous cognitive load caused by the brain's management of external factors like distractions and ambiguous instructions.

If the extraneous cognitive load is too high, our brain may not have the resources to do the task now or remember it well enough to do later. In other words, your students won't have truly learned it.

**Some ways you can use Brightspace features to reduce learners' cognitive load when designing your online lesson:**

Use the HTML editor to create content:

- Use **alt text** to be cognizant of your choice of images (decorative or essential) as you strive to make your content accessible. Avoid visual clutter so that you don't cognitively overload your students.
- Use the **accessibility checker** to ensure your text is in high contrast to the background for easy readability.
- Use **Brightspace HTML templates\_v3** for pre-designed recommendations on how to chunk text well using subheadings, bullet points or numbered steps, etc. These templates are also more responsive and mobile friendly for those who access content on a cell phone or tablet.

Use **video note** to avoid too much text. But be strategic about when and how you use these recordings by identifying which teaching and learning instances students will benefit the most from using a video-format instead of text. Bearing in mind the affordances of the video note, here are some recommendations:

- If you need to convey specific and timely feedback via words only
- If the instructions are unfamiliar or complicated, and requires to be conveyed with the aid of physical props/ simple gestures
- A learner who has not performed well on an assessment would benefit from constructive feedback framed in an encouraging/friendly way where he can read the instructor's body language bolstering his social-emotional disposition
- Introductory message at the start of a course to increase instructor presence during asynchronous learning

Strive for **consistency** in how you design your course (e.g., customisation of navbar, choice of widgets and where they are positioned in a course landing page etc.) and format your assignments and feedback processes for a more intuitive online learning experience for your learners enrolled in multiple modules at any one time.

## Incorporate Retrieval Practice, Spaced Practice, And Interleaved Practice



The practice of recalling information just as you are starting to forget it is a **great way to build durable long-term memory**. This is the essence of retrieval practice and spaced practice.

Interleaving means building regular retrieval into your flow, so that you are constantly resurfacing key ideas and skills in the form of low-or no-stakes practice assignments.

**Some ways you can use Brightspace features to incorporate these learning strategies into your online lessons:**

- Use **Quizzes/ Self-Assessments** to create a safe space for students to get things wrong, find their mistakes and fix them. Students need time to practice without the threat of grades, so using frequent, low-or no-stakes practice tests to provide immediate feedback provides learners with the right kind of stimulus to achieve mastery of challenging concepts/topics. This is for assessing both lower-and-higher order thinking skills.
- Use **Question Library** to pull practice questions used in prior units into current memory tests—focused on the core skills and principles that you want students to master.
- Use **Manage Dates** to auto-release memory tests to learners at intervals of two to three weeks.

## Additional Resources

**How do I create a checklist?**

Watch [Teaching Tips – Itemize Assignments using Checklists – Instructor](#) to find out more

**How do I import Brightspace HTML templates\_v3 into my course?**

Visit [HTML Template \(Version 3.0\)](#) to find out more

**How do I create a quiz with a question pool in Brightspace?**

Visit [Create a random set of questions for a quiz from the Question Library](#) to find out more

### References

1. Kelleher, I. (2020). *How to Align Your LMS With the Science of Learning*. Edutopia. <https://www.edutopia.org/article/how-align-your-lms-science-learning>
2. Zelazo, P.D., Blair, C.B., and Willoughby, M.T. (2016). *Executive Function: Implications for Education*. (NCER2017-2000). Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education.