



Monograph | Volume 5

Resources to Support Professional Development & Student Success

 INTERACT123

2023 & 2024

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1

PROFESSIONAL DEVELOPMENT

Professional development related to teaching, learning, and assessment plays a critical role in supporting student success in higher education. Through ongoing training and education, faculty and instructional designers can enhance their pedagogical methods building up research, evidence-based practices, and the newest educational technologies. Continuous engagement in professional development can lead to more engaging, relevant, and effective instruction, which directly impacts students' learning experiences. Becoming more proficient in assessment and working across modalities enables educators to ensure that all students have the opportunity to succeed. Furthermore, effective assessment supports accurately measuring student learning, identifying areas of needed improvement, and providing targeted feedback, all of which contribute significantly to students' academic achievements and overall success.

Articles

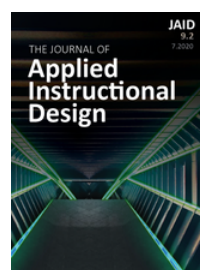
[Why Professional Development in Higher Ed Requires Regular Revisions](#) EdTech (Bruzga, 2022)

“Whether or not you keep, add, remove, replace, adapt or enhance training offerings, taking a collaborative and data-driven approach will allow your team to make informed decisions about the future of your professional development opportunities.”



[A Model for Developing Instructional Design Professionals for Higher Education Through Apprenticeship](#) Journal of Applied Instructional Design (Mancilla & Frey, 2020)

“Currently no systematic pathway exists for equipping novice IDs with the requisite knowledge, skills, and experiences for successful performance and career growth. This article introduces the Development of Instructional Designers Apprenticeship (DIDA) model.”



Professional Development Opportunities



[Quality Matters](#)

- Workshops
- Webinars
- Conferences

“Quality Matters online workshops help faculty, teachers, and instructional designers grow beyond their current online learning expertise. Whether you are experienced or just entering online learning, your courses - and learners - will benefit from the application of QM Rubrics and course improvement tools.”



[Learning & the Brain](#)

- Webinars
- Educational Conferences
- Summer Institutes
- One-Day Professional Development

“Learning & the Brain® connects educators to the latest research in the science of learning and its potential application to education through its Education Conferences, Webinars, Summer Institutes, and On-Site Professional Development.”

EDUCAUSE

[EDUCAUSE](#)

- Webinars
- Institutes
- Learning Labs
- Conferences

EDUCAUSE offers extensive professional development opportunities including webinars, demo days, self-paced programs, institutes, and conferences.

FACULTY FOCUS

[Faculty Focus](#)

- Courses
- Programs
- Podcasts
- Virtual Workshops
- Conferences

Faculty Focus provides free resources including special reports, the *Faculty Focus Live* podcast, and other programs. They also offer professional development opportunities to educators globally.



Retrieval Practice

[Retrievalpractice.org](#)

- Downloadable Materials
- Events
- Workshops
- Practice Guides

Retrieval Practice provides vast resources that build upon the science of learning and evidence-based practices.



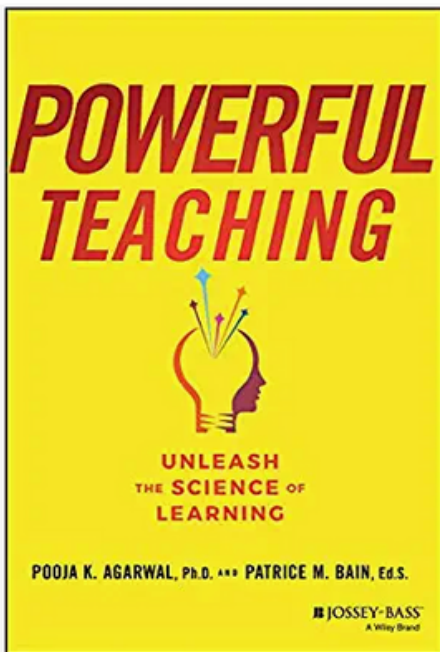
THE LEARNING SCIENTISTS

[Learningscientists.org](#)

- Downloadable Materials
- Videos
- Podcasts
- Workshops

“Making scientific research on learning more accessible to students, teachers, and other educators.”

Books

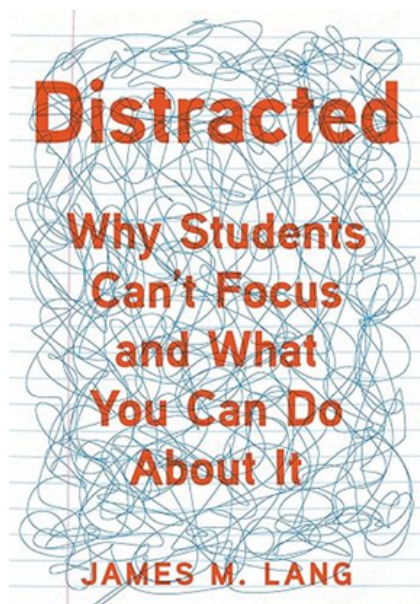


Powerful Teaching

Pooja K. Agarwal & Patrice M. Bain (2019)

"*Powerful Teaching: Unleash the Science of Learning* empowers educators to harness rigorous research on how students learn and unleash it in their classrooms."

[View Now](#)



Distracted: Why Students Can't Focus and What You Can Do About It

James M. Lang (2020)

"Brimming with ideas and grounded in new research, *Distracted* offers an innovative plan for the most important lesson of all: how to learn."

[View Now](#)

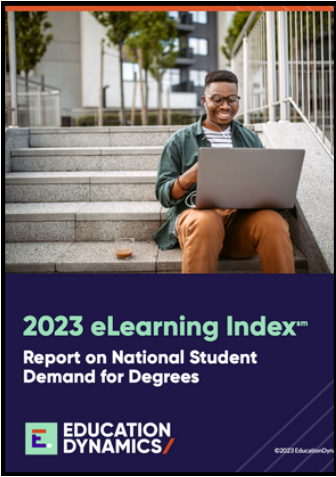


2

ONLINE LEARNING & INCREASING DEMAND

Online learning has seen remarkable growth in higher education in the United States with continued increasing demand by students seeking greater flexibility and accessibility following the pandemic. The convenience of online courses supports an increasingly diverse non-traditional students who want to pursue higher education without the constraints of traditional classroom settings. Through the integration of innovative tools and interactive platforms, educators are able to enhance the learning experience to provide a more engaging, student-centered, and personalized learning experience. This increasing demand for online learning reflects an evolving higher education landscape in which institutions must adapt an ever-shifting workforce and prioritize flexibility and accessibility while maintaining academic rigor and quality. This transformation is continuing to broaden educational opportunities and prepare students for a dynamic and changing global work environment.

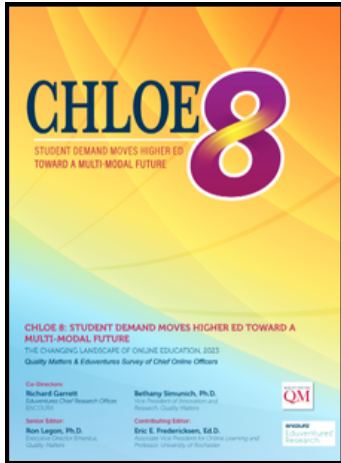
Reports



Education Dynamics [eLearning Index Report 2023](#)

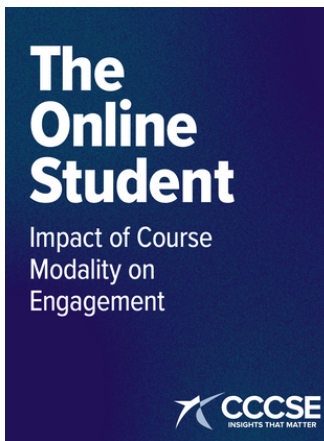
“The eLearning Index is an insightful look into the latest trends in student demands and program availability. This report contains select secondary research and proprietary analysis pertaining to the higher education industry, labor market statistics and key benchmarks. The eLearning Index is here to help higher education leaders better understand the most popular areas of study relative to what’s available and take away the opportunity to develop career-ready programs to meet the student demand.” - *Overview*

Reports



Quality Matters, (CHLOE) 2023 [Changing Landscape of Online Education](#)

“The eighth installment of the Changing Landscape of Online Education (CHLOE) report, produced by Quality Matters™ and Eduventures®, offers an overview of the current state of online learning in higher education as well as insights into its future development. The majority of survey participants report increased student demand for online and hybrid learning juxtaposed with decreased demand for face-to-face courses and programs.” - *Overview*



The Community College Survey of Student Engagement (CCSSE) (2023) [The Online Student: Impact of Course Modality on Engagement](#)

“A new report released by CCCSE, The Online Student: Impact of Course Modality on Engagement, highlights the differences in engagement between students who take all their classes online and those who take classes in person.” - *Overview*

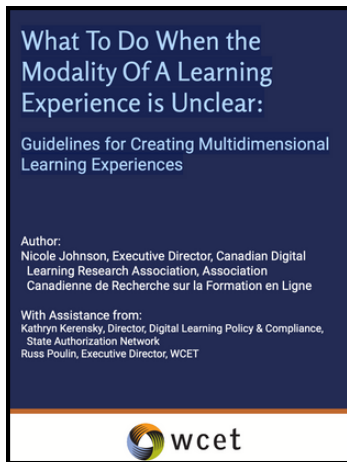


“Online and hybrid learning are increasingly popular. Now colleges have to keep up.”

- Hall, 2003

[Chronicle of Higher Education](#)

Reports



WCET (2023)

[What To Do When the Modality of A Learning Experience is Unclear: Guidelines for Creating Multidimensional Learning Experiences](#)

"The mix of technologies used in postsecondary instruction has become increasingly more varied, and information with students about instructional experiences can be confusing. Building upon on a series of WCET works over the past year on digital learning definitions, this paper presents several complex cases, based on real-world examples, where the learning modality is unclear. Discussion includes guidance and recommendations for categorizing and naming learning experiences that do not fit neatly into one category or another." - *Overview*



"Categorizing learning experiences by modality continues to be a challenge within the higher education landscape."

- Johnson, 2023, p. 4

[What To Do When the Modality Of A Learning Experience is Unclear \(WCET\)](#)

Defining "Distance Education" in Policy:

Differences Among Federal, State, and Accreditation Agencies

Author:
Kathryn Kerensky, Director, Digital Learning Policy & Compliance, State Authorization Network, WCET

Contributing Authors:
Russ Poulin, Executive Director, WCET & Vice President for Technology-Enhanced Education, WICHE
Van Davis, Chief Strategy Officer, WCET



WCET (2023)

[Defining Key Terms Related to Digital Learning – Student, Faculty, and Technology Trends](#)

"To investigate anticipated trends toward technology use and how technologies are being used, WCET (the WICHE Cooperative for Educational Technologies) funded a survey that asked a series of questions about the role of technology in the current higher education landscape. The participants for this study consisted of 987 higher education faculty and 1,051 administrators, (for a total of 2,038 participants representing 870 different institutions from all fifty states, Puerto Rico, and the District of Columbia.)" - *Overview*

Events & Webinars

TOP HAT

[Events & Webinars](#)

Top Hat

Top Hat offers on-demand and archived events that empower educators to deliver inclusive, engaging and meaningful learning in their courses.



[Events & Webinars](#)

Association of College and University Educators (ACUE)

ACUE offers webinars and webinar series on topics related to Effective Online Instruction, Inclusive Online Teaching Webinars, and Back to School Webinars.

INSIDE HIGHER ED

[Events & Webinars](#)

Inside Higher Ed

Inside Higher Ed offers webinars that support universities on topics related to online learning, student enrollments, digit equity, and more.



“Two-thirds of colleges are adding online programs — based on student demand.”

- Swartz, 2023

[Higher Education Dive](#)

Professional Development



[On-Demand and Customized Program and Course Offerings](#)

"The OLC Center for Professional Learning offers a variety of online courses and programs for instructional designers that can help you develop and advance your instructional design and course development skills in the online environment." - *Overview*



[Improve Courses & Training by Building Expertise](#)

"Quality Matters online workshops help faculty, teachers and instructional designers grow beyond their current online learning expertise. Whether you are experienced or just entering online learning, your courses — and learners — will benefit from the application of QM Rubrics and course improvement tools. Workshops are available to both QM members and non-members, with significant cost-savings for members." - *Overview*

Articles & Studies

[What do Higher Education Students Want from Online Learning?](#) (Child et al., 2023)

[‘Dynamic, Uncertain Moment’ for Online Learning](#) (Coffey, 2023)

[Supporting Online Student Engagement with Course Design](#) (Mowreader, 2023)

[Course Design Support Is Crucial to Meet the Growing Demand for Online Learning](#) (Wood, 2023)

[Teaching and Learning Delivery Modes in Higher Education: Looking Back to Move Forward Post-COVID-19 Era](#) (Imran et al., 2023)

[The Shift in Digital Learning Modalities: Is Higher Education Ready?](#) (Poulin, 2023)

[2023 EDUCAUSE Horizon Report | Teaching and Learning Edition](#) (2023)

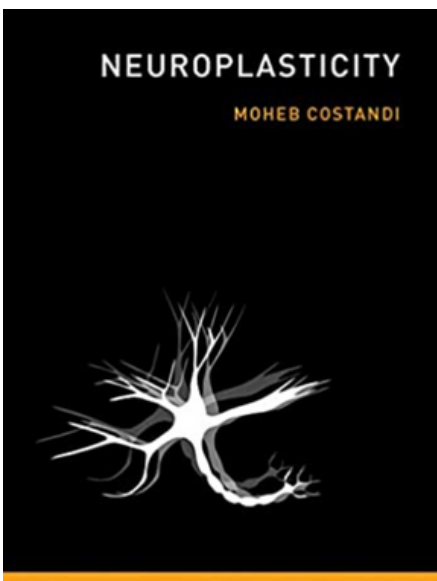
[Demand for Online Education is Growing. Are Providers Ready?](#) (Diaz-Infante et al., 2022)



3 NEUROPLASTICITY

Neuroplasticity is the brain's ability to change and reorganize by forming new neural connections over a lifetime. This understanding is pivotal in teaching, learning, and assessment. By recognizing that the brain can develop and change in response to experience, educators can design learning environments that foster neuroplasticity and acquisition of new skills and knowledge. It is important to also recognize neurodiversity and that each student is unique in the experiences they bring to the classroom and how they process information. Practice and feedback, as supported by assessment, are essential to learning and can strengthen neural connections. Furthermore, employing strategies that build upon neuroscience, psychology, and education support student success in and beyond the onsite and online classroom. Through course design, teaching, and innovation educators are transforming lives as brain changers.

Books



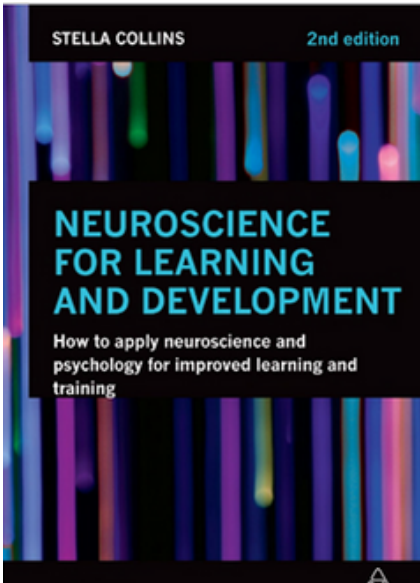
Neuroplasticity

Moheb Costandi, M.Sc.

"A concise and engaging overview of neuroplasticity for the general reader, describing how our brains change continuously in response to our actions and experience." - *book cover*

[View Now](#)

Books

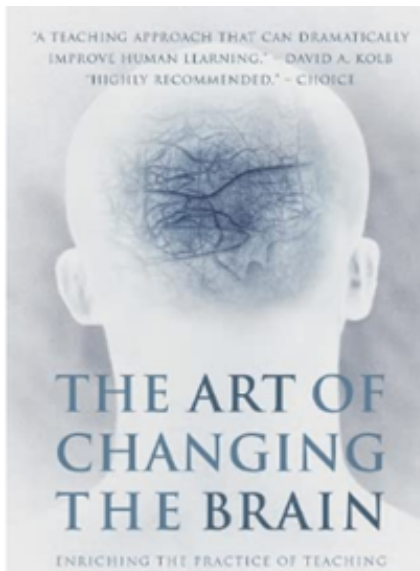


Neuroscience for Learning and Development: How to Apply Neuroscience and Psychology for Improved Learning and Training

Stella Collins, M.Sc.

"Dispelling some of the myths and hype around the topic, Stella Collins proves you don't have to be a neuroscientist to apply key brain principles to practical learning solutions." - *book cover*

[View Now](#)



The Art of Changing the Brain: Enriching the Practice of Teaching by Exploring the Biology of Learning

James E. Zull, Ph.D.

"James Zull's crystal-clear mapping of how learning occurs, how learning changes the brain, and how many parts of the brain are activated as one learns should be interesting for all who teach. Zull relays a teaching approach and the neuroscience behind that approach that can dramatically affect learning." - *book cover*

[View Now](#)

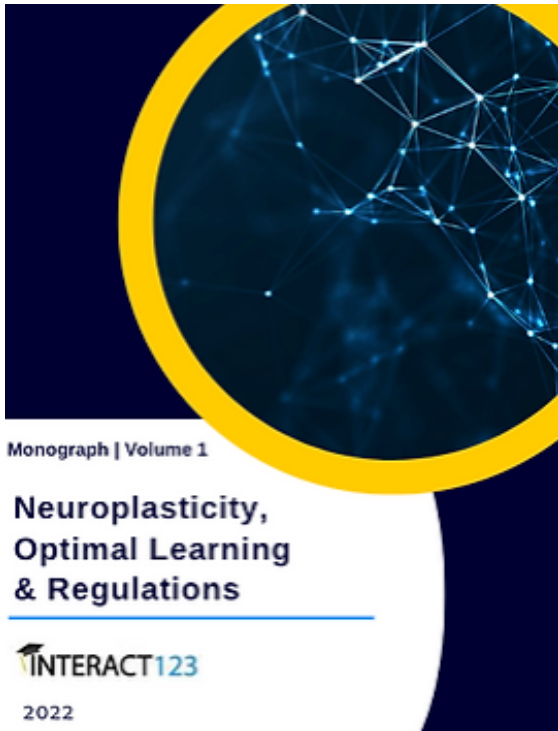
"Your brain changes physically whenever you learn anything, and your brain continues to be moulded by experience and learning throughout your life."

- Cunningham, 2019, para. 1

[UNESCO](#)



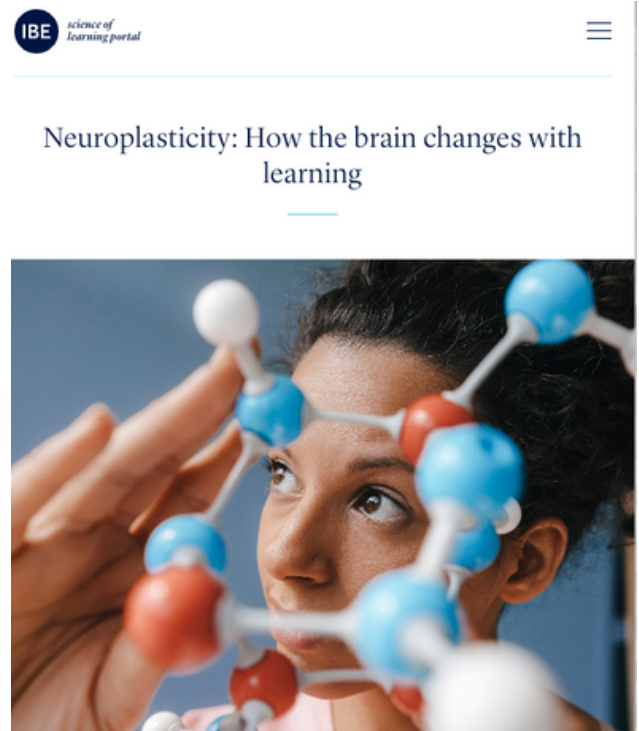
Monographs & Reports



INTERACT123 Monograph Series

Volume 1: Neuroplasticity, Optimal Learning & Regulations

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Science of Learning Portal Changes with Learning

Neuroplasticity: How the Brain Changes with Learning

[View Now](#)

Workshops

Online Learning Consortium

[OLC Institute Schedule: Upcoming Workshops](#)

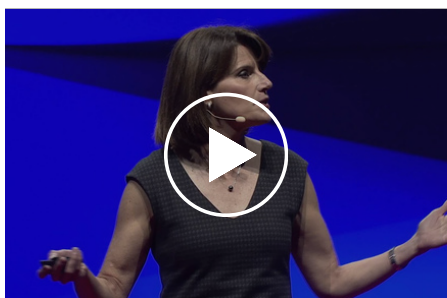
Neuro, Cognitive & Learning Sciences Series:

- Part 1: Bringing Theory to Practice
- Part 2: Applying Theory to Practice
- Regular and Substantive Interaction, Policy & Practice
- Instructional Design

Online Nursing Mastery Series



Videos



“After Watching This, Your Brain Will Not be the Same”

Dr. Lara Boyd, University of British Columbia

[Watch Now](#)



“Neuroplasticity: The Science Behind Rewiring the Brain”

Dr. Michael Valenzuela, The University of Sydney

[Watch Now](#)



“How Does the Brain Learn New Knowledge?”

Dr. Juan Manuel Galeazzi, University of Oxford

[Watch Now](#)

Articles

[A methodological perspective on learning in the developing brain](#)

van Duijvenvoorde, A. C. K., Whitmore, L. B., Westhoff, B., & Mills, K. L. (2022). *Science of Learning*, 12, 1-6.

[Taking neuroscience to school](#)

Frye, H. (2022, August). Georgetown University.

[Neuroscience concepts changed teachers' views of pedagogy and students](#)

Chang, Z., Schwartz, M. S., Hinesley, V., & Dubinsky, J. M. (2021). *Frontiers Psychology*, 12, 685-85.

[Effects of teaching the concept of neuroplasticity to induce a growth mindset on motivation, achievement, and brain activity: A meta-analysis](#)

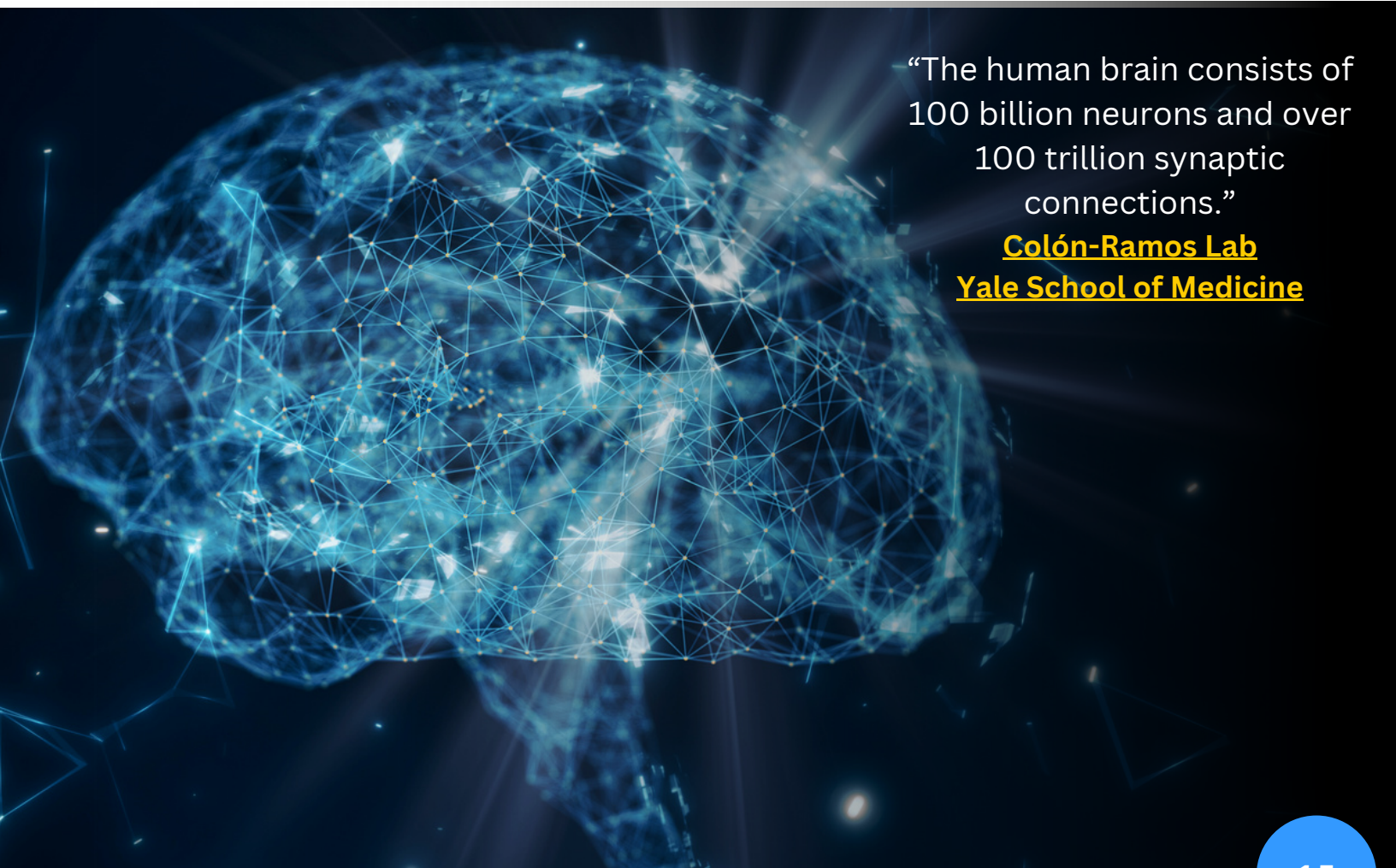
Sarrasin, J. B., Nenciovici, L., Foisy, L. M., Allaire-Duquette, G., Riopel, M., & Masson, S. (2018). *Trends in Neuroscience and Education*, 12, 22–31.

[Putting neuroscience in the classroom: How the brain changes as we learn](#)

McCandliss, B., & Toomarian, E. (2020). *The Pew Charitable Trusts*.

[UDL & the learning brain](#)

CAST. (2018).



“The human brain consists of 100 billion neurons and over 100 trillion synaptic connections.”

Colón-Ramos Lab
Yale School of Medicine



4

STUDENT MOTIVATION, WELL-BEING & FLOURISHING

Student motivation, well-being, and flourishing are interlinked and critical to the success of individuals pursuing higher education. Motivation is essential to keeping students engaged with their studies and striving for academic achievement. Well-being in students is multifaceted, encompassing physical, mental, and emotional health. Flourishing in the context of psychological well-being refers to a high level of positive mental health, where students experience positive emotions, engage in activities, and experience happiness and satisfaction in life. Fostering these elements can create an environment where students are engaged and thrive.

Books



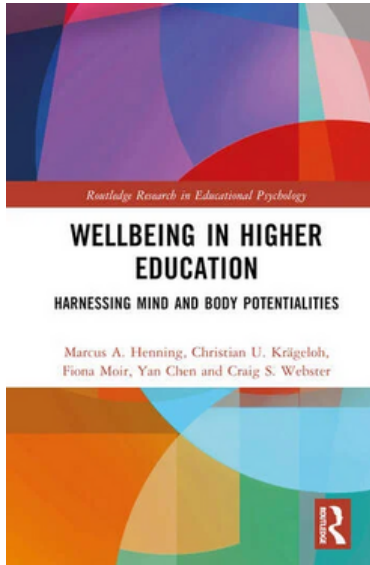
Education for Flourishing and Flourishing in Education

Mahatma Gandhi Institute of Education for Peace and Sustainable Development (2022)

"This chapter aims to elucidate theoretical meanings of flourishing and education, and the relation between them. Throughout history a variety of ideas about the nature and purpose of these activities has been developed. This chapter considers the purpose and aims of education. It will explicate what viewing this purpose or ultimate aim may mean in terms of human flourishing and how ideas about human flourishing influence thinking about the practice of education and vice versa, given they are perceived as being in a dialectical relationship." - review

[View Now](#)

Books

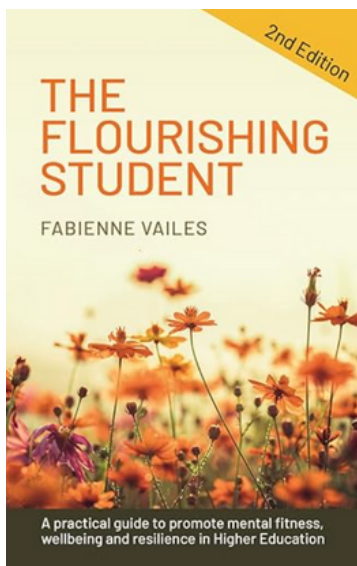


Wellbeing in Higher Education

Henning et al. (2018)

"Drawing on holistic research and professional practice, this book provides rich empirical, scientific, and clinical lenses to the discourse on wellbeing in higher education. The authors have appraised the underlying, conceptual, empirical, and applied nature of existing mind-body programmes often utilized to cultivate wellbeing (e.g., seated meditation, yoga, Taijiquan, Pilates, Feldenkrais, biofeedback, and the Alexander technique)." - *book description*

[View Now](#)



The Flourishing Student: A Practical Guide to Promote Mental Fitness, Wellbeing and Resilience in Higher Education

Fabienne Vailes (2022)

"The REAL University Challenge: Helping students to become flourishing life-long learners. In this new, post-pandemic edition of the classic guide, Fabienne Vailes reveals how you can help your students develop a 'tool box' of well-being techniques that will support them through university and beyond, and ensure your own well-being at the same time. She finishes with thoughts on how universities can implement systemic changes that support flourishing at an institutional, not just at an individual, level." - *review*

[View Now](#)

"Higher wellbeing is associated with better mental and physical health, higher self-esteem, self-efficacy, and effective coping strategies."

- Bret et al, 2023, p. 19700

[Current Psychology](#)





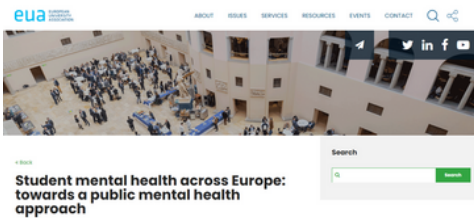
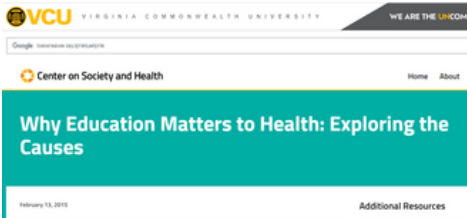
Associations

[European University Association](#)

"The emotional health of students in Europe is receiving increased attention. Here, Valérie Van Hees and Ronny Bruffaerts reflect on the existing European landscape and introduce a new project to support the implementation of sustainable policies across the EHEA."

[Virginia Commonwealth University, Center on Society and Health](#)

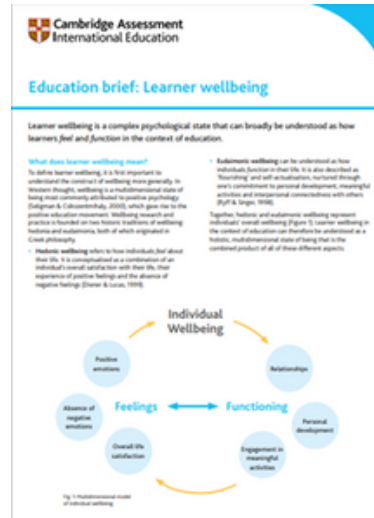
"Why Education Matters to Health: Exploring the Causes is part two of the Education and Health Initiative, a four-part series seeking to raise awareness about the important connections between education and health."



Guides & Reports



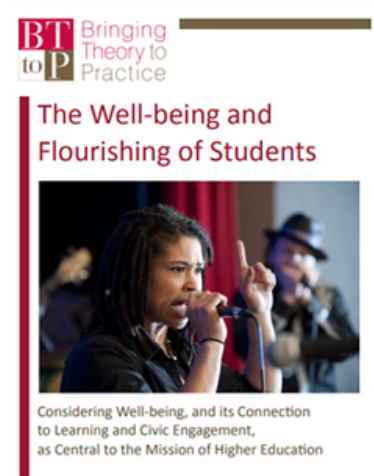
Ipsos, College Student Mental Wellness Advocacy Coalition & Hi, How Are You Project
[Thriving College Students Index Report](#)



Cambridge Assessment International Education
Brief: Learner Wellbeing
[Education Brief: Learner Wellbeing](#)

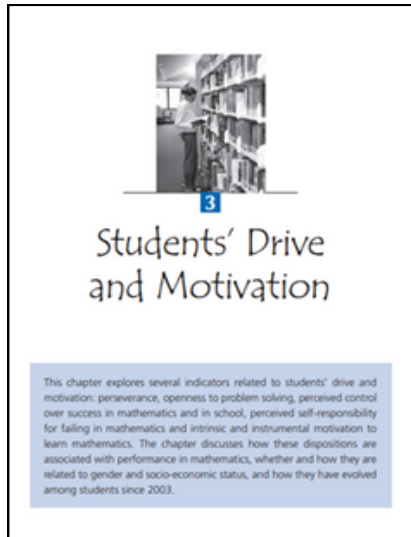


Mary Christie Institute
[The Mental Health and Wellbeing of Young Professionals](#)



Bringing Theory to Practice
[The Well-being and Flourishing of Students](#)

Guides & Reports



OECD
[Students' Drive and Motivation](#)



AXA
[Study of Mind Health and Wellbeing in 2023: Toward a New Understanding](#)

Institutional Resources

[Ten Strategies to Promote Student Flourishing](#) Stanford University Teaching Commons

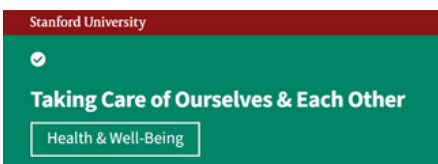


Ten Strategies to Promote Student Flourishing

"Current research identifies five main domains of human flourishing: psychological, social, contemplative, physical, and emotional. The strategies covered here enable instructors to employ effective teaching practices to promote their students' flourishing in these domains. The following strategies have been summarized from a longer version that includes specific examples; [view or download the resource as a Google Doc.](#)"

[The Flourish, November 2023](#) Stanford University Student Affairs

"As the quarter progresses, you may find yourself feeling overwhelmed, exhausted, or lost. Know you are not alone in these feelings, even if it feels like everyone else around you is thriving. With time and some helpful strategies, you can begin to manage these feelings and flourish through the quarter."



Stanford | Student Affairs

Institutional Resources

[Emory's Student Flourishing Initiative: Reimagine the Student Experience](#)

Emory University

"Make good grades. Join a dozen clubs. Get into a top university. Land a high-paying job. Live happily ever after.

For many college students, their journeys thus far have been paved with gold stars and trophies, always chasing the next great achievement. Then, halfway through college or in many cases after graduation, they realize that there is no syllabus for how to live a fulfilling life. Finding purpose and being the best version of oneself is an intentional undertaking that unfolds daily."

[Belonging & Flourishing](#)

Sarah Lawrence College

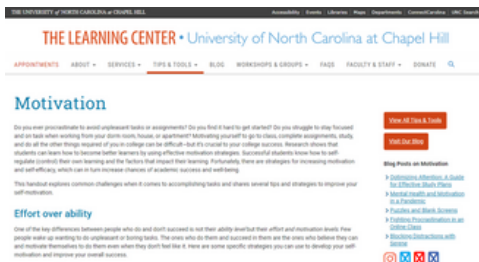
"When you belong, you flourish! At Sarah Lawrence, we understand that developing a sense of belonging is not solely the responsibility of individuals and students, but rather the responsibility of faculty, staff, and student leaders to invite new students into the larger community. Through first year traditions, targeted programming and outreach, and student peer mentorship, SLC aims to welcome students into the community and foster a sense of belonging from the time of admission through graduation and beyond."

[Motivation](#)

University of North Carolina at Chapel Hill, The Learning Center

"Do you ever procrastinate to avoid unpleasant tasks or assignments? Do you find it hard to get started? Do you struggle to stay focused and on task when working from your dorm room, house, or apartment? Motivating yourself to go to class, complete assignments, study, and do all the other things required of you in college can be difficult—but it's crucial to your college success.

Research shows that students can learn how to become better learners by using effective motivation strategies. Successful students know how to self-regulate (control) their own learning and the factors that impact their learning. Fortunately, there are strategies for increasing motivation and self-efficacy, which can in turn increase chances of academic success and well-being. This handout explores common challenges when it comes to accomplishing tasks and shares several tips and strategies to improve your self-motivation."

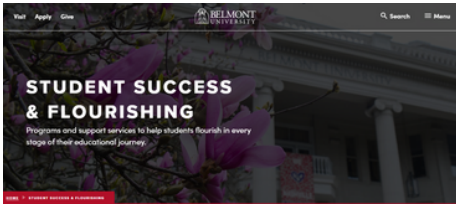


Institutional Resources

[Student Success & Flourishing](#)

Belmont University

"Students succeed when we dedicate and champion resources that improve their experiences in and out of the classroom. It is our hope that by facilitating these exciting opportunities for our students, we can aid in their whole-person formation and development of character, purpose, wisdom and transformational mindset. We are devoted and committed to the success and flourishing of all of our students."



Scales

[Flourishing Scale \(FS\)](#)

NovoPsych



Flourishing Scale (FS)

Instructions:
These questions are designed to measure your self-perceived success in important areas such as relationships, self-esteem, purpose, and optimism. Below are 8 statements with which you may agree or disagree. Using the scale below, indicate your agreement with each item.

	Strongly agree	Agree	Slightly agree	Neutral or neither agree nor disagree	Slightly disagree	Disagree	Strongly disagree
1 I lead a purposeful and meaningful life.	7	6	5	4	3	2	1
2 My social relationships are supportive and rewarding.	7	6	5	4	3	2	1
3 I am engaged and interested in my daily activities.	7	6	5	4	3	2	1
4 I actively contribute to the happiness and well-being of others.	7	6	5	4	3	2	1
5 I am competent and capable in the activities that are important to me.	7	6	5	4	3	2	1
6 I am a good person and live a good life.	7	6	5	4	3	2	1
7 I am optimistic about my future.	7	6	5	4	3	2	1

"The Flourishing Scale is a brief 8-item measure of the respondent's self-perceived success in important areas of life such as relationships, self-esteem, purpose, and optimism. The scale provides a single psychological well-being score and can be used to provide useful feedback for how to improve one's life and may stimulate self-reflection. The Flourishing Scale is best used with individuals without clinical disorders, but rather with individuals seeking to enhance an already relatively adaptive lifestyle."



Personal Wellbeing Index – Adult - 5 (PWI-A)

Instructions:
The following questions ask how satisfied you feel, on a scale from zero to 10. Zero means you feel no satisfaction at all and 10 means you feel completely satisfied.

	0	1	2	3	4	5	6	7	8	9	10
1 (OPTIONAL) Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?	0	1	2	3	4	5	6	7	8	9	10
2 How satisfied are you with your standard of living?	0	1	2	3	4	5	6	7	8	9	10
3 How satisfied are you with your health?	0	1	2	3	4	5	6	7	8	9	10
4 How satisfied are you with what you are achieving in life?	0	1	2	3	4	5	6	7	8	9	10
5 How satisfied are you with your personal relationships?	0	1	2	3	4	5	6	7	8	9	10
6 How satisfied are you with how safe you feel?	0	1	2	3	4	5	6	7	8	9	10
7 How satisfied are you with feeling part of your community?	0	1	2	3	4	5	6	7	8	9	10

[Personal Wellbeing Index-Adult-5 \(PWI-A\)](#)

NovoPsych

"The Personal Wellbeing Index (PWI 5th edition; International Wellbeing Group, 2013) is a 9-item self-report questionnaire that asks people to rate how satisfied they are with different domains of their lives. The PWI is recommended by both the WHO and OECD as a preferred tool for measuring Subjective Wellbeing among adults. The scale is useful for monitoring self-reported quality of life over time particularly in non-psychiatric settings."

Articles

[How to Measure Well-Being: Challenges, recommendations, and new horizons on well-being assessment](#) (Psychology Today, 2021)

[Human Flourishing Blog](#) (Psychology Today, n.d.)

[Student mental health is in crisis. Campuses are rethinking their approach](#) (APA, 2022)

[Understanding the role of stress, personality and coping on learning motivation and mental health in university students during a pandemic](#) (Gibbons, 2022)

[Well-being of students in higher education: The importance of a student perspective](#) (Douwes et al., 2023)

[“You have to be okay with okay”: experiences of flourishing among university students transitioning directly from high school](#) (Volstad et al., 2020)





5

SLEEP, MEMORY & LEARNING

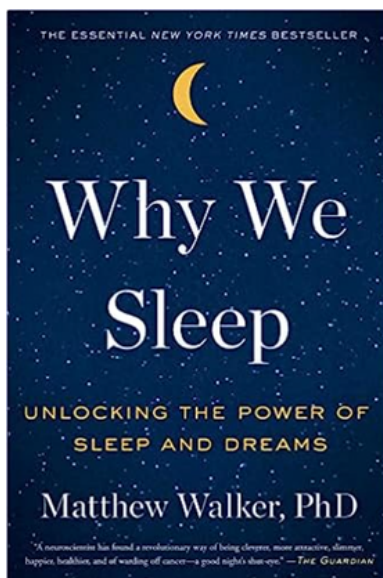
Sleep, memory, and learning are profoundly interconnected. Understanding this relationship is critical for both students and educators. Adequate sleep is essential for memory consolidation, which is the process by which short-term memories are transformed into long-term memories. During sleep, the brain actively rehearses new information and skills learned during the day, making them more durable and easier to retrieve in the future. Lack of sufficient sleep can impair the consolidation process, making learning new concepts more difficult. For students, prioritizing sleep is as important, since sleep directly affects the ability to remember and apply knowledge. For educators, it is important to be aware of the critical role of sleep in learning and to consider sleep when designing schedules, courses, assignments, and assessments to mitigate content, workload, and cognitive overload. Awareness of sleep hygiene can enhance academic performance for students.

Books

Why We Sleep

Matthew Walker, MD (2018)

"Why We Sleep is simply a must-read. World-renowned neuroscientist and sleep expert Matthew Walker takes us on a fascinating and indispensable journey into the latest understandings of the science of sleep. And the book goes way beyond satisfying intellectual curiosity, as it explores the cognitive, health, safety and business consequences of compromising the quality and quantity of our sleep; insights that may change the way you live your life. In these super-charged, distracting times it is hard to think of a book that is more important to read than this one." - review



[View Now](#)

Series & Monograph



**Queensland Brain Institute (QBI)
The Brain Series**
[Issue 2: Learning & Memory from Research to Practice](#)



**INTERACT123
Monograph Series**
[Volume 1: Neuroplasticity, Optimal Learning & Regulations](#)

Videos



Hacking your Memory - with Sleep

Matthew Walker, MD

"We've all been told to get a good night's sleep before a test -- finally, here's the reason why. Sleep scientist Matt Walker explains how getting enough sleep affects how our brains store and process memories."

[Watch Now](#)



BrainGate Clinical Trial Participant Discusses Research on Replay in Motor Cortex During Sleep

Mass General Hospital

"In a new study, researchers discover the first evidence of replay during sleep in the human motor cortex, which governs voluntary movement. This may offer clues about how we learn and form long-term memories, and could provide insights for developers of assistive tools for people with paralysis."

[Watch Now](#)

Videos

The Benefits of a Good Night's Sleep

Shai Marcu

"It's 4 am, and the big test is in 8 hours. You've been studying for days, but you still don't feel ready. Should you drink another cup of coffee and spend the next few hours cramming? Or should you go to sleep? Shai Marcu defends the latter option, showing how sleep restructures your brain in a way that's crucial for how our memory works."

[Watch Now](#)



What Happens To Your Body And Brain If You Don't Get Sleep | The Human Body

Insider Tech

"Sleep expert Matthew Walker breaks down the many effects of sleep deprivation on your brain and body."

[Watch Now](#)



Podcasts

Why is it Essential to Make Time for Sleep?

Matthew Walker, MD

"Sleep is crucial for our health — and there are alarming consequences when we don't get enough. Matthew Walker explores the many benefits of a full night of sleep, and how to make sleep a priority."

[Listen Now](#)



Dr. Gina Poe: Use Sleep to Enhance Learning, Memory & Emotional State | Huberman Lab Podcast"

Huberman Lab Podcast

"My guest this episode is Gina Poe, PhD, a professor in the department of integrative biology & physiology at the University of California, Los Angeles (UCLA). We discuss her research exploring how sleep impacts learning, memory, hormones and emotions." - *Dr. Andrew Huberman*

[Watch Now](#)



Articles

[How Sleep Shapes What We Remember—and Forget](#) (Sakai, 2023)

[Memory and Sleep](#) (Pacheco & Rehman, 2023)

[54 Shocking Sleep Statistics and Trends for 2023](#) (Sleep Advisor, 2023)

[Anxiety and Sleep](#) (Sun & Dimitriu, 2023)

[Sleep Deprivation and Memory: Meta-Analytic Reviews of Studies on Sleep Deprivation Before and After Learning](#) (Newbury et al., 2021)

[The Dangers of Sleep Deprivation](#) (American Heart Association, 2020)

[Remembering to Forget: A Dual Role for Sleep Oscillations in Memory Consolidation and Forgetting](#) (Langille, 2019)

[Reciprocal Relationships Between Daily Sleep and Mood: A Systematic Review of Naturalistic Prospective Studies](#) (Konjarski et al., 2018)

[Sleep On It: How Snoozing Strengthens Memories](#) (NIH, 2013)

[System Consolidation of Memory During Sleep](#) (Born & Wilhelm, 2012)



“Researchers believe the brain may clear out toxins, parse through and store memories, and regulate immune processes, among other essential tasks, during sleep.”

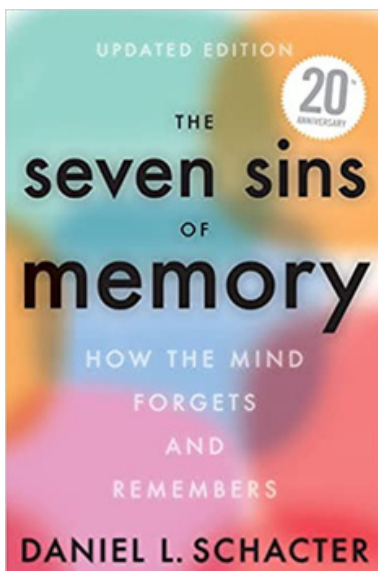
-Balch, 2023, para. 10
[American Association of Medical Colleges](#)



6 LEARNING & MEMORY

Learning and memory are critical concepts for students and educators. For students, the ability to learn new information and retain it as memory is crucial for academic success and the mastery of skills that are applicable in and beyond the classroom. Memory is critical for assessments, discussions, and practical applications, building upon previous knowledge and making connections across disciplines. For educators, understanding how learning and memory works is key to course design, effective teaching, and engagement. Understanding the human learning process and neurodiversity is essential to meeting the diverse needs of all students and enhancing the overall educational experience.

Books



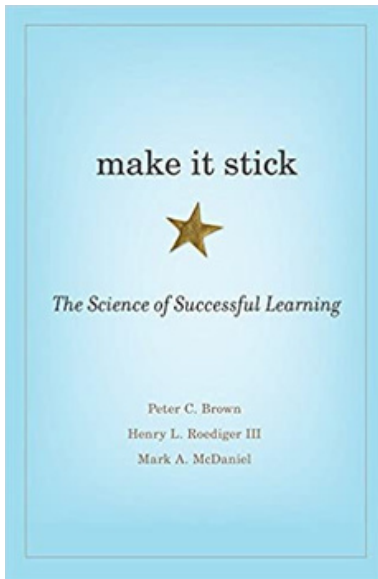
The Seven Sins Of Memory: How the Mind Forgets and Remembers (Updated Edition)

Daniel L. Schacter

"Encourages a new appreciation of the complexity and fragility of memory and how it affects our daily lives." - *book review*

[View Now](#)

Books



Make It Stick: The Science of Successful Learning

Peter C. Brown, Henry L. Roediger III & Mark A. McDaniel

"Many educators are interested in making use of recent findings about the human brain and how we learn... Make It Stick [is] the single best work I have encountered on the subject. Anyone with an interest in teaching or learning will benefit from reading this book, which not only presents thoroughly grounded research but does so in an eminently readable way that is accessible even to students." - *book review*

[View Now](#)



Remembering and Forgetting in the Age of Technology

Michelle D. Miller

"Remembering and Forgetting in the Age of Technology offers concise, nontechnical explanations of major principles of memory and attention - concepts that all teachers should know and that can inform how technology is used in their classes." - *book review*

[View Now](#)

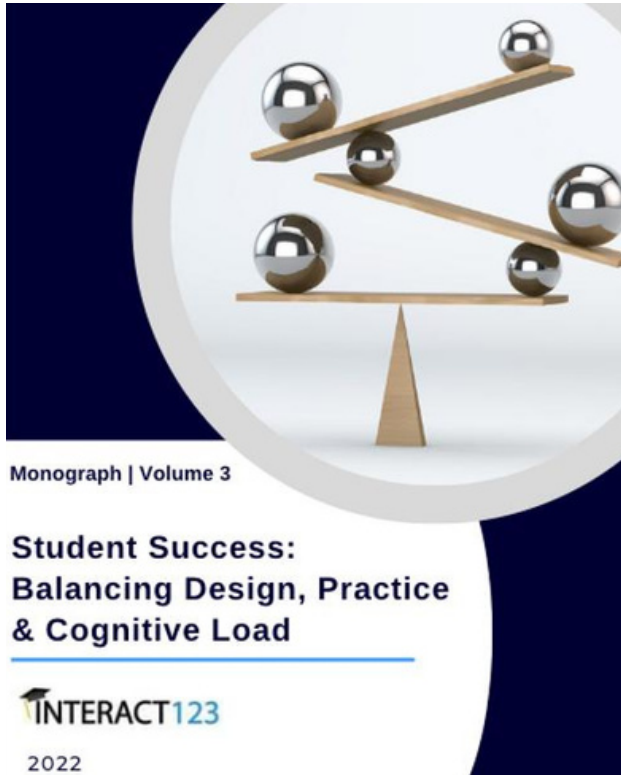
“Learning and memory are closely related concepts. Learning is the acquisition of skill or knowledge, while memory is the expression of what you’ve acquired.”

[American Psychological Association](#)

2023, para. 1

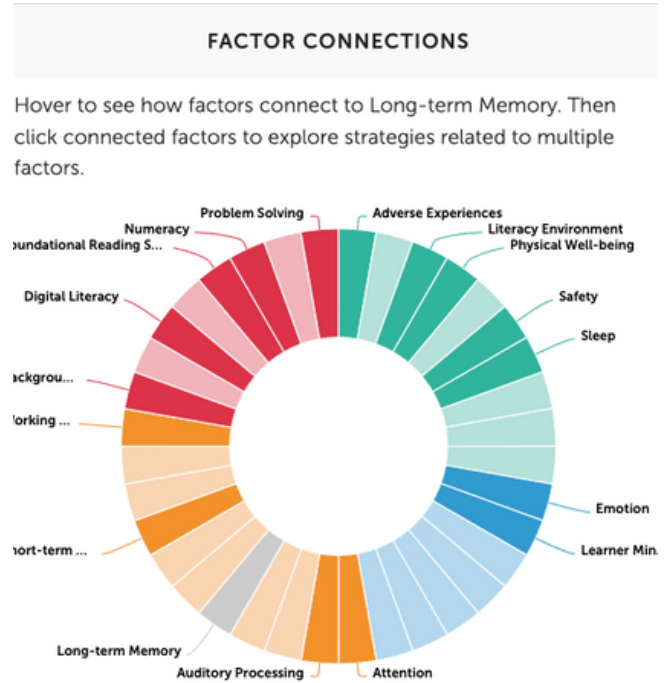


Monographs & Models



**INTERACT123
Monograph Series**

[Volume 3: Student Success: Balancing Design, Practice & Cognitive Load](#)



**Digital Promise
Factor Connection**

[Adult Learner Model
Long-Term Memory](#)

Videos



“How Your Memory Works and Why Forgetting is Totally OK”

Lisa Genova
Neuroscientist

[Watch Now](#)



Videos



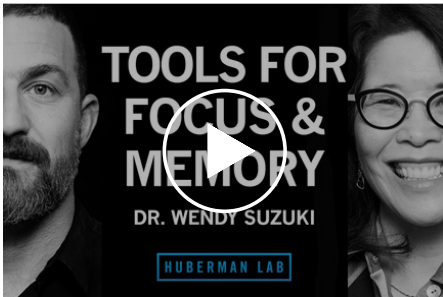
"Powerful Teaching: Unleash the Science of Learning"

Pooja K. Agarwal, Ph.D.

Cognitive Scientist

Author: *Powerful Teaching: Unleash the Science of Learning*

[Watch Now](#)



"Dr. Wendy Suzuki: Boost Attention & Memory with Science-Based Tools"

Huberman Lab Podcast

Wendy Suzuki, Ph.D.

Professor of Neural Science

New York University

[Watch Now](#)

Podcasts



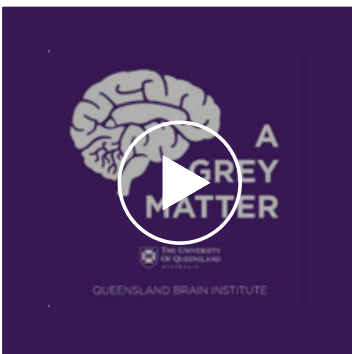
Episode 348: You Must Remember This

Michelle Miller, Ph.D.

Cognitive Psychologist

Professor, Northern Arizona University

[Listen Now](#)



What Did One Brain Cell Say to the Other?

Victor Anggono, Ph.D.

Queensland Brain Institute

The University of Queensland, Australia

[Listen Now](#)

Articles

[How are Memories Formed?](#)

Queensland Brain Institute, The University of Queensland, Australia

[Practice for Knowledge Acquisition \(Not Drill and Kill\)](#)

American Psychological Association: Mary Brabeck, PhD, NYU; Jill Jeffrey, PhD; Sara Fry, MA, NYU

[What is Retrieval Practice?](#)

RetrievalPractice.org

[Using Retrieval Practice to Increase Student Learning](#)

Washington University, Center for Teaching and Learning

[During Sleep, One Brain Region Teaches Another, Converting Novel Data into Enduring Memories](#)

University of Pennsylvania

[Optimized Sensors to Study Learning and Memory](#)

Max Planck Florida Institute for Neuroscience

