

First Canadian Edition



# PSYCHOLOGY

A Modular Approach

John O. Mitterer

Dennis Coon

Tanya Martini

# Psychology

A MODULAR APPROACH

First Canadian Edition

**John O. Mitterer**

Brock University

**Dennis Coon**

**Tanya Martini**

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by John O. Mitterer, Dennis Coon, and  
Tanya Martini

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For my parents, Anne and Orlando  
—T.M.

## About the Authors

**John Mitterer** was awarded his PhD in cognitive psychology from McMaster University. Currently, Dr. Mitterer is faculty member at Brock University, where he has taught nearly 30,000 introductory psychology students. He is the recipient of the 2003 Brock University Distinguished Teaching Award, a 2003 Ontario Confederation of University Faculty Associations (OCUFA) Teaching Award, a 2004 National 3M Teaching Fellowship, the 2005 Canadian Psychological Association Award for Distinguished Contributions to Education and Training in Psychology, and the 2010 Brock University Don Ursino Award for Excellence in the Teaching of Large Classes. He also held a three-year Brock Chancellor’s Chair for Teaching Excellence from 2006 to 2009.

His first love is in applying cognitive principles to the improvement of undergraduate education. In support of his introductory psychology course, he has been involved in the creation of textbooks and ancillary materials such as digital products for both students and instructors. Dr. Mitterer has published and lectured on undergraduate instruction throughout Canada and the United States.

In his spare time, Dr. Mitterer strives to become a better golfer and to attain his life goal of seeing all the bird species in the world. To this end, he travels to birding “hot spots” like Papua New Guinea, Uganda, the Galapagos, Brazil, and China.



John Mitterer

John O. Mitterer

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In his leisure hours, Dr. Coon enjoys hiking, photography, painting, woodworking, and music. He also designs, builds, and plays classical and steel-string acoustic guitars. He has published articles on guitar design and occasionally offers lectures on this topic, in addition to his more frequent presentations on psychology.



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Dr. Martini’s research explores skill-based learning outcomes in postsecondary education, and her most recent work has investigated students’ views concerning skill-based learning across their degree program. She has a particular interest in students’ ability to articulate the competencies that underlie skills such as critical thinking and collaboration, and their ability to recognize how university assignments foster transferable skills that are of interest to employers.



Tanya Martini

Tanya Martini

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# Preface

## To You, the Student—An Invitation to Learn Psychology

Greetings from your authors! We look forward to being your guides as you explore the exciting field of psychology and our ever-evolving understanding of human behaviour. In a very real sense, we wrote this book about you, for you, and to you. We sincerely hope you will find, as we do, that what you learn is at once familiar, exotic, surprising, and challenging.

### Reading *Psychology*

In *Psychology: A Modular Approach*, First Canadian Edition, we have done all we could imagine to make it enjoyable for you to read this book. We trust you will find your first journey through psychology to be quite interesting and useful to you in your everyday life. Each module takes you into a different realm of psychology, such as personality, abnormal behaviour, memory, consciousness, and human development. Each realm is complex and fascinating in its own right, with many pathways, landmarks, and interesting detours to discover. Like any journey of discovery, your exploration of psychology will help you better understand yourself, others, and the world around you. It's definitely a trip worth taking.

### Studying Psychology

None of us likes to start a new adventure by reading a manual. We want to step off the airplane and begin our vacation, get right into that new computer game, or just start using our new camera or smartphone. You might be similarly tempted to just start reading this textbook. Please be patient. Successfully learning psychology depends on how you study this book as well as how you read it.

*Psychology: A Modular Approach* is your passport to an adventure in active learning, not just passive reading. To help you get off to a good start, the opening module of this book is our short “manual,” *Module 1: How to Study Psychology*. In it, we describe a variety of study skills, including the *reflective SQ4R* method that you can use to get the most out of this book, your psychology course, and your other courses as well. Module 1 of the Canadian edition goes further, though, and challenges you to think about how your psychology course

will help you develop career-related skills such as critical thinking that are important well beyond a college or university classroom.

## To You, the Instructor—An Invitation to Teach Psychology

Thank you for choosing *Psychology: A Modular Approach* for your students and for your course. Marcel Proust wrote, “The real voyage of discovery consists not in seeing new landscapes but in having new eyes.” It is in this spirit that we have written this book to promote not only an interest in human behaviour but also an appreciation for the perspective of the psychologist.

As we point out to your students in *Module 1: How to Study Psychology*, there is a big difference between experiencing and reflecting on experience (Norman, 1994). For John Dewey (1910), reflective thinking is the “active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusion to which it tends.” The psychologist’s perspective, of course, involves reflecting on human behaviour in a variety of ways. When it comes to studying psychology, reflective cognition requires actively thinking about what you have just read, which results in deeper understanding and memory. Please consider taking a look at *Module 1* because it explains to your students in some detail how to become a more reflective student and outlines how they can get the most out of this book. We encourage you, if at all possible, to assign your students to read it as well.

Throughout this book, we have tried to select only the best material from the many topics that could be presented. Nevertheless, *Psychology* covers not only the heart of psychology but also many topics at the cutting edge of current knowledge, including a focus on the practical applications of psychology, the growing importance of neuroscience, and the richness of human diversity. New information, anecdotes, perspectives, and narratives appear throughout this first Canadian edition. The result is a concise book that is readable, informative, and motivating. At the same time, we have structured this book to help students consolidate the skills to learn



efficiently and to become better critical thinkers. Without such skills, students cannot easily go, as Jerome Bruner (1973) put it, “beyond the information given.”

## The Teaching Challenge

Wouldn't it be nice if all of our students came to our courses highly motivated to explore psychology and well prepared to cope with the learning challenges we create for them? As the authors of this textbook, we have together accumulated some 75 years of classroom experience teaching tens of thousands of college and university students. Although we have found most students to be generally well intentioned, our modern world certainly does immerse them in their work, careers, families, intimate relationships, popular culture, and life in general. As we compete for ever-more-limited student attention, we must do more than just lecture in class. We also must motivate our students to learn and educate them about how to learn effectively (Matthew & Sternberg, 2009; Paternoster & Pogarsky, 2009).

We have explicitly designed and written the first Canadian edition of *Psychology: A Modular Approach* to foster deeper student engagement with the field of psychology, better memory for what has been read and studied, and a deeper understanding of how to become more reflective learners and thinkers. To help you and your students reach these goals, we have organized our design philosophy around four core principles:

### 1. Flexible Modular Organization

Over the years, many instructors have asked us for a textbook that can be used more flexibly. This book is our response to that request. First and foremost, *Psychology* is a complete first course in psychology. Whether you prefer shorter, more concise self-contained modules, or are comfortable with a traditional chapter-by-chapter organization, *Psychology* will work for you. It is organized into 16 major module clusters (think of them as *chapters*), to allow you flexibility in assigning topics for your course. Because each module is written to be more self-contained than an equivalent chapter section, you will find it easier to omit modules and/or to reorder the sequencing of modules (and hence module clusters). Of course, if you intend to have your students read all of a module cluster in order, the modules making up each cluster nevertheless flow just as well as a more traditional chapter's section-by-section format.

Each module in *Psychology* concludes with a summary and a feature called a *Knowledge Builder*. These “mini-study guides” challenge students to quiz themselves, relate concepts to their own experiences, and to think critically about the principles they are learning. If students would like more feedback and practice, an integrated MindTap CourseMode is available at [www.nelson.com/instructor](http://www.nelson.com/instructor). To learn more about MindTap, please see the supplements section of this preface.

### 2. Readability and Narrative Emphasis

Many introductory psychology students are reluctant readers. Selecting a textbook is half the battle in teaching a successful course. A good textbook does much of the work of imparting information to your students, freeing class time for discussion, extra topics, or media presentations. It also leaves students asking for more. When a book overwhelms students or cools their interest, teaching and learning suffer. If students won't read the textbook, they can't very well be reflective about what they have read.

For this reason, we've worked hard to make this a clear, readable, and engaging text. It is designed to give students a clear grasp of major concepts without burying them in details. At the same time, it offers a broad overview that reflects psychology's rich heritage of ideas. We think students will find this book informative and intellectually stimulating.

Because we want students to read this book with genuine interest and enthusiasm, not merely as an obligation, we have made a special effort to weave narrative threads through the book. Everyone loves a good story, and the story of psychology is among the most compelling to be told. Throughout *Psychology*, we have used compelling anecdotes and examples to propel reading and sustain interest.

**Practical Applications** To make psychology even more inviting to students, we have emphasized in many of the modules how the discipline relates to practical problems in daily life. In addition, a major feature of this book is the *Psychology in Action* modules that are located at the end of each module cluster. These high-interest discussions bridge the gap between theory and practical applications. We believe it is fair for students to ask, “Does this mean anything to me? Can I use it? Why should I learn it if I can't?” The *Psychology in Action* modules show students how to solve practical problems and manage their own behaviour. This allows them to see the benefits of adopting new ideas, and it breathes life into psychology's concepts.

### 3. Integrated Support for Active Learning

Studying, rather than reading, a textbook requires the active cognitive engagement that psychologist Donald Norman (1993) calls *reflective*. In his recent book, *Thinking, Fast and Slow*, Daniel Kahneman draws on the work of Canadian psychologist Keith Stanovich and describes it as *System 2* thinking (Kahneman, 2011). Being reflective when you read a textbook involves asking yourself if you understand what you are reading, how it might relate to things you already know, what new questions your reading might trigger, and so on. The resulting elaboration of the just-read new information is, perhaps, the best way to foster understanding and form lasting memories (Anderson, 2010; Gadzella, 1995; Goldstein, 2011).

It is in this spirit that we have again improved the design of this edition of *Psychology* to encourage students to become more reflective, active learners. To achieve this important pedagogical goal, the traditional SQ4R method has again been updated to *reflective SQ4R*, an active-learning format, to make studying psychology an even more rewarding experience. As students explore concepts, they are encouraged to think critically about ideas and relate them to their own experiences. Notice how the steps of the reflective SQ4R method—*survey, question, read, recite, reflect, and review*—are incorporated into the modular design:

**Survey** Features at the beginning of each module help students build cognitive maps of upcoming topics, thus serving as advance organizers (Ausubel, 1978; Gurlitt et al., 2012). A photograph and short preview arouses interest, gives an overview of the module, and focuses attention on the task at hand. A list of *Survey Questions* also is given as a guide to active reading. These questions are now numbered, making it easier for students and instructors to relate the *Survey Questions* to a matched set of learning objectives that appear throughout the materials that accompany this textbook.

The answers to *Survey Questions* open intellectual pathways and summarize psychology’s “big ideas.” Ultimately, those answers provide a good summary of what students have learned. With these module-opening features, we invite students to read with a purpose and actively process information.

**Question** *How can questioning be built into a textbook?* Italicized *dialogue questions*, such as the previous sentence, are the sorts of questions students might find themselves thinking as they begin reading a section of text. As such, they

model a dialogue in which the questions and the reactions of students are anticipated—that is, *dialogue questions* prompt students to look for important ideas as they read, thus promoting active learning while serving as advance organizers. They also clarify difficult points in a lively give-and-take between questions and responses.

Further, as noted earlier, each major module section begins with one or more *Survey Questions*. As students read a module, they can try to discover the answers to these questions. They can then compare their answers with the ones listed in the module summary.

**Read** We’ve made every effort to make this a clear, readable text. To further aid comprehension, we’ve used a full array of traditional learning aids. These include boldface terms, bulleted and numbered summaries, robust illustrations, summary tables, a name index, and an integrated subject index and glossary. As an additional aid, figure and table references in the text are set apart by different coloured text and small geometric shapes. These “placeholders” make it easier for students to return to the section they were reading after they have paused to view a table or figure.

We have made the glossary function as powerful as possible. The main *Glossary* at the end of the book is integrated with the *Subject Index*, making it easy to link important definitions to where they are discussed in the text. As in earlier editions, all glossary items are bold and defined in-text when the term is first encountered. This aids reading comprehension because students get clear definitions when and where they need them—in the general text itself. In addition, the parallel *running glossary* defines key terms in the margins of the relevant pages, making it easy for students to find, study, and review important terms.

**Recite** A *Knowledge Builder* at the end of each module gives students a chance to test their recall and further develop their understanding of preceding topics. Each *Knowledge Builder* includes a *Recite* section, a short, noncomprehensive quiz, to help students actively process information and assess their progress. *Recite* questions, which are not as difficult as in-class tests, are meant to offer a sample of what students could be asked about various topics. Students who miss any items are encouraged to back-track and clarify their understanding before reading more. In other words, completing *Recite* questions serves as a form of recitation to enhance learning.

**Reflect** Simple recitation is usually not enough to foster deeper understanding, so in each module we invite students to

engage in two distinct types of reflection: self-reflection and critical thinking:

- **Self-Reflection** Self-reflection (or self-reference) makes new information more meaningful by relating it to what is already known (Klein & Kihlstrom, 1986). We provide many opportunities for self-reflection throughout *Psychology*. The text is written with many contemporary references, examples, and stories to make it easier for students to relate what they are reading to their own life experience. As we mentioned previously, every few modules, we have placed a *Psychology in Action* module that invites students to relate psychology to practical problems in their daily lives. In addition, *Discovering Psychology* boxes in many chapters are “try-it” demonstrations that enable students to observe interesting facets of their own behaviour or do self-assessment exercises. In this way, students are given yet another way to link new information to concrete experiences. Finally, to help students further elaborate their new understanding, each *Knowledge Builder* includes a series of *Self-Reflect* questions that encourage students to connect new concepts with personal experiences and prior knowledge.
- **Critical Thinking** Being reflective about psychology involves more than self-reflectively asking “What does this have to do with me and what I already know?” It also involves reflecting more deeply about the field. Our book also invites students to think critically about psychology. The active, questioning nature of the reflective SQ4R method is, in itself, an inducement to critical thinking. In addition, every *Knowledge Builder* includes *Think Critically* questions. These stimulating questions challenge students to think critically and analytically about psychology. Each is followed by a brief answer with which students can compare their own thoughts. Many of these answers are based on research and are informative in their own right. Many of the *dialogue questions* that introduce topics in the text also act as models of critical thinking.

*Module 2* explicitly discusses critical thinking skills and offers a rational appraisal of pseudo-psychologies. In addition, the discussion of research methods in *Modules 4* and *5* is actually a short course on how to think clearly about behaviour. These methodology modules are augmented by *Module 6*, a *Psychology in Action* module, which offers suggestions about how to critically evaluate claims in the popular media. *Modules 37–41*, which cover cognition, language, creativity, and intelligence, also include many topics related to critical thinking.

Throughout the book, many boxed highlights promote critical thinking about specific topics that students should approach with healthy skepticism. The *Critical Thinking* boxes

model a reflective approach to the theoretical and empirical foundations of critical thinking in psychology. In addition, *Human Diversity* boxes encourage reflection on the variability of the human experience, *Clinical File* boxes encourage reflection on the clinical applications of psychology, and *Brainwaves* boxes foster deeper insight into the brain structures and processes that underlie psychological phenomena. Taken together, these features will help students think more reflectively about your course and the field of psychology while they also gain thinking skills of lasting value.

**Review** As we noted previously, all important terms appear in a *running glossary* throughout the book, which aids review. In addition, the main *Glossary* is integrated with the *Subject Index*. When reviewing, students can easily link definitions of concepts with the appropriate section of the book where those concepts are introduced and discussed.

As also noted, periodic *Psychology in Action* modules show students how psychological concepts relate to practical problems, including problems in their own lives. The information found in *Psychology in Action* modules helps reinforce learning by enlisting self-reference while illustrating psychology’s practicality.

To help students further consolidate their learning, each module ends with a *Summary* restating all of the major ideas presented earlier in the module and organized around the same *Survey Questions* found at the beginning of, and throughout, the module. In this way, we bring the reflective SQ4R process full circle and reinforce the learning objectives for the module.

## 4. Integrative Themes: The Whole Person

No one linear module organization can fully capture the interconnectedness of our field. But to better convey this richness, we also explore the natural complexity of psychology by weaving several more-detailed themes throughout the modules of *Psychology*.

One theme is that of *positive psychology*. Over the last decade or two, increasing interest in positive psychology has begun to complement the focus of the previous 120 years on the negative side of human behaviour. What do we know, for instance, about love, happiness, creativity, well-being, self-confidence, and achievement? Throughout this book, we have attempted to answer such questions for students, often in periodic, short



integrative sections entitled *The Whole Person*. Our hope is that students who read this book will gain an appreciation for the potential we all have for optimal functioning. Also, of course, we hope that they will leave Introductory Psychology with emotional and intellectual tools they can use to enhance their lives.

Starting in *Module 3*, we expand on the notion that human behaviour is better understood when examined from three complementary perspectives, the biological, the psychological, and the sociocultural, again often in *The Whole Person* summaries. You may choose to explicitly present these perspectives to your students. Alternatively, you might leave these for your students to explore independently.

**The Biological Perspective: The Growing Importance of Neuroscience** Partly because of the popular media, our students are increasingly aware that the brain and the nervous system play a role in shaping human behaviour. While the *Brain and Behaviour* modules (*Modules 7–11*) deal with the usual topics such as methods of studying the brain, neural functioning, synaptic transmission, the structure of the nervous system and brain, and the endocrine system, we deliberately include a discussion of the biological perspective in many of the other modules of this book. One way we do this is to incorporate a *Brainwaves* box into some of those modules. ● **Table I.1** gives a module-by-module list of topics that are discussed from the biological perspective.

**The Psychological Perspective: The Centrality of Self-Knowledge** We have threaded the psychological perspective throughout this book in many ways. It is, of course, central to psychology. In *Psychology*, we continue to place special thematic emphasis on the self. In doing so, we respond to Timothy Wilson’s (2009) criticism that introductory psychology courses do not spend enough time exploring the issue of self-knowledge, despite the fact that students are terribly interested in learning more about themselves. And as you may have already noted, our focus on active, reflective learning also is designed to improve our students’ self-awareness. Table I.1 gives a module-by-module list of the relevant discussions.

**The Sociocultural Perspective: Human Diversity, Culture, and Gender** Of course, no introductory psychology textbook would be complete without a discussion of human diversity and the multicultural, multifaceted nature of contemporary society. In *Psychology*, students will find numerous discussions of human diversity, including differences in race, ethnicity, culture, gender, abilities, sexual orientation, and age. Too

often, such differences needlessly divide people into opposing groups. Our aim throughout this book is to discourage stereotyping, prejudice, discrimination, and intolerance. We’ve tried to make the book gender neutral and sensitive to diversity issues. All pronouns and examples involving females and males are equally divided by gender. In artwork, photographs, and examples, we have tried to portray the rich diversity of humanity. In addition, a boxed feature, *Human Diversity*, appears throughout the book, providing students with examples of how to be more reflective about human diversity.

In short, many topics and examples in this book encourage students to appreciate social, physical, and cultural differences and to accept them as a natural part of being human. Table I.1 also gives a module-by-module list of discussions of issues of human diversity, culture, and gender.

## Psychology: A Modular Approach— What’s New in the First Canadian Edition?

Three main goals were addressed in adapting *Psychology* for a Canadian audience. First and foremost, this book was intended to showcase the excellent research that is being published by Canadian psychologists. Second, wherever possible, Canadian examples are provided to illustrate key concepts and Canadian statistics are highlighted. Finally, Canadian legislation and legal rulings (including, for example, Supreme Court of Canada decisions) are woven throughout this text to highlight the intersection of psychological concepts and broader public policy. In an effort to ensure that the book is as current as possible, political debates that were ongoing or unresolved at the time of writing (e.g., euthanasia and prostitution) have been included in the first Canadian edition. We encourage instructors to “finish the story” in those instances where resolution has come after publication.

## Module 1: How to Study Psychology

Highlights include:

- information about effective reading, studying, note taking, test preparation and performance
- the SQ4R-derived framework (reflective SQ4R)
- the learning outcomes documented in the *APA Guidelines for the Undergraduate Major 2.0*, in an effort to make clear how the study of psychology can help to foster important career-relevant transferable skills as well as an understanding of disciplinary content

- information about psychology-related careers, in an effort to demonstrate the broad applicability of the discipline and the transferable skills that are promoted through its study

## Modules 2–6: Introducing Psychology

- Canadian research is used to highlight:
  - the importance of critical thinking and the need for empirical data
  - steps in the scientific method
  - the use of animal models in psychology
  - the limitations of data gathered using nonrepresentative samples
- Other Canadian content includes:
  - Guidelines concerning research ethics from the Canadian Psychological Association, and the Tri-Council Policy Statement (second edition)
  - important Canadian figures in the history of psychology
  - provincial and territorial regulations on practising as a psychologist

## Modules 7–11: Brain and Behaviour

- Canadian research highlights include studies related to:
  - Wilder Penfield’s pioneering work on direct brain stimulation
  - the use of fMRI to investigate pathological gambling
  - the role of mirror neurons in social relationships
  - communication with patients in a vegetative state
  - the effects of oxytocin on behaviour
  - neurogenesis in injured Canadian war veterans

## Modules 12–16: Human Development

- Canadian research highlights include studies related to:
  - visual perception in infants and young children
  - the development of language, including the effects of shared book reading with children
  - parenting and attachment, including the effects of daycare on attachment
  - theory of mind in young children, and its relevance in social relationships
  - developmental changes in reasoning about moral and social conventional issues
  - identity and emerging adulthood
  - aging stereotypes
  - subjective well-being

## Modules 17–22: Sensation and Perception

- Canadian research highlights include studies related to:
  - echolocation used by blind individuals
  - the use of auditory cues in video games to help blind people learn to navigate unfamiliar spaces
  - face perception, including the cross-race effect
  - the use of prior experience to filter auditory information in social settings
  - eyewitness testimony in the courtroom
- Canadian cultural and public policy highlights include:
  - Supreme Court of Canada ruling on eyewitness testimony

## Modules 23–26: Consciousness

- Canadian research highlights include studies related to:
  - sleeping disorders
  - the use of stimulants/cognitive enhancers as “study drugs”
- Canadian cultural and public policy highlights include:
  - changes to the Criminal Code of Canada regarding illicit drugs
  - the use of safe injection sites such as Insite in Vancouver
  - ongoing debate over the legalization of marijuana
  - Canadian universities’ response to binge drinking among undergraduates

## Modules 27–31: Conditioning and Learning

- Canadian research highlights include studies related to:
  - the effects of violent video games and violent media
  - the use of marijuana-based compounds in treating cancer patients
- Canadian cultural and public policy highlights include:
  - Learning principles in relation to Canadian environmental issues (BC carbon tax; government rebates for energy-efficient appliances)
  - Controversy over Canadian adoption of discovery learning to teach elementary school children math
  - Supreme Court of Canada ruling on Section 43 of the Criminal Code (spanking) and the more recent call from the Canadian Medical Association to ban spanking

**TABLE I.1** A Modular Approach

Modules	Neuroscience in Psychology	Self-Knowledge in Psychology
<b>Modules 2–6: Introducing Psychology</b>	Neuroscience and biopsychology, the biological perspective, EEG and dreaming, links between brain and behaviour, Phineas Gage and case studies	Importance of self-knowledge, ethical research, psychological perspective, self-actualization, testing common sense, critical thinking, personal freedom, scientific thinking, introspection, behaviourism, humanism, eclecticism
<b>Modules 7–11 Brain and Behaviour</b>	Neural function, synaptic transmission, neurotransmitters, parts of nervous system and brain, localization of function, methods of studying the brain, endocrine system, handedness	Brain and self, localization of function, including self, self-directed neuroplasticity, locked-in syndrome, truth and lies, intelligence, frontal lobes, strokes and self, split-brain operation, hemispheres and self, mirror neurons, thinking styles, emotions, turn-taking in language development
<b>Modules 12–16: Human Development</b>	Biological factors in development, readiness, maturation, prenatal biological influences, sensitive periods, reaction range, biological predisposition to language, cognitive stages and brain maturation, puberty	Temperament, newborn sensitivity, imitation, attachment, terrible twos, egocentrism, theory of minds, self-awareness, self-recognition, search for identity, moral development, role confusion, self-acceptance, personal growth, self-esteem
<b>Modules 17–22: Sensation and Perception</b>	Sensory filtering, transduction, sensory localization in the brain, electrical stimulation of sensory experiences in the brain and sensory nerves, physiology of various sense receptors and sensory pathways, sensory gating, neuromatrix theory, perceptual construction and learning	Perceptual experiences, psychophysics, reality testing, perceptual awareness, perceptual learning, perceptual habits and top-down processing
<b>Modules 23–26: Consciousness</b>	EEG, stages of sleep, REM and dreaming, biological theories of sleep and dreaming, effects of “sleeping pills,” narcolepsy, EEG and hypnosis, brain scans and meditation, how psychoactive drugs affect the brain and neurotransmitters, drug addiction	Consciousness, self-awareness and heightened self-awareness, self-control under hypnosis, autosuggestion, self-control, mindfulness, analyzing dreams, lucid dreaming
<b>Modules 27–31: Conditioning and Learning</b>	Eyeblick conditioning, the brain, and diagnosis of autism and minimal consciousness, conditioned emotional reactions and the amygdala, primary reinforcement and intracranial self-stimulation	Self-managed behaviour
<b>Modules 32–36: Memory</b>	Amnesia and types of memory, cerebellum and procedural memory, brain trauma and amnesia, consolidation, long-term potentiation, role of hippocampus in declarative memories, limbic and flashbulb memories, cortex and long-term memory	Episodic memory, elaborative encoding, self-reference and memory
<b>Modules 37–41: Cognition and Intelligence</b>	Lou Gehrig’s disease and intelligence, imagery and the brain, organic causes of mental disability, heredity and intelligence	Imagery, kinesthetic images, cognitive effects of bilingualism, insight, intuition, creativity, giftedness, multiple intelligences, wisdom



Human Diversity and Culture in Psychology	Gender in Psychology
Cultural psychology, human diversity, appreciating social and cultural differences, the impact of culture, cultural relativity, a broader view of diversity, human diversity and representative samples	The psychology of gender, gender differences in communication, women in psychology, unbiased sampling in research, gender and social norms
Biological treatments for people with spinal injuries, hypopituitary dwarfism, acromegaly, handedness and laterality, brain interfaces for people with total paralysis, diagnosis of neurological conditions, cultural experiences shape the brain, handedness and culture	Men’s and women’s brains, sex differences in lateralization, hormonal differences, sex, and steroids
Culture and evolution, ethnic differences in child rearing, relationship between culture and babbling, parentese in different cultures, sociocultural influences on cognitive development, scaffolding, zone of proximal development, adolescent status and culture, diversity and the adolescent search for identity, ethnicity and personal identity, culture and moral reasoning, ageism and myths about the elderly	Prenatal development, maternal and paternal parenting styles, emotional attachment patterns, gender-role development, gender and puberty, male and female moral reasoning, male and female midlife transitions
The “other race” effect in facial recognition, culture and the recognition of pictorial depth cues, culture and the Müller-Lyer illusion, cross-racial perceptions (eyewitness accuracy), cultural differences in perception	Sex differences in colour deficiency
States of consciousness and culture, culture and interpretations of dreams and hypnopompic imagery, the cultural context of drug use	REM sleep in men and women, caffeine and pregnancy, effects of alcohol on sexual performance
Spanking and culture	Effects of television on children’s perceptions of sex roles
Aging and memory, cultural influences on memory, eyewitnesses and cross-racial recognition, labelling and the ability to remember people from other social groups	
Linguistic misunderstandings between cultures, the pros and cons of bilingualism, cultural differences in the use of phonemes, the deaf community and gestural languages, age and IQ, the developmentally disabled, race, culture, ethnicity, and intelligence, cultural differences in intelligence (as taught to children), culture-fair intelligence testing	Stereotypes and cognition

*(continued)*

**TABLE I.1** A Modular Approach (*continued*)

Modules	Neuroscience in Psychology	Self-Knowledge in Psychology
<b>Modules 42–45: Motivation and Emotion</b>	Needs as internal deficiencies, biological motives, homeostasis, circadian rhythms, role of melatonin, biological factors in hunger, hypothalamus and thirst, types of thirst, estrus, sex hormones, physiological changes and emotion, physiological arousal, moods, emotion and the limbic system, including the amygdala, role of autonomic nervous system and arousal, parasympathetic rebound, polygraphy, brain scans and lying	Intrinsic motivation and creativity, meta-needs, self-actualization, emotional expression and health, higher emotional intelligence
<b>Modules 46–49: Human Sexuality</b>	Biology of sexual development, prenatal sex typing, genes, the brain and sexual orientation, prenatal biological basing effect, differing skills of men and women, testosterone and sexual behaviour	Androgyny and self-expression, sexual self-awareness, sexually responsible behaviour, communication skills
<b>Modules 50–54: Personality</b>	Behavioural genetics and personality, Big 5 traits, brain systems, and neurotransmitters, limbic system and the unconscious	Long-term consistency of self, self-concept, self-esteem, self-confidence, Freudian ego, free choice, self-actualization, positive personality traits, self-image, congruence (between self-image and ideal self), possible selves, self-efficacy, self-reinforcement
<b>Modules 55–59: Health Psychology</b>	Stress reaction, general adaptation syndrome, psychoneuroimmunology, psychosomatic disorders, biofeedback	Self-screening for illnesses, self-control, wellness, cognitive appraisal, coping, hardiness, optimism, happiness, stress management, humour
<b>Modules 60–64: Psychological Disorders</b>	Organic psychosis, Alzheimer’s disease, hereditary and biological causes of schizophrenia, the schizophrenic brain, biology and depression, the psychopathic brain	Self-destructive behaviours, nonconformity, subjective discomfort, loss of self, self-criticism, self-defeating thinking patterns
<b>Modules 65–69: Therapies</b>	Drug therapies, ECT, brain stimulation therapy, psychosurgery, transcranial magnetic stimulation	Insight, personal growth and psychotherapy, human potential, choosing to become, courage, overcoming irrational beliefs, the fully functioning person, behavioural self-management
<b>Modules 70–74: Social Psychology</b>	Aggression, biology, and the brain	Social comparison, self-disclosure, self-assertion, prosocial behaviour, superordinate goals, overcoming stereotypes and prejudice, self-identity
<b>Modules 75–78: Applied Psychology</b>		Self-management, communication skills, beyond self-interest, sports and physical self-esteem, peak performance, flow

Human Diversity and Culture in Psychology	Gender in Psychology
<p>Cultural values and food preferences; culture, ethnicity, and dieting; pain avoidance and cultural conditioning; the influence of culture on emotional expressions; cultural differences in the occurrence of emotion; cultural differences in facial expressions; cultural learning and body language</p>	<p>Eating disorders and gender, how hormones affect sex drive, gender differences in emotion</p>
<p>Sexual orientation, gender-role stereotypes, culture and gender roles, androgyny, gender variance, casual sex in North America, sexual attitudes and behaviour across cultures, oversexualization of children, rape culture, HIV/AIDS worldwide</p>	<p>Psychosocial differences between men and women, intersexuality, controversy about gender differences in ability (left brain/right brain), gender roles, gender-role stereotypes, culture and gender roles, gender-role socialization, androgyny, sexual arousal (after watching erotic films), sexual activity, sexual orientation, role of hormones in sex drive, gender differences in sexual response, sexual double standard, gender-role stereotyping and rape, rates of HIV/AIDS infection and death</p>
<p>Acculturative stress, character and culture, self-esteem and culture, common traits and culture</p>	<p>Social learning of male and female traits</p>
<p>Culture shock and acculturative stress, scapegoating of ethnic group members</p>	<p>Sex differences in seeking social support</p>
<p>How culture affects judgments of psychopathology, culture-bound syndromes from around the world, ethnic group differences in psychopathology</p>	<p>How gender affects judgments of psychopathology, gender differences in rates of anxiety disorders, sex differences in rates of clinical depression, gender differences in suicide (attempt and completion)</p>
<p>Cultural issues in counselling and psychotherapy, culturally aware therapists</p>	
<p>Male-female differences in mate preferences, racial prejudice and discrimination, ethnocentrism, social stereotypes, cultural differences in hostility and aggression, symbolic prejudice, rejection and demonization of out-groups, experiments in creating and reducing prejudice, multiculturalism, breaking the prejudice habit, cultural awareness</p>	<p>Influence of physical attractiveness, male–female differences in mate preferences, evolutionary perspectives on male and female mate selection, levels of testosterone and aggression, effects of pornography on sexual violence against women</p>
<p>Corporate culture, cultural differences in norms governing personal space, attentional overload in urban settings, resource consumption in different cultures, universal instructional design</p>	<p>Gender role stereotypes and leadership, women as leaders</p>

## Modules 32–36: Memory

- Canadian research highlights include studies related to:
  - the efficiency of short-term memory
  - the manipulation of memories to reduce the impact of post-traumatic stress disorder (PTSD)
  - hypnosis
  - retrieval-induced forgetting and its connection to eyewitness testimony
  - police lineups and eyewitness identification
  - false memories
  - flashbulb memories
  - infantile amnesia

## Modules 37–41: Cognition and Intelligence

- Canadian research highlights include studies related to:
  - synesthesia
  - revised *Human Diversity* box about the benefits and challenges associated with bilingualism
  - similarities in brain activation for gestural vs. verbal languages
  - the link between decision making and IQ
  - controversies over the relationship between IQ and race
  - automatic vs. deliberate cognition in problem solving and decision making
  - new *Brainwaves* box examining the neural underpinnings of creative thinking
- Canadian cultural and public policy highlights include:
  - two-way bilingual education

## Modules 42–45: Motivation and Emotion

- Canadian research highlights include studies related to:
  - circadian rhythms
  - eating habits, including the influence of external cues
  - role of the Internet in promoting eating disorders
  - new *Brainwaves* box describing how the pain associated with social relationships is processed by the brain in a manner similar to that of physical pain
  - emotional intelligence

- Canadian cultural and public policy highlights include:
  - Supreme Court of Canada decision about the admissibility of polygraph results as evidence in Canadian courts

## Modules 46–49: Human Sexuality

- Canadian research highlights include studies related to:
  - asexuality
  - homophobia, including the potential role of prenatal hormones
  - sexual satisfaction in relationships
  - sexual pain
  - gender role socialization in childhood
  - gender dysphoria, and the use of puberty-blocking hormones for adolescents with this diagnosis
- Canadian cultural and public policy highlights include:
  - Canadian legislation related to the LGBT community, including same-sex marriage and legal protection from discrimination for transgendered persons
  - Supreme Court of Canada ruling on prostitution and subsequent proposed changes to prostitution laws
  - Canadian legislation regarding sexual assault (formerly *rape*)
  - Statistics Canada data concerning the gender wage gap

## Modules 50–54: Personality

- Canadian research highlights include studies related to:
  - the HEXACO model of personality as an alternate to the Big Five
  - the dark triad and dark tetrad, and their relationship to various forms of aggression
  - perfectionism
  - shyness, including its neural correlates and how it is distinct from social withdrawal

## Modules 55–59: Health Psychology

- Canadian research highlights include studies related to:
  - reducing tobacco use
  - acculturative stress
  - procrastination
  - the positive effects of goal disengagement
- Canadian cultural and public policy highlights include:
  - income inequality in Canada

## Modules 60–64: Psychological Disorders

- Canadian research highlights include studies related to:
  - trauma, including PTSD in the military
  - suicide, with a focus on suicide among First Nations youth
- Canadian cultural and public policy highlights include:
  - provincial and territorial laws related to civil commitment
  - Canadian legislation concerning the *Not Criminally Responsible by Reason of a Mental Disorder* (NCRMD) designation in criminal trials (Section 16 of the Criminal Code of Canada), and current efforts to alter it
  - new *Critical Thinking* box on euthanasia and assisted suicide (Section 14 of the Criminal Code of Canada and provincial/territorial laws related to health care), including key court cases and recent efforts to legalize physician-assisted suicide

## Modules 65–69: Therapies

- Canadian research highlights include studies related to:
  - the efficacy of brief therapeutic interventions, telephone-based therapeutic interventions and web-based interventions
  - the use of electroconvulsive therapy and deep brain stimulation in Canada
  - the beneficial effects of cognitive behavioural therapy
  - emotion-focused therapy
  - virtual reality exposure as a means of treating Canadian war veterans suffering from PTSD
  - ways in which we can improve our self-control

## Modules 70–74: Social Psychology

- Canadian research highlights include studies related to:
  - group cohesion in the Canadian military
  - upward social comparisons in romantic relationships
  - the ways in which social group identification alters memory for nongroup members
  - individual differences in commitment to attitudes
  - new *Critical Thinking* box on bullying and cyberbullying in Canada
  - prejudice, its evolutionary roots, and how it can be minimized
  - outcomes associated with a belief in a just world

- Canadian cultural and public policy highlights include:
  - multiculturalism in Canada

## Modules 75–78: Applied Psychology

- Canadian research highlights include studies related to:
  - leadership in the workplace
  - aggression in the workplace
  - inaction with respect to environmental issues
  - jury behaviour
- Canadian example on tragedy of the commons
  - Canadian laws concerning jury selection and deliberation
  - new *Human Diversity* box on the Canadian roots of restorative justice and its role in a high-profile Canadian murder case

## A Complete Course—Teaching and Learning Supplements

A rich array of supplements accompanies *Psychology: A Modular Approach*, including several that use the latest technologies. These supplements are designed to make teaching and learning more effective. Many are available free to professors or students. Others can be packaged with this book at a discount. Contact your local sales representative for more information on any of the listed resources.

## Instructor Support Materials

### About the Nelson Education Teaching Advantage (NETA)

The **Nelson Education Teaching Advantage (NETA)** program delivers research-based instructor resources that promote student engagement and higher-order thinking to enable the success of Canadian students and educators. To ensure the high quality of these materials, all Nelson ancillaries have been professionally copyedited.

Be sure to visit Nelson Education's **Inspired Instruction** website at [www.nelson.com/inspired](http://www.nelson.com/inspired) to find out more about NETA. Don't miss the testimonials of instructors who have used NETA supplements and seen student engagement increase!

## Essential Teaching Resources

Teaching an introductory psychology course is a tremendous amount of work, and the supplements listed here should help make it possible for you to concentrate on the more creative and rewarding facets of teaching. All of these supplements are available online for download. Go to <http://nelson.com/login> or [login.cengage.com](http://login.cengage.com) to create an account and log in.

**NETA Test Bank** This resource was written by Karen McLaren of Canadore College and Carolyn Ensley of Wilfrid Laurier University. It includes over 9,000 multiple-choice questions written according to NETA guidelines for effective construction and development of higher-order questions. Also included are true/false, completion, and essay questions correlated to learning objectives and labelled with question type, difficulty, and main-text references.



The NETA Test Bank is available in a new, cloud-based platform. **Testing Powered by Cognero®** is a secure online testing system that allows you to author, edit, and manage test bank content from any place you have Internet access. No special installations or downloads are needed, and the desktop-inspired interface, with its drop-down menus and familiar, intuitive tools, allows you to create and manage tests with ease. You can create multiple test versions in an instant, and import or export content into other systems. Tests can be delivered from your learning management system, your classroom, or wherever you want. Nelson Testing Powered by Cognero for *Psychology, A Modular Approach* also be accessed through [www.nelson.com/instructor](http://www.nelson.com/instructor).

**NETA PowerPoint** Microsoft® PowerPoint® lecture slides for every chapter have been created by Corey Isaacs of Western University. There is an average of 60 slides per chapter, many featuring key figures, tables, and photographs from *Psychology, A Modular Approach*. NETA principles of clear design and engaging content have been incorporated throughout, making it simple for instructors to customize the deck for their courses.

**NETA Instructor's Manual** The Instructor's Manual is organized according to the textbook chapters and addresses key

educational concerns, such as teaching tips and classroom resources.

**Image Library** This resource consists of digital copies of figures, short tables, and photographs used in the book. Instructors may use these jpegs to customize the NETA PowerPoints or create their own PowerPoints presentations.

## Student Support Materials

Introductory students must learn a multitude of abstract concepts, which can make a first course in psychology difficult. The materials listed here will greatly improve students' chances for success.

**MindTap** MindTap for *Psychology: A Modular Approach* is a personalized, fully online digital learning platform of authoritative content, assignments, and services that engages your students in a singular interactive learning path. By incorporating the SQ4R method in a uniquely modular format, MindTap students improve their reading and study skills while they are learning psychology. MindTap is well beyond an ebook, a homework solution or digital supplement, a resource centre website, a course delivery platform, or a Learning Management System. It is the first in a new category—the Personal Learning Experience. MindTap for *Psychology: A Modular Approach* allows complete flexibility in how a course is built, making it easier to take advantage of the modular and SQ4R format.

Students should visit [www.nelson.com/student](http://www.nelson.com/student) to start using MindTap by entering the online access code from the card included with the text. If a code card is *not* provided, students can purchase instant access at [NELSONbrain.com](http://NELSONbrain.com).

**Aplia** Aplia for *Psychology: A Modular Approach* is another available online learning solution, one that provides students with interactive chapter assignments correlated to the text. Aplia uses tutorials, news analysis, experiments, and other multimedia features to maintain student interest; these are not traditional chapter review questions! As students complete online assignments, they receive immediate grades and automatic feedback on each problem set. Assignments are automatically graded and entered into the instructor's Aplia gradebook, enabling instructors to focus on less labour-intensive and higher-impact areas of teaching.

Please note that access to Aplia for *Psychology: A Modular Approach* is included in the MindTap course for *Psychology: A*



*Modular Approach*. Use them together to create a fully integrated digital course experience.

## Summary

We sincerely hope that teachers and students will consider this book and its supporting materials a refreshing change from the ordinary. Creating it has been quite an adventure. In the pages that follow, we think students will find an attractive blend of the theoretical and the practical, plus many of the most exciting ideas in psychology. Most of all, we hope that students using this book will discover that reading a textbook can be informative while also being entertaining and enjoyable.

## Acknowledgments from the Author of the Canadian Edition

*Psychology* is a cooperative effort requiring the talents and energies of a large community of scholars, teachers, researchers, and students. Like most endeavours in psychology, this book reflects the efforts of many people. I would like to express my appreciation for the contributions of the following professors, whose advice was important in the development of *Psychology: A Modular Approach*, First Canadian Edition:

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Danielle Gaucher, University of Winnipeg

Richard Le Grand, Kwantlen Polytechnic University

Tru Kwong, Mount Royal University

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## How to Study Psychology

### Well, Hello There!

As your authors, we are delighted to welcome you to the “manual” for this textbook. No! Don’t skip this, please. Read on.

Few of us prefer to start a new adventure by reading a manual. We just want to step off the airplane and begin our vacation, get right into that new computer game, or start using our new camera or smartphone. Please be patient. Successfully learning psychology depends on how *reflective* you are as you read your textbook, listen during your classes, study for exams, and then write them.

Students who get good grades tend to work more reflectively, or smarter, not just longer or harder. They also tend to understand and remember more of what they’ve learned long after their exams are over. Psychology is for their lives, not just for their exams. In this module, we explore a variety of ways to become more reflective learners.



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#### SURVEY QUESTIONS

- 1.1 What is reflective learning?
- 1.2 What is the best way to read a textbook?
- 1.3 How can learning in class be improved?
- 1.4 What is the best way to study?
- 1.5 What are some ways to be a more effective test taker?
- 1.6 How can procrastination be overcome?
- 1.7 Can digital media help with reflective processing?
- 1.8 What career-related skills will I learn as I read this book?
- 1.9 What are the career opportunities in the field of psychology?

## Reflective Learning—Academic All-Stars

### SURVEY QUESTION 1.1: What is reflective learning?

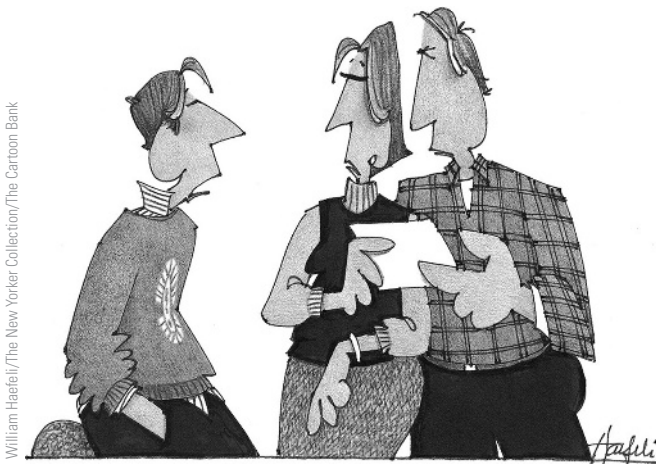
You have undoubtedly spent the occasional evening vegging out in front of the television. It probably was fun, but you may have noticed that you didn’t think too much about what you were watching and that your subsequent memories are not detailed. You were engaging in **experiential processing**, more or less passively soaking up the experience (Kahneman,

2011; Norman, 1994). There is usually nothing wrong with experiential processing; we humans rely on it frequently. As we will see in later modules of this book, most perception, as well as some learning, intuition, and creativity, depends in part on experiential processing.

Experiential processing is appropriate for entertainment, but it doesn’t work well if your goal is to learn course material. To see why this might be the case, think back to, say, a recent job interview. It is highly unlikely that you got through the interview by relying on experiential processing alone (and

even less likely that you landed the job if you did). Instead, you actively and carefully listened to the questions and put some serious effort into thinking through the implications of answering in different ways before responding. No drifting off here; you were focused and controlled until you left the interview, when you likely breathed a much-deserved sigh of relief.

By reacting mindfully (Siegel, 2007), you engaged in **reflective processing** (Kahneman, 2011; Norman, 1994). Rather than just having an experience, you *actively thought* about it. Reflective processing is involved whenever experiential processing is not enough and you must actively and effortfully control your thoughts to focus on the matter at hand.



"I'm too busy going to college to study."

**Reflective learning** occurs when you engage in deliberately reflective and active self-guided study (Hofer & Yu, 2003; Kaplan, 2008). Simply put, you will learn more from a textbook, a lecture, or a website if you mindfully reflect on what you are experiencing. You will also remember it better. (In memory terms, the result of reflective learning is called *elaborative processing*, which you can learn more about in Module 32.) Here, in general, is how you can change passive studying into reflective learning:

1. *Set specific, objective learning goals.* Begin each learning session with specific goals in mind. What knowledge or skills are you trying to master? What do you hope to accomplish (Burka & Yuen, 2008)?
2. *Plan a learning strategy.* How will you accomplish your goals? Make daily, weekly, and monthly plans for learning. Then put them into action.

3. *Be your own teacher.* Effective learners silently give themselves guidance and ask themselves questions. For example, as you are learning, you might ask yourself, "What are the important ideas here? What do I remember? What don't I understand? What do I need to review? What should I do next?"
4. *Monitor your progress.* Reflective learning depends on self-monitoring. Exceptional learners keep records of their progress toward learning goals (pages read, hours of studying, assignments completed, and so forth). They quiz themselves, use study guides, and find other ways to check their understanding while learning.
5. *Reward yourself.* When you meet your daily, weekly, or monthly goals, reward your efforts in some way, such as going to a movie or downloading some new music. Be aware that self-praise also rewards learning. Being able to say "Hey, I did it!" can be rewarding. In the long run, success, self-improvement, and personal satisfaction are the real payoffs for learning.
6. *Evaluate your progress and goals.* It is a good idea to frequently evaluate your performance records and goals. Do any specific areas of your work need improvement? If you are not making good progress toward long-range goals, do you need to revise your short-term targets?
7. *Take corrective action.* If you fall short of your goals, you may need to adjust how you budget your time. You may also need to change your learning environment to deal with distractions such as browsing the web, daydreaming, talking to friends, or testing the limits of your hearing with your iPod.

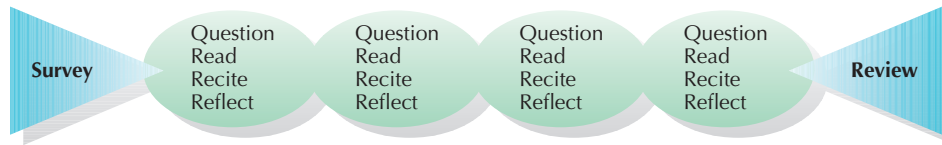
If you discover that you lack certain knowledge or skills, ask for help, take advantage of tutoring programs, or look for information beyond your courses and textbooks. Knowing how to reflectively control learning can be a key to life-long enrichment and personal empowerment (Van Blerkom, 2012).

## Reflective Reading—How to Tame a Textbook

**SURVEY QUESTION: 1.2:** What is the best way to read a textbook?

*How can I be more reflective while reading?* One powerful way to be more reflective is through **self-reference**. As you read,





● **Figure 1.1**

The reflective SQ4R method promotes active learning and information processing. You begin with a survey of the chapter or section, depending on how much you plan to read. You then proceed through cycles of questioning, reading, reciting, and reflecting and conclude with a review of the section or the entire chapter.

relate new facts, terms, and concepts to your own experiences and information you already know well. Doing this will make new ideas more personally meaningful and easier to remember. **Critical thinking** is another powerful way to be more reflective. Critical thinkers pause to evaluate, compare, analyze, critique, and synthesize what they are reading (Chaffee, 2012). You should, too.

These ways to improve learning can be combined into the **reflective SQ4R method**. SQ4R stands for *survey, question, read, recite, reflect, and review*, which are six steps that can help you get more out of your reading:

**S = Survey.** Skim through a module before you begin reading it. Start by looking at topic headings, figure captions, and summaries. Try to get an overall picture of what lies ahead. Because this book is organized into short modules, you can survey just one module at a time if you prefer.

**Q = Question.** As you read, reword each topic heading into one or more questions. For example, when you read the heading “Stages of Sleep,” you might ask: “Is there more than one stage of sleep?” “What are the stages of sleep?” “How do they differ?” Asking questions prepares you to read with a purpose.

**R1 = Read.** The first R in SQ4R stands for *read*. As you read, look for answers to the questions you asked. Read in short bites, from one topic heading to the next, and then stop. For difficult material, you may want to read only a paragraph or two at a time.

**R2 = Recite.** After reading a small amount, you should pause and recite or rehearse. Try to mentally answer your questions. Also, make brief notes to summarize what you just read. Making notes will reveal what you do and don’t know, so you can fill in gaps in your knowledge (Peeverly et al., 2003).

If you can’t summarize the main ideas, skim over each section again. Until you can understand and remember what you just read, there’s little point to reading more. After you’ve studied a short bite of text, turn the next topic heading into questions. Then read to the following heading. Remember to look for answers as you read and to recite or take notes before moving on.

Ask yourself repeatedly, “What is the main idea here?”

Repeat the question–read–recite cycle until you’ve finished an entire module (or just a part of a module if you want to read shorter units).

**R3 = Reflect.** As you read, reflect on what you are reading. As stated earlier, two powerful ways to do this are self-reference and critical thinking. This is the most important step in the reflective SQ4R method. The more mindfulness and genuine interest you can bring to your reading, the more you will learn (Hartlep & Forsyth, 2000; Wong, 2012).

**R4 = Review.** When you’re done reading, skim back over a module or read your notes. Then check your memory by reciting and quizzing yourself again. Try to make frequent, active review a standard part of your study habits (see ● **Figure 1.1**).

Does this really work? You bet! Using a reflective reading strategy improves learning and course grades (Taraban, Rynearson, & Kerr, 2000). It also results in enhanced long-term understanding. Simply reading straight through a textbook can give you intellectual indigestion. That’s why it’s

**Experiential processing** *Thought that is passive, effortless, and automatic.*

**Reflective processing** *Thought that is active, effortful, and controlled.*

**Reflective learning** *Deliberately reflective and active self-guided study.*

**Self-reference** *The practice of relating new information to prior life experience.*

**Critical thinking** *An ability to evaluate, compare, analyze, critique, and synthesize information.*

**Reflective SQ4R method** *An active study–reading technique based on these steps: survey, question, read, recite, reflect, and review.*

better to stop often to survey, question, recite, reflect, review, and digest information as you read.

## How to Use *Psychology: A Modular Approach*

You can apply the reflective SQ4R method to any course text. However, we have specifically designed this textbook to help you actively learn psychology. Consider trying out the following suggestions as you work through this module:

**Survey** Each module opens with a survey that includes a short introduction to what will be covered as well as a list of *Survey Questions*. You can use these features to identify important ideas as you begin reading. The introduction should help interest you in the topics you will be reading about, and the Survey Questions are a good guide to the kinds of information you should look for as you read. In fact, answers to the Survey Questions are a good summary of the core concepts in each module. If, years from now, you still remember those core concepts, your authors will be happy indeed.

After you've studied these features, take a few minutes to do your own survey of the module, including the figure captions and module-ending material. Doing so will help you build a mental map of upcoming topics.

**Question** *How can I use the reflective SQ4R method to make reading more interesting and effective?* Try to actively interact with your textbooks as you read. Perhaps the most effective way to do this is to ask yourself a lot of questions as you read. For example, as noted earlier, modules and major module sections begin with headings; try turning them into questions. One Module 2 heading is Critical Thinking—Take It with a Grain of Salt. Turn this into a question that occurs to you, such as “Why should I be skeptical of what I read?” If you read with an aim toward answering your questions, you will be much more likely to get the key points in what you are reading. *Dialogue Questions* like the one that began this paragraph will also help you focus on seeking information as you read. These questions are much like those running through the minds of students like you as they read this book. Similarly, the *Survey Questions* are repeated throughout each module to help you recognize key topics. Try to anticipate these questions. Even better, be sure to ask your own questions.

**Read** As an aid to reading, important terms are printed in boldface type and defined when they first appear. (Some are followed by pronunciations—capital letters show which syllables are accented.) You'll also find a *running glossary* in the lower corner of pages you are reading, so you never have to guess about the meaning of technical terms. If you want to look up a term from a lecture or another module, check the main *Subject Index/Glossary*. This mini-dictionary is located near the end of the book. In addition, figures and tables will help you quickly grasp important concepts.

**Recite and Reflect** To help you study in smaller “bites,” each module in this textbook ends with a study guide called a *Knowledge Builder*. By answering the *Recite* questions in the Knowledge Builders, you can check how well you remember what you just read. In addition, *Think Critically* questions invite you to reflect more deeply about the hows and whys of what you have just read, and *Self-Reflect* questions invite self-reference to help you connect new ideas to your own life. (Don't forget to take notes and recite and reflect on your own.)

This book also provides other opportunities for you to reflect on what you are reading. Every few modules, you will encounter a *Psychology in Action* module. These discussions are filled with practical ideas you can relate to your own life. In many modules, *Discovering Psychology* boxes also invite you to relate psychology to your own behaviour. *Critical Thinking* boxes present intriguing questions you can use to sharpen your critical thinking skills. In addition, *Human Diversity* boxes encourage you to reflect on the rich variability of human experience; *Brainwaves* boxes show how the brain relates to psychology; and *The Clinical File* boxes show how psychology can be applied to treat clinical problems.

**Review** Each module concludes with a point-by-point *Summary* to help you identify psychology's big ideas and enduring principles. These summaries are organized around the same Survey Questions you read at the beginning of the module. You can also return to the glossary items throughout each module for further review.

● **Table 1.1** summarizes how this text helps you apply the reflective SQ4R method. Even with all this help, there is still much more you can do on your own.



TABLE 1.1 Using the Reflective SQ4R Method

<b>Survey</b>	<ul style="list-style-type: none"> <li>• Module-Opening Introduction</li> <li>• Survey Questions</li> <li>• Figure Captions</li> <li>• Module Summaries</li> </ul>
<b>Question</b>	<ul style="list-style-type: none"> <li>• Topic Headings</li> <li>• Survey Questions</li> <li>• In-Text Dialogue Questions</li> </ul>
<b>Read</b>	<ul style="list-style-type: none"> <li>• Boldface Terms</li> <li>• Running Glossary (in margin)</li> <li>• Figures and Tables</li> </ul>
<b>Recite</b>	<ul style="list-style-type: none"> <li>• Recite Questions (in Knowledge Builders)</li> <li>• Practice Quizzes (online)</li> <li>• Notes (make them while reading)</li> </ul>
<b>Reflect</b>	<ul style="list-style-type: none"> <li>• Reflect Questions, including Think Critically and Self-Reflect questions (in Knowledge Builders)</li> <li>• Psychology in Action Modules (throughout the text)</li> <li>• Boxed Features (throughout the text)</li> </ul>
<b>Review</b>	<ul style="list-style-type: none"> <li>• Module Summaries</li> <li>• Boldface Terms</li> <li>• Running Glossary (in margin)</li> <li>• Figures and Tables</li> <li>• Practice Quizzes (online)</li> </ul>

## Reflective Note Taking—LISAN Up!

**SURVEY QUESTION 1.3:** How can learning in class be improved?

Just as studying a textbook is best done reflectively, so, too, is learning in class (Norman, 1994). Like effective reading, good notes come from actively seeking information. A **reflective listener** avoids distractions and skillfully gathers ideas. Here's a listening/note-taking plan that works for many students. The letters LISAN, pronounced like the word *listen*, will help you remember the steps:

**L = Lead. Don't follow.** Read assigned materials before coming to class. Try to anticipate what your teacher will say by asking yourself questions. If your teacher provides course notes or PowerPoint® overheads before lectures, survey them before coming to class. Reflective questions can come from those materials or from study guides, reading assignments, or your own curiosity.

**I = Ideas.** Every lecture is based on a core of ideas. Usually, an idea is followed by examples or explanations. Ask yourself often, "What is the main idea now? What ideas support it?"

**S = Signal words.** Listen for words that tell you what direction the instructor is taking. For instance, here are some signal words:

<i>There are three reasons . . .</i>	Here come ideas
<i>Most important is ....</i>	Main idea
<i>On the contrary ....</i>	Opposite idea
<i>As an example ....</i>	Support for main idea
<i>Therefore ....</i>	Conclusion

**A = Actively listen.** Sit where you can get involved and ask questions. Bring questions you want answered from the last lecture or from your text. Raise your hand at the beginning of class or approach your professor before the lecture. Do anything that helps you stay active, alert, and engaged.

**N = Note taking.** Students who take accurate lecture notes tend to do well on tests (Williams & Eggert, 2002). However, don't try to be a tape recorder. Listen to everything, but be selective and write down only key points. If you are too busy writing, you may not grasp what your professor is saying. When you're taking notes, it might help to think of yourself as a reporter who is trying to get a good story (Ryan, 2001; Wong, 2012).

Most students take reasonably good notes—and then don't use them! Many students wait until just before exams to review. By then, their notes have lost much of their meaning. If you don't want your notes to seem like chicken scratches, it pays to review them daily (Ellis, 2013).

## Using and Reviewing Your Notes

When you review, you will learn more if you take these extra steps (Burka & Yuen, 2008; Ellis, 2013; Santrock & Halonen, 2013):

- As soon as you can, reflect on your notes to fill in gaps, complete thoughts, and look for connections among ideas.
- Remember to link new ideas to what you already know.
- Summarize your notes. Boil them down and organize them.

**Reflective listener** A person who knows how to maintain attention, avoid distractions, and actively gather information from lectures.

- After each class session, write down several major ideas, definitions, or details that are likely to become test questions. Then, make up questions from your notes and be sure you can answer them.

**Summary** The letters LISAN are a guide to active listening, but listening and good note taking are not enough. You must also review, organize, reflect, extend, and think about new ideas. Use active listening to get involved in your classes and you will undoubtedly learn more (Van Blerkom, 2012).

## Reflective Study Strategies— Making a Habit of Success

### SURVEY QUESTION 1.4: What is the best way to study?

Grades depend as much on effort as they do on intelligence. However, don't forget that good students work more efficiently, not just harder. Many study practices are notoriously passive and unreflective, including recopying lecture notes, studying class notes but not the textbook (or the textbook but not class notes), outlining modules, answering study questions with the book open, and “group study” (which often becomes a party). One of the study strategies most commonly used by students—highlighting or underlining material in the text or lecture notes—is a particularly *ineffective* way to master the material. If you cannot imagine your textbook without the pretty neon colours, make sure that you combine your highlighting with one (or more!) of the effective strategies that we discuss below.

Recently, researchers reviewed more than 700 articles on 10 of the most commonly used learning strategies to determine which ones were the most effective (Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013). Let's take a look at the two strategies that came out on top.

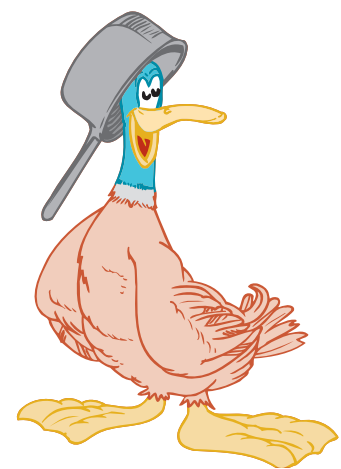
**Test Yourself** A great way to improve grades is to take practice tests before the real one (Karpicke & Blunt, 2011), and this strategy came out as a clear winner in the review of learning strategies. In other words, reflective studying should include **self-testing**, in which you pose questions to yourself. You can use flashcards; Knowledge Builder Recite, Think Critically, and Self-Reflect questions; online quizzes; a study guide; or other means. As you study, ask yourself several questions and be sure you can answer them. Studying without self-testing is like practising for a basketball game without shooting any baskets.

**Use Spaced Study Sessions** Another clear winner in the review of learning strategies was the use of spaced study sessions. It is reasonable to review intensely before an exam. However, you're taking a big risk if you are only cramming (learning new information at the last minute). Spaced practice is much more efficient (Anderson, 2010; Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013). **Spaced practice** consists of a large number of relatively short study sessions. Long, uninterrupted study sessions are called **massed practice**. (If you “massed up” your studying, you probably messed it up, too.)

Cramming places a big burden on memory. Usually, you shouldn't try to learn anything new about a subject during the last day before a test. It is far better to learn small amounts every day and review frequently.

**Other Suggestions** Ideally, you should study in a quiet, well-lit area free of distractions. If possible, you should also have one place only for studying. Do nothing else there: Keep magazines, MP3 players, friends, cell phones, pets, Twitter, video games, puzzles, food, lovers, sports cars, elephants, pianos, televisions, Facebook, and other distractions out of the area. In this way, the habit of studying will become strongly linked with one specific place.

Another strategy that has been linked to improved memory is the use of **mnemonics**. A mnemonic (nuh-MON-ik) is a memory aid. Mnemonics can be created in several ways. Most mnemonics link new information to ideas or images that are easy to remember. For example, what if you want to remember that the Spanish word for duck is *pato* (pronounced POT-oh)? To use a mnemonic, you could picture a duck in a pot or a duck wearing a pot for a hat. Likewise, to remember that the cerebellum controls coordination, you might picture someone named “Sarah Bellum” who is very coordinated. For best results, make your mnemonic images exaggerated or bizarre, vivid, and interactive (Macklin & McDaniel, 2005; Radvansky, 2011).



Mnemonics help make new information more familiar and memorable. Forming an image of a duck wearing a pot for a hat might help you remember that *pato* (pronounced POT-oh) is the Spanish word for duck.

## Reflective Test Taking—Are You Test Wise?

**SURVEY QUESTION 1.5:** What are some ways to be a more effective test taker?

*If I read, listen, and study effectively, is there anything else I can do to improve my grades?* You must also be able to show what you know on tests. Here are some ways to improve your test-taking skills:

### General Test-Taking Skills

You'll do better on all types of tests if you observe the following guidelines (Wood & Willoughby, 1995; Van Blerkom, 2012):

1. Read all directions and questions carefully. They may give you good advice or clues.
2. Survey the test quickly before you begin.
3. Answer easy questions before spending time on more difficult ones.
4. Be sure to answer all questions.
5. Use your time wisely.
6. Ask for clarification when necessary.

**Objective Tests** Several additional strategies can help you do better on objective tests. Objective tests (multiple-choice and true-false items) require you to recognize a correct answer among wrong ones or a true statement versus a false one. Here are some strategies for taking objective tests:

1. Relate the question to what you know about the topic. Then, read the alternatives. Does one match the answer you expected to find? If none match, reexamine the choices and look for a partial match.
2. Read all the choices for each question before you make a decision. Here's why: If you immediately think that *a* is correct and stop reading, you might miss seeing a better answer like both *a* and *d*.
3. Read rapidly and skip items you are unsure about. You may find free information in later questions that will help you answer difficult items.
4. Eliminate certain alternatives. With a four-choice multiple-choice test, you have one chance in four of guessing right. If you can eliminate two alternatives, your guessing odds improve to 50-50.

5. Be sure to answer any skipped items, unless there is a penalty for guessing. Even if you are not sure of the answer, you may be right. If you leave a question blank, it is automatically wrong. When you are forced to guess, don't choose the longest answer or the letter you've used the least. Both strategies lower scores more than random guessing does.
6. Following this bit of folk wisdom is a mistake: "Don't change your answers on a multiple-choice test. Your first choice is usually right." This is wrong. If you change answers, you are more likely to *gain* points than to lose them. This is especially true if you are uncertain of your first choice or it was a hunch and if your second choice is more reflective (Higham & Gerrard, 2005).
7. Search for the one best answer to each question. Some answers may be partly true, yet flawed in some way. If you are uncertain, try rating each multiple-choice alternative on a 1 to 10 scale. The answer with the highest rating is the one you are looking for.
8. Remember that few circumstances are always or never present. Answers that include superlatives such as *most*, *least*, *best*, *worst*, *largest*, or *smallest* are often false.

**Essay Tests** Essay questions are a weak spot for students who lack organization, don't support their ideas, or don't directly answer the question (Van Blerkom, 2012). When you take an essay exam, try the following:

1. Read the question carefully. Be sure to note key words, such as *compare*, *contrast*, *discuss*, *evaluate*, *analyze*, and *describe*. These words all demand a certain emphasis in your answer.
2. Answer the question. If the question asks for a definition and an example, make sure you provide both. Providing just a definition or just an example will get you half marks.
3. Reflect on your answer for a few minutes and list the main points you want to make. Just write them as they

**Self-testing** *Evaluating learning by posing questions to yourself.*

**Spaced practice** *Practice spread over many relatively short study sessions.*

**Massed practice** *Practice done in a long, uninterrupted study session.*

**Mnemonic** *A memory aid or strategy.*

come to mind. Then rearrange the ideas in a logical order and begin writing. Elaborate plans or outlines are not necessary.

4. Don't beat around the bush or pad your answer. Be direct. Make a point and support it. Get your list of ideas into words.
5. Look over your essay for errors in spelling and grammar. Save this for last. Your ideas are more important. You can work on spelling and grammar separately if they affect your grades.

**Short-Answer Tests** Tests that ask you to fill in a blank, define a term, or list specific items can be difficult. Usually, the questions themselves contain little information. If you don't know the answer, you won't get much help from the questions.

The best way to prepare for short-answer tests is to overlearn the details of the course. As you study, pay special attention to lists of related terms.

Again, it is best to start with the questions whose answers you're sure you know. Follow that by completing the questions whose answers you think you probably know. Questions whose answers you have no idea about can be left blank.

See ● **Figure 1.2** for a summary of study skills.

**Study Skills Checklist**

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**Time Management**

- Make formal schedule
- Set specific goals

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**Study Habits**

- Study in specific area
- Pace study and review
- Create memory aids
- Test yourself
- Overlearn

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**Reading**

- Use reflective SQ4R method
- Study while reading
- Review frequently

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**Note Taking**

- Listen actively
- Use LISAN method
- Review notes frequently

● **Figure 1.2**  
Study Skills Checklist.

## Procrastination—Avoid the Last-Minute Blues

**SURVEY QUESTION 1.6:** How can procrastination be overcome?

*All these reflective techniques are fine. But what can I do about procrastination?* A tendency to procrastinate is almost universal. Even when procrastination doesn't lead to failure, it can cause much suffering (Sirois & Tosti, 2012; Wohl, Pychyl, & Bennett, 2010). Procrastinators work only under pressure, skip classes, give false reasons for late work, and feel ashamed of their last-minute efforts. They also tend to feel frustrated, bored, and guilty more often (Blunt & Pychyl, 2005).

*Why do so many students procrastinate?* Many students equate grades with their *personal worth*—that is, they act as if grades tell whether they are good, smart people who will succeed in life. By procrastinating, they can blame poor work on a late start, rather than a lack of ability (Beck, Koons, & Milgrim, 2000). After all, it wasn't their best effort, was it?

Perfectionism is a related problem. If you expect the impossible, it's hard to start an assignment. Students with high standards often end up with all-or-nothing work habits (Onwuegbuzie, 2000).

## Time Management

Most procrastinators must eventually face the self-worth issue. Nevertheless, most can improve by learning study skills and better time management. We have already discussed general study skills, so let's consider time management in a little more detail.

A **weekly time schedule** is a written plan that allocates time for study, work, and leisure activities. To prepare your schedule, make a chart showing all the hours in each day of the week. Then fill in times that are already committed: sleep, meals, classes, work, team practices, lessons, appointments, and so forth. Next, fill in times when you will study for various classes. Finally, label the remaining hours as open or free times.

Each day, you can use your schedule as a checklist. That way you'll know at a glance which tasks are done and which still need attention (Burka & Yuen, 2008).

You may also find it valuable to make a **term schedule** that lists the dates of all quizzes, tests, reports, papers, and other major assignments for each class.



Be sure to treat your study times as serious commitments, but respect your free time, too. And remember, students who study hard and practise time management *do* get better grades (Rau & Durand, 2000).

## Goal Setting

As mentioned earlier, students who are reflective, active learners set **specific goals** for studying. Such goals should be clear-cut and measurable (Burka & Yuen, 2008). If you find it hard to stay motivated, try setting goals for the semester, the week, the day, and even for single study sessions. Also, be aware that more effort early in a course can greatly reduce the stress you might experience later. If your professors don't give frequent assignments, set your own day-by-day goals. That way, you can turn big assignments into a series of smaller tasks that you can complete (Ariely & Wertenbroch, 2002). An example would be reading, studying, and reviewing eight pages a day to complete a forty-page chapter in five days. For this textbook, reading one module every day or two might be a good pace. Remember, many small steps can add up to an impressive journey.

## Make Learning an Adventure

A final point to remember is that you are most likely to procrastinate if you think a task will be unpleasant (Pychyl et al., 2000). Learning can be hard work. Nevertheless, many students find ways to make schoolwork interesting and enjoyable. Try to approach your schoolwork as if it were a game, a sport, an adventure, or simply a way to become a better person. The best educational experiences are challenging, yet fun (Ferrari & Scher, 2000; Santrock & Halonen, 2013).

Virtually every topic is interesting to someone, somewhere. You may not be particularly interested in the sex life of South American tree frogs. However, a biologist might be fascinated. (Another tree frog might be, too.) If you wait for teachers to make their courses interesting, you are missing the point. Interest is a matter of your attitude (Sirois & Tosti, 2012).

## Using Digital Media—Netting New Knowledge

**SURVEY QUESTION 1.7:** Can digital media help with reflective processing?

Digital media offer another way to be more reflective. Search the Internet for any psychological term, from *amnesia* to

*zoophobia*, and you will find a vast array of information. Websites range from the authoritative, like the one provided by the American Psychological Association, to Wikipedia entries and personal blogs. However, be aware that information on the Internet is not always accurate. It is wise to approach most websites with a healthy dose of skepticism.

## MindTap

*How would I find information about psychology on the Internet?* Your first stop on the Internet should be MindTap for *Psychology: A Modular Approach*. MindTap's highly personalized, fully online learning platform integrates all of the authoritative content, assignments, and services that accompany this book in one place. It guides you through a presentation of the course curriculum via an innovative learning path that can be tailored by your instructor to include video and other interactive activities. You will complete reading assignments, annotate your readings, complete homework, get detailed instant feedback on Guided Practice activities, and engage with quizzes and assessments. MindTap includes a variety of web-apps known as "MindApps"—allowing functionality like having the text read aloud to you as well as synchronizing your notes with your personal Evernote account. MindApps are woven into the MindTap platform and enhance your learning experience.

## Aplia Guided Practice Activities

Aplia is an online homework solution that offers interactive chapter assignments, tutorials, and other multimedia features. As you complete online assignments, you receive immediate grades and feedback on each problem set. Aplia assignments are automatically graded and entered into your instructor's Aplia gradebook. Aplia's My Practice Reviews are randomized questions made up of question types on which you originally scored 80 percent or less. This adaptive learning feature helps you to study efficiently and effectively. A basic version of Aplia is available as a MindApp and provides the Guided Practice activities in the MindTap learning path.

**Weekly time schedule** *A written plan that allocates time for study, work, and leisure activities during a one-week period.*

**Term schedule** *A written plan that lists the dates of all major assignments for each of your classes for an entire term.*

**Specific goals** *Goals with clearly defined and measurable outcomes.*