The Science of Learning

Bradley Busch 2019-04-11 Supporting teachers in the quest to help students learn as effectively and efficiently as possible, The Science of Learning translates 77 of the most important and influential studies on the topic of learning into accessible and easily digestible overviews. Demystifying key concepts and translating research into practical advice for the classroom, this unique resource will increase teachers’ understanding of research so that they can help students improve how they think, feel and behave in school. From large to small-scale studies, from the quirky to the iconic, The Science of Learning breaks down complicated research to provide teachers with the need-to-know facts and implications of each study. Each overview combines graphics and text, asks key questions, describes related research and considers implications for practice. Highly accessible, each overview is attributed to one of seven key categories: Memory; increasing how much students remember; Mindset, motivation and resilience; improving persistence, effort and attitude; Self-regulation and metacognition; helping students to think clearly and consistently; Student behaviours: adopting positive classroom practices; Parents: how parents’ choices and behaviours impact their children’s learning; Thinking Biases: avoiding faulty thinking habits that get in the way of learning; A hugely accessible resource, this unique book will support, inform and inspire teaching staff, parents and students, and those involved in leadership and CPD.

Powerful Teaching

Pooja K. Agarwal 2019-05-13 Unleash powerful teaching and the science of learning in your classroom Powerful Teaching: Unleash the Science of Learning empowers educators to harness rigorous research on how students learn and unleash it in their classrooms. In this book, cognitive scientist Pooja K. Agarwal, Ph.D., and veteran K-12 teacher Patrice M. Bain, Ed.S., deciper cognitive science research and illustrate ways to successfully apply the science of learning in classrooms settings. This practical resource is filled with evidence-based strategies that are easily implemented in less than a minute—without additional prepping, grading, or funding! Research demonstrates that these powerful strategies raise student achievement by a letter grade or more; boost learning for diverse students, grade levels, and subject areas; and enhance students’ higher order learning and transfer of knowledge beyond the classroom. Drawing on a fifteen-year scientist-teacher collaboration, more than 100 years of research, and rich evidence-based practice from education K-12 and higher education, the authors present highly accessible step-by-step guidance on how to transform teaching with four essential strategies: Retrieval practice, spacing, interleaving, and feedback-driven metacognition. With Powerful Teaching, you will: Develop a deep understanding of powerful teaching strategies based on the science of learning Gain insight from real-world examples of how evidence-based strategies are being implemented in a variety of academic settings Think critically about your current teaching practices from a research-based perspective Develop tools to share the science of learning with students and parents, ensuring success inside and outside the classroom Powerful Teaching: Unleash the Science of Learning is an indispensable resource for educators who want to take their instruction to the next level. Equipped with scientific knowledge and evidence-based tools, turn your teaching into powerful teaching and unleash student learning in your classroom.

Visible Learning and the Science of How We Learn

John Hattie 2013-10-08 On publication in 2009 John Hattie’s Visible Learning presented the biggest ever collection of research into what actually works in schools to improve children’s learning. Not what was fashionable, not what political and educational vested interests wanted to champion, but what actually produced the best results in terms of improving learning and educational outcomes. It became an instant bestseller and was described by the TES as revealing education’s ‘holy grail’. Now in this latest book, John Hattie has joined forces with cognitive psychologist Greg Yates to build on the original data and legacy of the Visible Learning project, showing how its underlying ideas and the cutting edge of cognitive science can form a powerful and complimentary framework for shaping learning in the classroom and beyond. Visible Learning and the Science of How We Learn explains the major principles and strategies of learning, outlining why it can be so hard sometimes, and yet easy on other occasions. Aimed at teachers and
The Science of Learning and the Art of Teaching

students, it is written in an accessible and engaging style and can be read cover to cover, or used on a chapter-by-chapter basis for essay writing or staff development. The book is structured in three parts – ‘learned within classrooms’, ‘learning foundations’, which explains the cognitive building blocks of knowledge acquisition and ‘know thyself’ which explores confidence and self-knowledge. It also features extensive interactive appendices containing study guide questions to encourage critical thinking, annotated bibliographic entries with recommendations for further reading, links to relevant YouTube clips, and ‘insider tips’ which draw upon the latest international research into how the learning process works and how to maximise impact on students, covering such topics as: teacher personality; expertise and teacher-student relationships; how knowledge is stored and the impact of cognitive load; thinking fast and thinking slow; the psychology of selection for the role of comept in school and at home; invisible gorillas and the IKEA effect; digital native theory; myths and fallacies about how people learn. This fascinating book is aimed at any student, teacher or parent requiring an up-to-date commentary on how research into human learning processes can inform our teaching and what goes on in our schools. It takes a broad sweep through findings stemming mainly from social and cognitive psychology and presents them in a usable format for students and teachers at all levels, from preschool to tertiary training institutes.

Make It Stick

Peter C. Brown 2014-04-14 Discusses the best methods of learning, describing how rereading and rote repetition are counterproductive and how such techniques as self-testing, spaced retrieval, and finding additional layers of information in new material can enhance learning.

Learning Under the Lens

Annemaree Carroll 2020-12-02 Learning Under the Lens: Applying Findings from the Science of Learning to the Classroom highlights the innovative approach being undertaken by researchers from the disparate fields of neuroscience, education and psychology working together to gain a better understanding of how we learn, and its potential to improve student learning outcomes. The book is structured in four parts: ‘Science of learning: a policy perspective’ sets the scene for this emerging field of research; ‘Self regulation of learning’ and ‘Technology and learning’ feature findings by eminent international and national researchers in the field and provides an insight into some of the innovative research illustrating the depth, breadth and multi-disciplinarity of the research; and ‘Research translation’ focuses on the scale-up and implementation of research findings in authentic learning settings, and showcases research findings which are having impact in learning environments. This fascinating book is intended as a reference tool to create awareness among researchers, policy makers, and education practitioners of the research being undertaken in the science of learning field and its potential to impact student learning outcomes.

The Science of Accelerated Learning

Peter Hollins 2019-08-13 Make learning: painless, exciting, habitual, and self-motivating. Absorb info like a human sponge. We’ve never been taught how to learn, and that’s a shame. This book is the key to reversing all the misconceptions you have and making learning fun again. Scientifically-proven, step-by-step methods for effective learning. The Science of Accelerated Learning is not a textbook - it’s a guidebook for your journeys in learning. It will show you the most effective methods, the pitfalls we must avoid, and the habits we must cultivate. This book is highly organized and addresses all phases of the learning process, from creating a positive environment, to the biological basis of memory, to learning theories, and more. It borrows from multiple scientific disciplines to present comprehensive techniques to simply learn more, faster. Master your approach and save countless hours. Peter Hollins has studied psychology and peak human performance for over a dozen years and is a best-selling author. He has worked with a multitude of individuals to unlock their potential and path towards success. His writing draws on his academic, coaching, and research experience. Smarter, faster, and better ways to achieve expertise. • The physical and psychological pre-conditions to effective learning. • How our memory works and how it make work for you. • The learning techniques that work with evidence. • How to never need to cram again. Tame distractions and procrastination through habits. • Why Einstein loved to play violin while working. • The learning mistakes you are probably committing right now. • Steps to building true expertise. • How to teach effectively, and teach to learn. Outpace others, beat the competition, and get where you want to go in record time.

The Science of Learning and the Art of Teaching

Jerome A. Feldman 2007 A guide for educators provides information on making connections with students, planning a course syllabus, designing lessons, and preparing activities.

How Learning Works

Susan A. Ambrose 2010-04-16 Praise for How Learning Works “How Learning Works is the perfect title for this excellent book. Drawing upon new research in psychology, education, and cognitive science, the authors have demystified a complex topic into clear explanations of seven powerful learning principles. Full of great ideas and practical suggestions, all based on solid research evidence, this book is essential reading for instructors at all levels who wish to improve their students’ learning.” —Barbara Gros Davis, assistant vice chancellor for educational development, University of California, Berkeley, and author, Tools for Teaching “This book is a must-read for every instructor, new or experienced. Although I have been teaching for almost thirty years, as I read this book I found myself resonating with many of its ideas, and I discovered new ways of thinking about teaching.” —Eugenia T. Paulus, professor of chemistry, North Hennepin Community College, and 2008 U.S. Community Colleges Professor of the Year from The Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support of Education “Thank you Carnegie Mellon for making accessible what has previously been inaccessible to those of us who are not learning scientists. Your focus on the essence of learning combined with concrete examples of the daily challenges of teaching and clear tactical strategies for faculty to consider is a welcome work. I will recommend this book to all my colleagues.” —Catherine M. Cresserly, senior partner, The Carnegie Foundation for the Advancement of Teaching “As you read about each of the seven basic learning principles in this book, you will find advice that is grounded in learning theory, based on research evidence, relevant to college teaching, and easy to understand. The authors have extensive knowledge and experience in applying the science of learning to college teaching, and they graciously share it with you in this organized and readable book.” —From the foreword by Richard E. Mayer, professor of psychology, University of California, Santa Barbara; coauthor, e-Learning and the Science of Instruction; and author, Multimedia Learning

Small Teaching

James M. Lang 2016-03-07 Employ cognitive theory in the classroom every day Research into how we learn has opened the door for utilizing cognitive theory to facilitate better student learning. But that’s easier said than done. Many books about cognitive theory introduce radical but impractical theories, failing to make the connection to the classroom. In Small Teaching, James Lang presents a strategy for improving student learning with a series of modest but powerful changes that make a big difference—many of which can be put into practice in a single class period. These strategies are designed to bridge the chasm between primary research and the classroom environment in a way that can be implemented by any faculty in any discipline, and even integrated into pre-existing teaching techniques. Learn, for example: How does one become good at retaining knowledge from memory? How does making predictions now help us learn in the future? How do instructors instill fixed or growth mindsets in their students? Each chapter introduces a basic concept in cognitive theory, explains when and how it should be employed, and provides firm examples of how the intervention has been or could be used in a variety of disciplines. Small teaching techniques include brief classroom or online learning activities, one-time interventions, and small modifications in course design or communication with students.

The Spark of Learning

Sarah Rose Cavanagh 2016 Historically we have constructed our classrooms with the assumption that learning is a dry, stiff affair best conducted in quiet tones and ruled by an unemotional consideration of the facts. The field of education, however, is beginning to awaken to the potential power of emotions to fuel learning, informed by contributions from psychology and neuroscience. In friendly, readable prose, Sarah Rose Cavanagh argues that if you as an educator want to capture your students’ attention, harness their working memory, bolster their long-term retention, and enhance their motivation, you should consider the emotional impact of your teaching style and course design. To make this argument, she brings to bear a wide range of evidence from the study of education, psychology, and neuroscience, and she provides practical examples of successful classroom activities from a variety of disciplines in secondary and higher education.

Learn Better

Ulrich Boser 2019-09-03 For centuries, experts have argued that learning was about memorizing information: You’re supposed to study facts, dates, and details; burn them into your memory; and then apply that knowledge at opportune times. But this approach to learning isn’t nearly enough for the world that we live in today, and in Learn Better journalist and education researcher Ulrich Boser demonstrates that how we learn can matter just as much as what we learn. In this brilliantly researched book, Boser maps out the new science of learning, showing how simple techniques
like comprehension check-ins and making material personally relatable can help people gain expertise in dramatically better ways. He covers six key steps to help you “learn how to learn,” all illuminated with fascinating stories like how Jackson Pollock developed his unique painting style and why an ancient Japanese counting device allows kids to do math at superhuman speeds. Boser’s witty, engaging writing makes this book feel like a guilty pleasure, not homework. Learn Better will revolutionize the way students and society alike approach learning and makes the case that being smart is not enough. One story about explicit models, how kids acquire skills and knowledge on their own, and why you should take advantage of the four pillars of the brain’s learning algorithm: attention, active engagement, error feedback and consolidation. The Science of Learning That Sticks: Bryan Goodwin 2020-06-05 In far too many classrooms, the emphasis is on instructional strategies that teachers employ rather than on what students should be doing or thinking about as part of their learning. What’s more, students’ minds are something of a mysterious “black box” for most teachers, so when learning breaks down, they’re not sure what went wrong or what to do differently to help students learn. It doesn’t have to be this way. Learning That Sticks helps you look inside that black box. Bryan Goodwin and his coauthors unpack the cognitive science underlying research-supported learning strategies so you can sequence them into experiences that challenge, inspire, and engage your students. As a result, you’ll learn to teach with more intentionality—understanding not just what to do but also when and why to do it. By way of an easy-to-use six-phase model of learning, this book analyzes how the brain reacts to, stores, and retrieves new information. * Helps you “zoom out” to understand the process of learning from beginning to end. * Helps you “zoom in” to see what’s going on in students’ minds during each phase. Learning may be complicated, but learning about learning doesn’t have to be. And to that end, Learning That Sticks helps shine a light into all the black boxes in your classroom and make your practice the most powerful it can be. This product is a copublication of ASCD and McREL.

How We Learn-Stanislas Dehaene 2021-02-02 Humanity’s greatest feat is our incredible ability to learn. Even in their first year, infants acquire language, visual and social knowledge at a rate that surpasses the best supercomputers. But how, exactly, do our brains learn? In How We Learn, leading neuroscientist Stanislas Dehaene delves into the psychological, neuronal, synaptic and molecular mechanisms of learning. Drawing on case studies of children who learned despite huge difficulty and trauma, he explains why youth is such a sensitive period, during which brain plasticity is maximal, but also assures us that our abilities continue into adulthood. We can all enhance our learning and memory at any age and ‘learn to learn’ by taking maximal advantage of the four pillars of the brain’s learning algorithm: attention, active engagement, error feedback and consolidation. The human brain is an extraordinary machine. Its ability to process information and adapt to circumstances by reprogramming itself is unparalleled, and it remains the best source of inspiration for recent developments in artificial intelligence. How We Learn finds the boundary of computer science, neurobiology, cognitive psychology and education to explain how learning really works and how to make the best use of the brain’s learning algorithms - and even improve them - in our schools and universities as well as in everyday life.

The Psychology of Learning Science-Shawn M. Gulya 2012-11-12 Focusing on the teaching and learning of science concepts at the elementary and high school levels, this volume bridges the gap between state-of-the-art research and classroom practice in science education. The contributors -- science educators, cognitive scientists, and psychologists -- draw clear connections between theory, research, and instructional application, with the ultimate goal of improving science teachers' effectiveness in the classroom. Toward this end, explicit models, illustrations, and examples drawn from actual science classes are included.

A Guide to Effective Studying and Learning-Matthew G. Rhodes 2020 "Higher education text book dealing with practical strategies to optimize learning and is the only book of its kind to be well grounded and informed by the scientific literature on learning and memory"--

e-Learning and the Science of Instruction-Ruth C. Clark 2016-02-19 The essential e-learning design manual, updated with the latest research, design principles, and examples e-Learning and the Science of Instruction is the ultimate handbook for evidence-based e-learning design. Since the first edition of this book, e-learning has grown to account for at least 40% of all training delivery media. However, digital courses often fail to reach their potential for learning effectiveness and efficiency. This guide provides research-based guidelines on how best to present content with text, graphics, and audio as well as the conditions under which those guidelines are most effective. Third, this updated fourth edition describes evidence-based guidelines, psychology, and applications for ways to improve learning through personalization techniques, coherence, animations, and a new chapter on evidence-based game design. The chapter on the Cognitive Theory of Multimedia Learning introduces three forms of cognitive load which are revisited throughout each chapter as the psychological basis for chapter principles. A new chapter on metacognition in learning lays the groundwork for in-depth reviews of how to leverage worked examples, practice, online collaboration, and learner control to optimize learning. The updated instructor's materials include a syllabus, assignments, storyboard projects, and test items that you can adapt to your own course schedule and projects. Co-authored by the most productive instructional research scientist in the world, Dr. Richard E. Mayer, this book distills copious e-learning research into a practical manual for improving learning through optimal design and delivery. Get up to date on the latest e-learning research Adopt best practices for communicating information effectively Use evidence-based techniques to engage your learners Replace popular instructional ideas, such as learning styles with evidence-based guidelines Apply evidence-based design techniques to optimize learning games e-Learning continues to grow as an alternative or adjunct to the classroom, and correspondingly, has become a focus among researchers in learning-related fields. New findings from research laboratories can inform the design and development of e-learning. However, much of this research published in technical journals is inaccessible to those who use e-learning material. By collecting the latest evidence into a single volume and translating the theoretical into the practical, e-Learning and the Science of Instruction has become an essential resource for consumers and designers of multimedia learning.

Learning Begins-Andrew C. Watson 2017-03-08 Learning Begins, written by a teacher for teachers, translates current brain research into practical classroom strategies. Because students learn with their brains, it simply makes sense for teachers to explore educational psychology and neuroscience. And yet, information in these fields can be daunting and contradictory. Worse still, few researchers can clearly explain the classroom uses of their remarkable discoveries. Learning Begins both explains this research and makes it useful for teachers and administrators. Part I investigates the science of working memory: a cognitive capacity essential to all school work. When teachers recognize the many classroom perils that can overwhelm working memory, they’ll understand why brain trauma, academic stress, and traumatic events can undermine strategies to protect it, and thereby promote student learning. Part II reveals the complexities of student attention. By understanding the three neural sub-processes that create attention, teachers can structure their classrooms and their lessons to help students focus on and understand new material. Written in a lively and approachable voice, based on years of classroom experience and a decade of scientific study, Learning Begins makes educational psychology and neuroscience clear and useful in schools and classrooms.

The Science of Self-Learning-Peter Hollins 2019-10-22 How to learn effectively when you have to be both the teacher and student. Work smarter and save yourself countless hours. Self-learning is not just about performing better in the classroom or the office. It’s about being able to aim your life in whatever direction you choose and conquering the obstacles in front of you. Replacable methods and insights to build expertise from ground zero. The Science of Self-Learning focuses not only on learning, but what it means to direct your own learning. Anyone can read a book, but what about more? You will learn to deconstruct a topic and then construct your own syllabus and plan. Gathering information, initial research, having a dialogue with new information - unlock these skills and you will unlock your life. Make complex topics painless and less intimidating to approach and break down. Peter Hollins has studied memory and peak human performance for over a dozen years and is a bestselling author. He has worked with a multitude of individuals to unlock their potential and path towards success. His writing draws on his academic, coaching, and research experience. Develop habits and skills to fulfill your career or hobby goals.-Understanding the learning success pyramid and 5 core principles that are directly informed by the latest research- How to stay motivated in tedious and tiring learning.-The SQ3R Method and conversing with information. Science-based methods to help your brain absorb and retain more.-Speed reading and comprehension.-How to plan and schedule like Benjamin Franklin.-How to extract information like juice and discover the hidden meaning.
learning. But relying on intuition may be a bad idea for teachers and learners alike. This accessible guide helps teachers to integrate effective, research-backed strategies for learning into their classroom practice. The book explores exactly what constitutes good evidence for effective learning and teaching strategies, how to make evidence-based judgments instead of relying on intuition, and how to apply findings from cognitive psychology directly to the classroom. Including real-life examples and case studies, FAQs, and a wealth of engaging illustrations to explain complex concepts and emphasize key points, the book is divided into four parts: Evidence-based education and the science of learning Basics of human cognitive processes Strategies for effective learning Tips for students, teachers, and parents. Written by “The Learning Scientists” and fully illustrated by Oliver Caviglioli, Understanding How We Learn is a rejuvenating and fresh examination of cognitive psychology’s application to education. It is an essential read for all teachers and educators, designed to convey the concepts of research to the reality of a teacher's classroom.

The Art and Science of Teaching—Robert J. Marzano 2007-01-01 The popular author of Classroom Instruction That Works discusses 10 questions that can help teachers sharpen their craft and do what really works for the particular students in their classroom.

From the Laboratory to the Classroom—Jared Cooney Horvath 2016-07-22 Over recent years the field of Science of Learning has increased dramatically. Unfortunately, despite claims that this work will greatly impact education, very little research makes it into teacher practice. Although the reasons for this are varied, a primary concern is the lack of a proper translation framework. From the Laboratory to the Classroom aims to consolidate information from many different research disciplines and correlate learning principles with known classroom practices in order to establish explanatory foundations for successful strategies that can be implemented into the classroom. It combines theoretical research with the diverse and dynamic classroom environment to deliver original, effective and specific teaching and learning strategies and address questions concerning what possible methods and platforms people learn in. It is divided into five sections, chapters cover: A Framework for Organizing and Translating Science of Learning Research Motivation and Attention as Foundations for Student Learning Memory and Metamemory Considerations in the Instruction of Human Beings Science of Learning in Digital Learning Environments Educational Approaches for Students Experiencing Learning Difficulties and Developmental Characteristics of Gifts Children Brain, Behaviour and Classroom Practice Forging Research/Practice Relationships via Laboratory Schools This fascinating text gathers an international team of expert scientists, teachers, and administrators to present a coherent framework for the vital translation of laboratory research for educational practice. Applying the Science of Learning framework to a number of different educational domains, it will be an essential guide for both a student or researcher in education, educational psychology, neuropsychology, educational technology and the emergent field of neuroeducation.

The Science of Rapid Skill Acquisition—Peter Hollins 2019-07-24 Scientific Methods to accelerate your learning to save time, beat competition, and get from Point A to Point B at the speed of light. Learning is the key to bettering your circumstances and becoming the person you want to be. Skills, information, and abilities will never come to you - it's up to you to seek them out, and this book shows you how to do so in the most effective and efficient manner. Applicable and actionable advice - not just theory and description. Work smarter, not harder. The Science of Rapid Skill Acquisition is the definitive resource to get you where you want to be in terms of a new talent, skill, or ability. You may not realize it, but each day is a set of skills and tasks that we repeat. Each hobby and interest is also a set of skills and tasks. This book focuses on what matters in processing information and using it to achieve your goals. Rapid skill acquisition is how you get ahead in life professionally and personally. Learn to rapidly train your brain and develop muscle memory. Understand the underlying psychology and biology. Peter Hollins has studied psychology and peak human performance for over a dozen years and is a bestselling author. He has worked with a multitude of experts and professionals to present a coherent framework for the vital translation of laboratory research for educational practice. Applying the Science of Learning framework to a number of different educational domains, it will be an essential guide for both a student or researcher in education, educational psychology, neuropsychology, educational technology and the emergent field of neuroeducation.

How Students Learn—National Research Council 2005-01-28 How Students Learn: Science in the Classroom builds on the discoveries detailed in the best-selling How People Learn. Now these findings are presented in a way that teachers can use immediately, to revitalize their work in the classroom for even greater effectiveness. Organized for utility, the book explores how the principles of learning can be applied in science at three levels: elementary, middle, and high school. The book explores the principles of learning and teaching and classroom instruction. Their recounting of personal teaching experiences lends strength and warmth to this volume. This book discusses how to build straightforward science experiments into true understanding of scientific principles. It also features illustrated suggestions for classroom activities.

Learning Science: Theory, Research, and Practice—Feldman 2019-08-09 Cutting-edge insights and perspectives from today's leading minds in the field of learning science. The discipline of learning science is fast becoming a primary approach for answering one of the most important questions of our time: How do we most effectively educate students to reach their full potential? Spanning the disciplines of psychology, data science, cognitive science, sociology, and anthropology, Learning Science offers solutions to our most urgent educational challenges. Composed of insightful essays from top figures in their respective fields, the book also shows how through understanding of this critical discipline all but ensures better decision making when it comes to education. Chapters include: • Exploring Student Interactions in Collaborative Problem-Solving with a Multimodal Approach • Learning Science Research Through a Social Science Lens • Semantic Representation & Analysis and its Application in Conversation-Based Intelligent Tutoring Systems • Advancing the Relationship Between Learning Sciences and Teaching Practice • Advancing the State of Online Learning: Stay Integrated, Stay Accessible, Stay Curious • Designing Immersive Authentic Simulations that Enhance Motivation and Learning • High School OER STEM Lessons Leading to Deep Learning, For Students and Teachers • How to Increase Learning While Not Decreasing the Fun in Educational Games Whether you're creating curricula, developing policies, or educating students in a classroom setting, Learning Science delivers the knowledge, insight, and inspiration you need to do your part to ensure every learner meets his or her full potential.
The ABCs of How We Learn: 26 Scientifically Proven Approaches, How They Work, and When to Use Them-Daniel L. Schwartz 2018-07-26 Selected as one of NPR's Best Books of 2016, this book offers superior learning tools for teachers and students, from A to Z. An expansive explosion in research on how people learn has revealed many ways to improve teaching and catalyze learning at all ages. The purpose of this book is to present this new science of learning so that educators can creatively translate the science into exceptional practice. The book is highly appropriate for the preparation and professional development of teachers and college faculty, but also parents, trainers, instructional designers, psychology students, and simply curious folks interested in improving their own learning. Based on a popular Stanford University course, The ABCs of How We Learn uses a novel format that is part textbook, part a popular read. With everyday language, engaging examples, and a sense of humor; and solid evidence, it describes 26 unique ways that students learn. Each chapter offers a concise and approachable breakdown of one way people learn, how it works, how we know it works, how and when to use it, and what mistakes to avoid. The book presents learning research in a way that educators can creatively translate into exceptional lessons and classroom practice. The book covers field-defining learning theories ranging from behaviorism (R is for Reward) to cognitive psychology (S is for Self-Explanation) to social psychology (O is for Observation). The chapters also introduce lesser-known theories exceptionally relevant to practice, such as arousal theory (X is for eXcitement). Together the theories, evidence, and strategies from each chapter can be combined endlessly to create original and effective learning plans and the means to know if they succeed.

Visible Learning and the Science of How We Learn-John Hattie 2013-10-08 On publication in 2009 John Hattie's Visible Learning presented the biggest ever collection of research into what actually work in schools to improve children's learning. Not only what was fashion, or what vested interests wanted to champion, but what actually produced the best results in terms of improving learning and educational outcomes. It became an instant bestseller and was described by the TES as revealing education's 'holy grail'. Now in this latest book, John Hattie has joined forces with cognitive psychologist Greg Yates to build on the original data and legacy of the Visible Learning project, showing how it's underlying ideas and the cutting edge of cognitive science can form a powerful and complimentary framework for shaping learning in the classroom and beyond. Visible Learning and the Science of How We Learn explains the major principles and strategies of learning, outlining why it can be so hard sometimes, and yet easy on other occasions. Aimed at teachers and students, it is written in an accessible, engaging and enjoyable style and can be read cover to cover, or used on a chapter-by-chapter basis for essay writing or staff development. The book is structured in three parts - 'Learning within classrooms', 'learning foundations', which explains the cognitive building blocks of knowledge acquisition and 'know thyself' which explores, confidence and self-knowledge. It also features extensive interactive appendices containing study guide questions to encourage critical thinking, annotated bibliographic entries with recommendations for further reading, links to relevant websites and YouTube clips. Throughout, the authors draw upon the latest international research into how the learning process works and how to maximise impact on students, covering such topics as: teacher personality; expertise and teacher-student relationships; how knowledge is stored and the impact of cognitive load; thinking fast and thinking slow; the psychology of self-control; the role of conversation at school and at home; invisible gorillas and the IKEA effect; digital native theory; myths and fallacies about how people learn. This fascinating book is aimed at any student, teacher or parent requiring an up-to-date commentary on how research into human learning processes can inform our teaching and what goes on in our schools. It takes a broad sweep through findings stemming mainly from social and cognitive psychology and presents them in a useable format for students and teachers at all levels, from preschool to tertiary learning institutes.

How to Be a Successful Student-Richard E. Mayer 2018-10-26 How to Be a Successful Student is a clear, concise, evidence-based guide to the habits that are scientifically proven to help people learn. Acclaimed educational psychologist Richard Mayer distills cutting edge research to focus on the 20 best study habits for college students, including habits for motivating yourself to learn, managing your learning environment, and effectively applying learning strategies. This accessible, practical book covers all three areas with evidence-based, approachable suggestions to help you become a successful student by developing effective study habits and rejecting ineffective ones.

Understanding how Young Children Learn-Wendy L. Ostrove 2012 Human beings are born to learn. During the last few decades, developmental science has exploded with discoveries of how, specifically, learning happens. This provides us with an unprecedented window into children's minds: how and when they begin to form perceptions, understand and apply knowledge. Wendy Ostrov builds on this research and shows you how to harness the power of the brain, the most powerful learning machine in the universe. She highlights the processes that inspire or propel learning—play, confidence, self-regulation, movement, mnemonic strategies, metacognition, articulation, and collaboration—and distills the research into a synthesis of the most important takeaways ideas that teachers will need as they design their curriculum and pedagogy. Each chapter has suggested activities for exactly how teachers can put these into practice in the classroom. When you understand how your students learn, you will know how to teach them in ways that harness the brain's natural learning systems. Dr. Wendy L. Ostrove is Associate Professor in the Program for the Advancement of Learning at Curry College.

How People Learn II-National Academies of Sciences, Engineering, and Medicine 2018-09-27 There are many reasons to be curious about the way
people learn, and the past several decades have seen an explosion of research that has important implications for individual learning, schooling, workforce training, and policy. In 2000, How People Learn: Brain, Mind, Experience, and School: Expanded Edition was published and its influence has been wide and deep. The report summarized insights on the nature of learning in school-aged children; described principles for the design of effective learning environments; and provided examples of how that could be implemented in the classroom. Since then, researchers have continued to investigate the nature of learning and have generated new findings related to the neurological processes involved in learning, individual and cultural variability related to learning, and educational technologies. In addition to expanding scientific understanding of the mechanisms of learning and how the brain adapts throughout the lifespan, there have been important discoveries about influences on learning, particularly sociocultural factors and the structure of learning environments. How People Learn II: Learners, Contexts, and Cultures provides a much-needed update incorporating insights gained from this research over the past decade. The book expands on the foundation laid out in the 2000 report and takes an in-depth look at the constellation of influences that affect individual learning. How People Learn II will become an indispensable resource to understand learning throughout the lifespan for educators of students and adults.

What Does This Look Like in the Classroom?: Bridging the Gap Between Research and Practice - Robin Macpherson 2019-04-30

"More research-based teaching" is the cure-all answer so many people give when asked how we can most effectively improve education today. Every year thousands of research papers are published, some of which contradict each other. Schools that adopt and drop new reforms with every new research fad find themselves wasting resources and burning out. How can school leaders discern which trends are essential to school improvement? How can busy educators know which research is worth investing time in? What does the research look like in a real classroom, practiced by a real teacher? In this thorough, enlightening, and comprehensive book, Carl Hendrick and Robin Macpherson ask 18 of today's leading educational thinkers to distill the most up-to-date research into effective classroom practice in 10 of the most important areas of teaching. Brought to an American audience for the first time, it's an indispensable primer for every teacher and school leader who wants to practice what good research says really works. Contributors: Assessments, Grading and Feedback: Dylan Wiliam & Daisy Christodoulou Behavior: Tom Bennett & Jill Berry; Classroom Talk and Questioning: Martin Robinson & Doug Lemov Learning Myths: David Didau & Pedro de Bruyckere Motivation: Nick Rose & Lucy Crehan Psychology and Memory: Paul Kirschner & Yana Weinstein Special Educational Needs: Jarlath O'Brien & Maggie Snowling Technology: Jose Picardo & Neelam Parmar Reading and Literacy: Alex Quigley & Dianne Murphy

Visible Learning for Science, Grades K-12 - John Almarode 2018-02-15

Inquiry, laboratory, project-based learning, discovery learning—which science instructional approach is most effective? In Visible Learning for Science, the authors reveal that it's not which strategy, but when, and plot a vital K-12 framework for choosing the right approach at the right time, depending on where students are within the three phases of learning: surface, deep, and transfer. Synthesizing state-of-the-art science instruction and assessment with John Hattie's cornerstone educational research, this book empowers you to plan, develop, and implement high-impact instruction at each phase so all students demonstrate more than a year's worth of learning for every year in school.