

## Applied Metacognition

In the past fifty years, scholars of human development have been moving from studying change in humans within sharply defined periods, to seeing many more of these phenomenon as more profitably studied over time and in relation to other processes. The Handbook of Life-Span Development, Volume 1: Cognition, Biology, and Methods presents the study of human development conducted by the best scholars in the 21st century. Social workers, counselors and public health workers will receive coverage of of the biological and cognitive aspects of human change across the lifespan.

The Open Access version of this book, available at <https://www.taylorfrancis.com/books/e/9781351049139>, has been made available under a Creative Commons Attribution-Non Commercial-No Derivatives 4.0 license. This volume offers an exhaustive look at the latest research on metacognition in language learning and teaching. While other works have explored certain notions of metacognition in language learning and teaching, this book, divided into theoretical and empirical chapters, looks at metacognition from a variety of perspectives, including metalinguistic and multilingual awareness, and language learning and teaching in L2 and L3 settings, and explores a range of studies from around the world. This allows the volume to highlight a diverse set of methodological approaches, including blogging, screen recording software, automatic translation programs, language corpora, classroom interventions, and interviews, and subsequently, to demonstrate the value of metacognition research and how insights from such findings can contribute to a greater understanding of language learning and language teaching processes more generally. This innovative collection is an essential resource for students and scholars in language teaching pedagogy, and applied linguistics.

The central unifying theme of this state-of-the-art contribution to research on literacy is its rethinking and reconceptualization of individual differences in reading. Previous research, focused on cognitive components of reading, signaled the need for ongoing work to identify relevant individual differences in reading, to determine the relationship(s) of individual differences to reading development, and to account for interactions among individual differences. Addressing developments in each of these areas, this volume also describes affective individual differences, and the environments in which individual differences in reading may emerge, operate, interact, and change. The scant comprehensive accounting of individual differences in reading is reflected in the nature of reading instruction programs today, the outcomes that are expected from successful teaching and learning, and the manner in which reading development is assessed. An important contribution of this volume is to provide prima facie evidence of the benefits of broad conceptualization of the ways in which readers differ. The Handbook of Individual Differences in Reading moves the field forward by encompassing cognitive, non-cognitive, contextual, and methodological concerns. Its breadth of coverage serves as both a useful summary of the current state of knowledge and a guide for future work in this area.

"This two-volume reference is a comprehensive, up-to-date examination of the most important theory, concepts, methodological approaches, and applications in the burgeoning field of judgment and decision making (JDM). Brings together a multi-disciplinary group of contributors from across the social sciences, including psychology, economics, marketing, finance, public policy, sociology, and philosophy Provides accessible, essential information, complete with the latest research and references, for experts and non-experts alike in two volumes Emphasizes the growth of JDM applications with separate chapters devoted to medical decision making, decision making and the law, consumer behavior, and more Addresses controversial topics (such as choice from description vs. choice from experience and contrasts between empirical methodologies employed in behavioral economics and psychology) from multiple perspectives

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Miriam, a freshman Calculus student at Louisiana State University, made 37.5% on her first exam but 83% and 93% on the next two. Matt, a first year General Chemistry student at the University of Utah, scored 65% and 55% on his first two exams and 95% on his third—These are representative of thousands of students who decisively improved their grades by acting on the advice described in this book. What is preventing your students from performing according to expectations? Sandra McGuire offers a simple but profound answer: If you teach students how to learn and give them simple, straightforward strategies to use, they can significantly increase their learning and performance. For over a decade Sandra McGuire has been acclaimed for her presentations and workshops on metacognition and student learning because the tools and strategies she shares have enabled faculty to facilitate dramatic improvements in student learning and success. This book encapsulates the model and ideas she has developed in the past fifteen years, ideas that are being adopted by an increasing number of faculty with considerable effect. The methods she proposes do not require restructuring courses or an inordinate amount of time to teach. They can often be accomplished in a single session, transforming students from memorizers and regurgitators to students who begin to think critically and take responsibility for their own learning. Sandra McGuire takes the reader sequentially through the ideas and strategies that students need to understand and implement. First, she demonstrates how introducing students to metacognition and Bloom's Taxonomy reveals to them the importance of understanding how they learn and provides the lens through which they can view learning activities and measure their intellectual growth. Next, she presents a specific study system that can quickly empower students to maximize their learning. Then, she addresses the importance of dealing with emotion, attitudes, and motivation by suggesting ways to change students' mindsets about ability and by providing a range of strategies to boost motivation and learning; finally, she offers guidance to faculty on partnering with campus learning centers. She pays particular attention to academically unprepared students, noting that the strategies she offers for this particular population are equally beneficial for all students. While stressing that there are many ways to teach effectively, and that readers can be flexible in picking and choosing among the strategies she presents, Sandra McGuire offers the reader a step-by-step process for delivering the key messages of the book to students in as little as 50 minutes. Free online supplements provide three slide sets and a sample video lecture. This book is written primarily for faculty but will be equally useful for TAs, tutors, and learning center professionals. For readers with no background in education or cognitive psychology, the book avoids jargon and esoteric theory. Metacognition plays an important role in numerous aspects of higher educational learning strategies. When properly integrated in the educational system, schools are better equipped to build more efficient and successful learning strategies for students in higher education. *Metacognition and Successful Learning Strategies in Higher Education* is a detailed resource of scholarly perspectives that discusses current trends in learning assessments. Featuring extensive coverage on topics such as spiritual intelligence strategies, literacy development, and ubiquitous learning, this is an ideal reference source for academicians, graduate students, practitioners, and researchers who want to improve their learning strategies using metacognition studies.

Showcasing exemplary research programs, this book explores how the latest theories and findings on cognitive development can be used to improve classroom instruction. The focus is on how children acquire knowledge about the processes involved in learning—such as remembering, thinking, and problem solving—as well as strategies for mastering new information. The contributors are leading experts who illustrate ways teachers can support the development of metacognition and goal-directed strategy use throughout the school years and in different academic domains. Teacher behaviors and instructional methods that promote

these abilities are identified, and innovative assessment approaches and research designs are described.

This report looks at a number of published studies on mathematics education that try to understand which education and skills are appropriate for innovative societies.

Metacognition is the first textbook to focus on people's extraordinary ability to evaluate and control their cognitive processes. This comprehensive text covers both theoretical and empirical metacognitive research in educational, developmental, cognitive and applied psychology. Authors John Dunlosky and Janet Metcalfe address many of the key questions that have inspired scientists to pursue research in this domain. To answer these and many other questions, the authors assess major theoretical themes and programmatic research in the field. The authors also include chapters that define the scope of metacognition and cover its historical origins. Not only do they describe well-received theories about the nature of metacognition, but they also highlight unresolved mysteries currently on the cutting-edge of research. Key Features

Emphasizes the practical relevance of theory and research in metacognition to learning with the use of "Application" boxes Introduces students to important questions that have yet to be answered by the metacognitive research literature with the inclusion of "Mystery" boxes Provides three easy-to-conduct demonstrations (e.g., tip-of-the-tongue experience, delayed-judgment-of-learning effect, etc.) that students can try themselves Offers brief biographies that introduce students to some of the most influential leaders in metacognition Includes a general summary at the end of each chapter Intended Audience This text is an ideal resource for undergraduate cognitive psychology students. It also serves as comprehensive handbook for more advanced students and psychological scientists engaged in the study of metacognitive processes.

This book clarifies the construct of metacognition so that researchers and teachers can develop a better understanding of it. This is an important and broad ranging contribution, which can be drawn upon and applied in many related areas, by researchers, psychologists, teachers and any profession interested in psychological learning processes.

Over the past thirty years, and particularly within the last ten years, researchers in the areas of social psychology, cognitive psychology, clinical psychology, and neuroscience have been examining fascinating questions regarding the nature of imagination and mental simulation – the imagination and generation of alternative realities. Some of these researchers have focused on the specific processes that occur in the brain when an individual is mentally simulating an action or forming a mental image, whereas others have focused on the consequences of mental simulation processes for affect, cognition, motivation, and behavior. This Handbook provides a novel and stimulating integration of work on imagination and mental simulation from a variety of perspectives. It is the first broad-based volume to integrate specific sub-areas such as mental imagery, imagination, thought flow, narrative transportation, fantasizing, and counterfactual thinking, which have, until now, been treated by researchers as disparate and orthogonal lines of inquiry. As such, the volume enlightens psychologists to the notion that a wide-range of mental simulation phenomena may actually share a commonality of underlying processes.

This collection argues that being aware of and reflecting on language form and language use is a powerful tool, not only in language learning, but also in wider society.

It adopts an interdisciplinary stance: one chapter argues the need for Language Awareness in business contexts, while another examines the role of critical cultural awareness and Language Awareness in education as 'bildung'. Others report on research studies in language classrooms and in teacher education. Language Awareness is interrogated from a range of perspectives such as peer interaction, teaching young learners, learner strategies and strategies for writing, online reading, and oral fluency training. The scope is global, including contributions from Canada, Germany, Iran, Japan, Spain, and the UK, and covers bilingual as well as multilingual contexts. The book will be of interest to language teachers, language teacher educators, other language professionals, and generally to the language aware. This book was originally published as a special issue of Language Awareness.

Control processes are those mental functions that allow us to initiate, monitor, and prioritize mental activities. They are crucial to normal mental functioning. A better understanding of the nature of control processes and their deficits is important for clinical work and for an adequate theory of consciousness. Previously, control processes have been examined within the frameworks of two parallel but independent paradigms: those of cognitive psychology and of neuropsychology. Cognitive psychologists have stressed the theoretical and empirical nature of normal unimpaired control processes; neuropsychologists have focused on the relationships between damage to specific functional areas of the brain and deficits in specific control processes. Both have contributed extensively to our understanding of control processes. However, they have tended to operate independently, with little if any cross-talk between disciplines, despite the potential benefits such dialogue is likely to generate. This book represents the first attempt to synthesize cognitive and neuropsychological perspectives on control processes. It contains state-of-the-art reports on various aspects of control processes by experts from both disciplines. Middle adulthood is a critical period of the life course. How we develop in middle age—the central period of our lives—can influence how well we cope in our later years. *Middle Adulthood: A Lifespan Perspective* explores these issues by bringing together a distinguished group of international contributors associated with a range of prestigious longitudinal studies.

*Thinking about Thinking: Metacognition for Music Learning* provides music educators with information, inspiration, and practical suggestions for teaching music. Written for music educators in multiple content areas and grade levels, the book sets forth guidelines for promoting the use of metacognitive skills among music students. Along with presenting an extensive overview of research on the topic, Dr. Benton shows how ideas gleaned from research can be put into daily practice in music classrooms and studios. General music teachers, directors of choral and instrumental ensembles, applied music teachers, future music educators, and music education collegiate faculty will find useful ideas and information here. In the current educational climate where all teachers are required to demonstrate that they encourage higher order thinking among their students, *Thinking about Thinking: Metacognition for Music Learning* gives music educators the tools they need to accomplish the task.

This book is devoted to the Metacognition arena. It highlights works that show relevant analysis, reviews, theoretical, and methodological proposals, as well as studies, approaches, applications, and tools that shape current state, define trends and inspire

future research. As a result of the revision process fourteen manuscripts were accepted and organized into five parts as follows: · **Conceptual:** contains conceptual works oriented to: (1) review models of strategy instruction and tailor a hybrid strategy; (2) unveil second-order judgments and define a method to assess metacognitive judgments; (3) introduces a conceptual model to describe the metacognitive activity as an autopoietic system. · **Framework:** offers three works concerned with: (4) stimulate metacognitive skills and self-regulatory functions; (5) evaluate metacognitive skills and self-regulated learning at problem solving; (6) deal with executive management metacognition and strategic knowledge metacognition. · **Studies:** reports research related to: (7) uncover how metacognitive awareness of listening strategies bias listening proficiency; (8) unveil how metacognitive skills and motivation are achieved in science informal learning; (9) tackle stress at learning by means of coping strategies. · **Approaches:** focus on the following targets: (10) social metacognition to support collaborative problem solving; (11) metacognitive skills to be stimulated in computer supported collaborative learning; (12) metacognitive knowledge and metacognitive experiences are essential for teaching practices. · **Tools:** promotes the use of intelligent tutoring systems such as: (13) BioWorld allows learners to practice medical diagnostic by providing virtual patient cases; (14) MetaHistoReasoning provides examples to learners and inquiries about the causes of historical events. This volume will be a source of interest for researchers, practitioners, professors, and postgraduate students aimed at updating their knowledge and finding targets for future work in the metacognition arena.

This definitive volume is the result of collaboration by top scholars in the field of children's cognition. New edition offers an up-to-date overview of all the major areas of importance in the field, and includes new data from cognitive neuroscience and new chapters on social cognitive development and language Provides state-of-the-art summaries of current research by international specialists in different areas of cognitive development Spans aspects of cognitive development from infancy to the onset of adolescence Includes chapters on symbolic reasoning, pretend play, spatial development, abnormal cognitive development and current theoretical perspectives This reader-friendly text, firmly grounded in listening theories and supported by recent research findings, offers a comprehensive treatment of concepts and knowledge related to teaching second language (L2) listening, with a particular emphasis on metacognition. The metacognitive approach, aimed at developing learner listening in a holistic manner, is unique and groundbreaking. The book is focused on the language learner throughout; all theoretical perspectives, research insights, and pedagogical principles in the book are presented and discussed in relation to the learner. The pedagogical model? a combination of the tried-and-tested sequence of listening lessons and activities that show learners how to activate processes of skilled listeners ? provides teachers with a sound framework for students' L2 listening development to take place inside and outside the classroom. The text includes many practical ideas for listening tasks that have been used successfully in various language learning contexts. This groundbreaking book explains the "whats" and "how-tos" of metacognitive therapy (MCT), an innovative form of cognitive-behavioral therapy with a growing empirical evidence base. MCT developer Adrian Wells shows that much psychological distress results from how a person responds to negative thoughts and beliefs?for example, by

ruminating or worrying? rather than the content of those thoughts. He presents practical techniques and specific protocols for addressing metacognitive processes to effectively treat generalized anxiety disorder, obsessive-compulsive disorder, posttraumatic stress disorder, and major depression. Special features include reproducible treatment plans and assessment and case formulation tools, plus a wealth of illustrative case material. The interdisciplinary field of the learning sciences encompasses educational psychology, cognitive science, computer science, and anthropology, among other disciplines. The Cambridge Handbook of the Learning Sciences is the definitive introduction to this innovative approach to teaching, learning, and educational technology. This dramatically revised second edition incorporates the latest research in the field, includes twenty new chapters on emerging areas of interest, and features contributors who reflect the increasingly international nature of the learning sciences. The authors address the best ways to design educational software, prepare effective teachers, organize classrooms, and use the internet to enhance student learning. They illustrate the importance of creating productive learning environments both inside and outside school, including after-school clubs, libraries, museums, and online learning environments. Accessible and engaging, the Handbook has proven to be an essential resource for graduate students, researchers, teachers, administrators, consultants, educational technology designers, and policy makers on a global scale.

English writing is acknowledged as an essential skill for critical thinking, learning, and expression, and most EFL learners find themselves struggling when writing in English due to a lack of writing skills, content knowledge, writing strategies, intrinsic motivation, and fluency development practice. This edited volume, covering innovative approaches such as e-learning, strategy-based instruction, metacognitive training, a minimal grammar approach, writing assessment, and a genre-based approach, aims to innovate writing instruction in Chinese speaking regions, which has traditionally been characterized by rigid, teacher-centered, test-oriented approaches. We aim for this edited volume to provide theoretical underpinnings as well as contemporary practical advice related to EFL writing instruction for Chinese speakers.

### Publisher Description

There is a growing theoretical and practical interest in the topic of metacognition: how mental processes are monitored and controlled. This study overviews the relationship between theories in metacognition and their real-world applications. In addition to a theoretical overview, chapters cover metacognition in three areas: education, everyday life memory and in diverse populations.

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Unique and stimulating, this book addresses metacognition in both the neglected area of teaching and the more well-established area of learning. It addresses domain-general and domain-specific aspects of metacognition, including applications to the particular subjects of reading, speaking, mathematics, and science. This collection spans theory, research and practice related to metacognition in education at all school levels, from elementary through university.

Deficits in social cognition and metacognition in schizophrenics makes it difficult for them to understand the speech, facial expressions and hence emotion and intention of others, as well as allowing little insight into their own mental state. These deficits are associated with poor social skills, fewer social relationships, and are predictive of poorer performance in a work

setting. *Social Cognition and Metacognition in Schizophrenia* reviews recent research advances focusing on the precise nature of these deficits, when and how they manifest themselves, what their effect is on the course of schizophrenia, and how each can be treated. These deficits may themselves be why schizophrenia is so difficult to resolve; by focusing on the deficits, recovery may be quicker and long lasting. This book discusses such deficits in early onset, first episode, and prolonged schizophrenia; how the deficits relate to each other and to other forms of psychopathology; how the deficits affect social, psychological, and vocational functioning; and how best to treat the deficits in either individual or group settings. Summarizes the types of social cognitive and metacognitive deficits present in schizophrenia Discusses how deficits are related to each other and to other forms of psychopathology Describes how deficits impact function and affect the recovery process Provides treatment approaches for these deficits

*Trends and Prospects in Metacognition* presents a collection of chapters dealing principally with independent areas of empirical Metacognition research. These research foci, such as animal metacognition, neuropsychology of metacognition, implicit learning, metacognitive experiences, metamemory, young children's Metacognition, theory of mind, metacognitive knowledge, decision making, and interventions for the enhancement of metacognition, have all emerged as trends in the field of metacognition. Yet, the resulting research has not converged, precluding an integration of concepts and findings. Presenting a new theoretical framework, *Trends and Prospects in Metacognition* extends the classical definitions offered by Flavell and Nelson to carry the prospect of more integrated work into the future. By opening the possibility to cross the boundaries posed by traditionally independent research areas, this volume provides a foundation for the integration of research paradigms and concepts and builds on the relationship between metacognition and consciousness, while integrating basic with applied research.

Research has identified the importance of helping students develop the ability to monitor their own comprehension and to make their thinking processes explicit, and indeed demonstrates that metacognitive teaching strategies greatly improve student engagement with course material. This book -- by presenting principles that teachers in higher education can put into practice in their own classrooms -- explains how to lay the ground for this engagement, and help students become self-regulated learners actively employing metacognitive and reflective strategies in their education. Key elements include embedding metacognitive instruction in the content matter; being explicit about the usefulness of metacognitive activities to provide the incentive for students to commit to the extra effort; as well as following through consistently. Recognizing that few teachers have a deep understanding of metacognition and how it functions, and still fewer have developed methods for integrating it into their curriculum, this book offers a hands-on, user-friendly guide for implementing metacognitive and reflective pedagogy in a range of disciplines. Offering seven practitioner examples from the sciences, technology, engineering and mathematics (STEM) fields, the social sciences and the humanities, along with sample syllabi, course materials, and student examples, this volume offers a range of strategies for incorporating these pedagogical approaches in college classrooms, as well as theoretical rationales for the strategies presented. By providing successful models from courses in a broad spectrum of disciplines, the editors and contributors reassure readers that they need not reinvent the wheel or fear the unknown, but can instead adapt tested interventions that aid learning and have been shown to improve both instructor and student satisfaction and engagement.

*The Oxford Handbook of Metamemory* investigates the human ability to evaluate and control learning and information retrieval processes. Each chapter in this authoritative guide highlights a different facet of metamemory research, including classical metamemory judgments; applications of metamemory research to the classroom and courtroom; and cutting-edge

perspectives on continuing debates and theory. Chapters also provide broad historical overviews of each research area and discussions of promising directions for future research. The breadth and depth of coverage on offer in this Handbook make it ideal for seminars on metamemory or metacognition. It would also be a valuable supplement for advanced courses on cognitive psychology, of use especially to graduate students and more seasoned researchers who are interested in exploring metamemory for the first time.

Over the past thirty years, the field of language learning strategies has generated a massive amount of interest and research in applied linguistics. *Teaching and Researching Language Learning Strategies* redraws the landscape of language learning strategies at just the right time. In this book Rebecca Oxford charts the field systematically and coherently for the benefit of language learning practitioners, students, and researchers. Offering practical, innovative suggestions for assessing, teaching, and researching language learning strategies, she provides examples of strategies and tactics from all levels, from beginners to distinguished-level learners, as well as a new taxonomy of strategies for language learning. In demonstrating why self-regulated learning strategies are necessary for language proficiency, Oxford integrates socio-cultural, cognitive, and affective dimensions, and argues convincingly for the need for conceptual cross-fertilization. Providing clear and concise explanations of the advantages and limitations of the different approaches, this book is full of practical value and theoretical insights. The book is designed to guide the reader with the use of a range of features, including: - key quotes and concept boxes - preview questions and chapter overviews - glossary and end-of-chapter further readings - sources and resources section

The earliest educational software simply transferred print material from the page to the monitor. Since then, the Internet and other digital media have brought students an ever-expanding, low-cost knowledge base and the opportunity to interact with minds around the globe—while running the risk of shortening their attention spans, isolating them from interpersonal contact, and subjecting them to information overload. *The New Science of Learning: Cognition, Computers and Collaboration in Education* deftly explores the multiple relationships found among these critical elements in students' increasingly complex and multi-paced educational experience. Starting with instructors' insights into the cognitive effects of digital media—a diverse range of viewpoints with little consensus—this cutting-edge resource acknowledges the double-edged potential inherent in computer-based education and its role in shaping students' thinking capabilities. Accordingly, the emphasis is on strategies that maximize the strengths and compensate for the negative aspects of digital learning, including: Group cognition as a foundation for learning Metacognitive control of learning and remembering Higher education course development using open education resources Designing a technology-oriented teacher professional development model Supporting student collaboration with digital video tools Teaching and learning through social annotation practices *The New Science of Learning: Cognition, Computers and Collaboration in Education* brings emerging challenges and innovative ideas into sharp focus for researchers in educational psychology, instructional design, education technologies, and the learning sciences.

Providing comprehensive coverage of the theoretical bases of metacognition and its applications to educational practice, this compendium of focused and in-depth discussions from leading scholars in the field: represents an intersection of education, cognitive science, and technology; serves as a gateway to the literature for researchers and practitioners interested in one or more of the wide array of topics included; and sets the standard for scholarship for theoretical research and practical applications in this field. *The Handbook of Metacognition in Education — covering Comprehension Strategies, Metacognitive Strategies, Metacomprehension, Writing, Science and Mathematics, Individual Differences, Self-Regulated Learning, Technology, Tutoring, and Measurement —* is an essential resource for researchers, faculty, students, curriculum developers, teachers, and others interested in using research and

theory on metacognition to guide and inform educational practice.

For centuries, learning emphasized memorizing information: You were supposed to study facts, dates, and details, and burn them into your consciousness. But this approach to learning is outdated and contrary to how our brains really work. In *Learn Better*, writer and education researcher Ulrich Boser maps out the new science of learning, demonstrating how we can gain expertise in dramatically better ways. In this entertaining and engrossing book, Boser argues that learning is a skill, showing how techniques like self-questioning and thinking about thinking can create much deeper levels of understanding. Among the important findings and practical tips, Boser tells fascinating stories, like how Jackson Pollock came to his revolutionary drip painting method--and why an ancient counting device helps people gain superhuman math skills. This powerful book will revolutionize the way that you acquire mastery, with far-reaching implications for both you and society. But perhaps most importantly, you will be able to fully capitalize on your mind's remarkable ability to develop new skills.

Metacognition refers to the awareness an individual has of their own mental processes. In the past thirty years metacognition research has become a rapidly growing field of interdisciplinary research within the cognitive sciences. This book brings together leading cognitive scientists to consider some of the key questions regarding this phenomenon.

Does metacognition, i.e. the capacity to form epistemic self-evaluations about one's current cognitive performance, derive from a mindreading capacity, or does it rely, at least in part, on sui generis informational processes? In *The Philosophy of Metacognition* Joëlle Proust provides a powerful defense of the second position. Drawing on discussions of empirical evidence from comparative, developmental, and experimental psychology, as well as from neuroscience, and on conceptual analyses, she purports to show that, in contrast with analytic metacognition, procedural metacognition does not need to involve metarepresentations.

Procedural metacognition seems to be available to some non-humans (some primates and rodents). Proust further claims that metacognition is essentially related to mental agency, i.e. cognitive control and monitoring. 'Self-probing' is equivalent to a self-addressed question about the feasibility of a mental action ('Am I able to remember this word?'). 'Post-evaluating' is a way of asking oneself whether a given mental action has been successfully completed ('Is this word the one I was looking for?'). Neither question need be articulated conceptually for a feeling of knowing or of being right to be generated, or to drive epistemic control. Various issues raised by the contrast of a procedural, experience-based metacognition, with an analytic, concept-based metacognition are explored, such as whether each is expressed in a different representational format, their sensitivity to different epistemic norms, and the existence of a variety of types of epistemic acceptance.

Why is metacognition gaining recognition, both in education generally and in science learning in particular? What does metacognition contribute to the theory and practice of science learning? *Metacognition in Science Education* discusses emerging topics at the intersection of metacognition with the teaching and learning of science concepts, and with higher order thinking more generally. The book provides readers with a background on metacognition and analyses the latest developments in the field. It also gives an account of best-practice methodology. Expanding on the theoretical underpinnings of metacognition, and written by world leaders in metacognitive research, the chapters present cutting-edge studies on how various forms of metacognitive instruction enhance understanding and thinking in science classrooms. The editors strive for conceptual coherency in the various definitions of metacognition that appear in the book, and show that the study of metacognition is not an end in itself. Rather, it is integral to other important constructs, such as self-regulation, literacy, the teaching of thinking strategies, motivation, meta-strategies, conceptual understanding, reflection, and critical thinking. The book testifies to a growing recognition of the potential value of metacognition to science learning. It will motivate science educators in different educational

contexts to incorporate this topic into their ongoing research and practice.

This Handbook examines the interplay between metamemory and memory. Each contributor discusses cutting-edge theory and research that, in some way, showcases the symbiotic relationship between metamemory and memory. Together, these chapters support a central thesis, which is that a complete understanding of either metamemory or memory is not possible without understanding their mutual influence. The inspiration for this volume was the life and research of Thomas O. Nelson, whose pioneering and influential research in the fields of metamemory and memory consistently highlighted their integrated nature.

The Cambridge Handbook of Consciousness is the first of its kind in the field, and its appearance marks a unique time in the history of intellectual inquiry on the topic. After decades during which consciousness was considered beyond the scope of legitimate scientific investigation, consciousness re-emerged as a popular focus of research towards the end of the last century, and it has remained so for nearly 20 years. There are now so many different lines of investigation on consciousness that the time has come when the field may finally benefit from a book that pulls them together and, by juxtaposing them, provides a comprehensive survey of this exciting field. An authoritative desk reference, which will also be suitable as an advanced textbook.

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