

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.

will have a harder time than usual with executive function.

The additional challenges of distance learning may mean that students

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.



work in lieu of the deadline (e.g., assignment or quizzes).

Use the calendar to create events with due dates and encourage students to plan their



Use a checklist to itemise 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.

Extraneous Cognitive Load

Do No Harm – Reduce

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.

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'

If the extraneous cognitive load is too high, our brain may not have

cognitive load when designing your online lesson: Use the HTML editor to create content:

for easy readability.



overload your students.

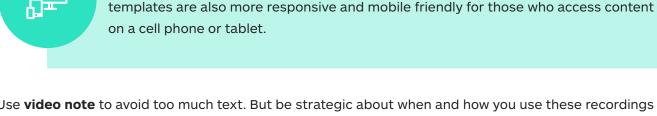
Use alt text to be cognizant of your choice of images (decorative or essential) as you strive to make your content accessible. Avoid visual clutter so that you don't cognitively



Use Brightspace HTML templates_v3 for pre-designed recommendations on how to

chunk text well using subheadings, bullet points or numbered steps, etc. These

Use the accessibility checker to ensure your text is in high contrast to the background



asynchronous learning

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

• 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

instead of text. Bearing in mind the affordances of the video note, here are some recommendations:

identifying which teaching and learning instances students will benefit the most from using a video-format

- 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

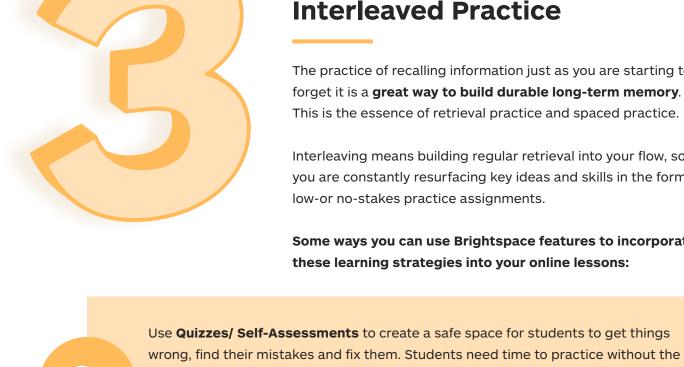
format your assignments and feedback processes for a more intuitive online

learning experience for your learners enrolled in multiple modules at any one time.

Spaced Practice, And

Interleaved Practice

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



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

Incorporate Retrieval Practice,

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



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.

threat of grades, so using frequent, low-or no-stakes practice tests set 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



Use Manage Dates to auto-release memory tests to learners at intervals of two

Additional Resources

 $trademarks\ of\ D2L\ Corporation.\ Please\ visit\ D2L.com/trademarks\ for\ a\ list\ of\ D2L\ marks.$

to three weeks.

order thinking skills.

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



D₂L

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.

© 2021 D2L Corporation. The D2L family of companies includes D2L Corporation, D2L Ltd, D2L Australia Pty Ltd, D2L Europe Ltd, D2L Asia Pte Ltd, and D2L Brasil Soluções de Tecnologia para Educação Ltda. All D2L marks are



