

# Preface

Students First.

If I were to use only two words to summarize my goal across the eleven editions of this book, as well as my teaching philosophy, that's what I would say. Students first. I believe that an effective textbook must be oriented to students—informing them, engaging them, and exciting them about the field of psychology and helping them connect it to their worlds.

## Re-envisioning and Revolutionizing the Revision Process

Up to now, to achieve my “Students First” goal in each new edition of *Understanding Psychology*, the revision process was generally this: Several dozen instructors who used the previous edition of the text provided reviews of that edition. In addition, experts in the field provided reviews that pointed out new material to add, as well as outdated material to remove. Using all these reviews, and feedback from my own students, I revised the text. I also added new topics, citations, and features.

For this edition, however, I had a revolutionary tool that brings this revision to a new level: Systematic and precise feedback from thousands of students. This feedback was anonymously collected from the many students who were using Connect Psychology's *LearnSmart*, an online adaptive diagnostic program that provides students with an individualized assessment of their own progress. Because virtually every paragraph in the previous edition is tied to several questions that students answered while using *LearnSmart*, I had access to empirical data showing the specific concepts with which students had the most difficulty.

The data I received from *LearnSmart* appeared in the form of a *heat map*, which graphically illustrates “hot spots” in the text that caused students the most difficulty (see Figure 1). Using these hot spots, I then was able to refine the wording to make these areas clearer than before.

Because I had empirically based feedback at the paragraph and even sentence level, I was able to replace educated guesswork and intuition with precise knowledge as I fine-tuned the textbook.



**FIGURE 1** For most paragraphs in each chapter, heat maps showed if students had difficulty answering questions in Connect Psychology's *LearnSmart*. The data from these hot spots showed how many students answered the question correctly, how long the average response time was, and how many times the question was answered.

Practically, this means that students reading *Understanding Psychology* will have an even greater opportunity to achieve success, and it brings the goal of *Students First* to a new level. This process represents nothing less than a revolution in textbook revision, and I am proud that the new edition of *Understanding Psychology* is the first textbook to incorporate this capability.

### AND THERE'S MORE . . .

In addition to benefiting from this empirically driven approach to revision, the Eleventh Edition of *Understanding Psychology* contains a significant amount of new and updated features and content. Specific areas that were updated are advances in neuroscience, the brain and behavior, cognition, emotions, and cultural approaches to psychological phenomenon including social networking technology. In addition, certain chapters were revised more extensively than others, based on expert reviews: Neuroscience and Behavior (Chapter 3), Learning (Chapter 6), Memory (Chapter 7), and Health Psychology (Chapter 14). To keep research current, hundreds of new citations have been added, and most of them refer to articles and books published since 2010.

The following sample of new and revised topics and textual changes provides a good indication of the book's currency:

#### Chapter 1—Introduction to Psychology

- Social media
- Economic problems, stress, and health
- Consequences of Japanese earthquake and tsunami

#### Chapter 2—Psychological Research

- Reluctance of participants to reveal true behavior in surveys
- Limitations of bystander intervention
- WEIRD acronym for participants in research
- Implicit Association Test

#### Chapter 3—Neuroscience and Behavior

- Moved behavioral genetics material to development chapter
- Updated use of hormone replacement therapy
- Dangers related to steroid use
- Interneuron functions
- Mirror neuron role in speech perception and language
- Electrocorticographic (ECoG) implants
- Sex differences in speed of development of brain
- Communication via thought
- Hemispherectomy

#### Chapter 4—Sensation and Perception

- Innate sense of direction
- Blindsight
- Brain activation training to reduce experience of pain
- Statistics on chronic pain sufferers

- Human tears and chemosignals
- Technology to aid the blind to see

#### Chapter 5—States of Consciousness

- Failure dreams
- Gender differences in dreaming
- Link between daydreams and dreams during sleep
- Legalization of marijuana in 13 states
- Medical uses of marijuana
- Insomnia and use of technologies
- Psychological dependence on social networking and e-mail

#### Chapter 6—Learning

- Operant conditioning approaches to increasing safety
- Behavioral approaches to rewarding drivers
- Positive outcomes of playing prosocial video games
- Social networking and violent video games
- Taste aversion
- Token systems
- Neuroscientific underpinnings of operant conditioning
- Classical conditioning and drug use
- Adaptive learning

#### Chapter 7—Memory

- Neural communication in Alzheimer's disease
- Hyperthymestic syndrome
- Efficacy and ethics of drugs to enhance memory

- Value of forgetting

- Adaptive nature of constructed memories
- Emotional meaning of experience and recall accuracy
- New example for episodic memory
- Refined definitions for these terms:
  - chunks
  - engram
  - flashbulb memories
  - schemas
  - decay
  - proactive interference
  - retroactive interference
  - retrograde amnesia

- Interference and eyewitness recall
- Memory aided by more extreme font size of material
- Google effect on memory
- Saying names aloud as a means to enhance memory

#### Chapter 8—Cognition and Language

- Artificial intelligence and Watson, the computer
- Familiarity heuristic
- Combining divergent and convergent thinking in training creativity
- Linguistic-relativity hypothesis evidence
- Advantages of bilingualism in cognitive development
- Bilingualism and cognitive declines in late adulthood
- Brain structure and creativity
- Brain processing and bilingualism

- Refined definition for these terms:
  - thinking
  - confirmation bias
  - convergent and divergent thinking
- Brain processing and categorization
- Removed language acquisition device
- Computer-mediated problem solving

#### Chapter 9—Intelligence

- Refined definition of these terms:
  - fluid intelligence
  - intelligence quotient
- Relationship between use of Internet and intelligence
- New material on savant
- Replaced “mental retardation” with “intellectual disabilities”
- Refined material on heritability
- Adaptive testing criticisms

#### Chapter 10—Motivation and Emotion

- Self-regulation in people with bulimia
- New definition of drive-reduction theory
- Binge eating in males
- Clarified definition of need for achievement
- Obesity increases and projections
- Weight-loss strategy of getting support of others
- Wireless monitors for weight loss
- Computer facial expression recognition

#### Chapter 11—Sexuality and Gender

- Sexting
- Sexual chemistry
- Refined distinction between sex and gender
- Refined definition of these terms:
  - glass ceiling
  - benevolent sexism
- Deleted stereotype threat concept
- Female orgasm during intercourse
- Incidence of STIs

#### Chapter 12—Development

- Cloning
- Germline therapy
- Behavioral genetics
- Emotion recognition in infancy
- Refined definition of temperament
- Clarified principle of conservation
- Clarified zone of proximal development
- Use of social media in adolescence
- Involvement with Internet in young children

#### Chapter 13—Personality

- Changes in narcissism trait
- Refined definition and explanation of defense mechanism
- Refined term inferiority complex
- Refined description of learning approaches to personality
- Replaced definition of self-efficacy
- Refined definition of temperament
- Risk-taking behavior

#### Chapter 14—Health Psychology: Stress, Coping, and Well-Being

- Lingering effects of PTSD/terrorist attacks
- Adolescent smokers’ brain activity
- Benefits of adversity on future coping capabilities
- Clarified psychophysiological disorders
- Creative nonadherence refined
- Redefined subjective well-being
- Literacy skills and compliance
- Biological and genetic underpinnings of resilience
- Drug compliance statistics
- Emotional timeline of 9/11
- Witnessing aggression and PTSD
- Resilience and optimism
- Training physicians in communication skills

#### Chapter 15—Psychological Disorders

- Clarified medical perspective
- Rising incidence of disorders in college student populations

- Refined cognitive perspective
- Clarified sociocultural perspective
- Refined definition of anxiety disorder
- Refined explanation of conversion disorder
- Clarified expressed emotion
- Clarified predisposition model of schizophrenia
- Impulsive Internet use
- Updated universality of *DSM* designations across cultures
- Anorexia in Hong Kong

#### Chapter 16—Treatment of Psychological Disorders

- Drug treatment to erase anxiety-provoking memories
- Treatment for depression via the web
- Therapy through teleconferencing
- Clarified what an internship is for clinical psychologists
- Redefined repression
- Clarified psychoanalysis
- Redefined dialectical behavior therapy

#### Chapter 17—Social Psychology

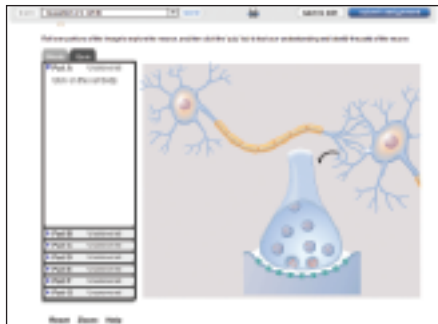
- Communication of social norms through social media
- Accessing attitude change via technology
- Using appropriate language when fighting
- Intervention to increase the social-belonging of minority students
- Refined these terms:
  - central and peripheral route processing
  - cognitive dissonance
  - attribution theory
- Moral decisions and brain activity
- Clarified social pressure
- Clarified definition of diffusion of responsibility

## ENGAGING, INFORMING, AND EXCITING STUDENTS ABOUT PSYCHOLOGY

No matter what brings students into the introductory course and regardless of their initial motivation, *Understanding Psychology*, Eleventh Edition, is designed to draw students into the field and stimulate their thinking. By focusing on *students first* and connecting with them, the text promotes student success by engaging their attention and informing them about the field, which results in students learning the course content and becoming excited about the field of psychology.

# Ways of Connecting with Today's Students

Today's students are as different from the learners of the last generation as today's discipline of psychology is different from the field 30 years ago. Students now learn in multiple modalities; rather than sitting down and reading traditional printed chapters in linear fashion from beginning to end, their work preferences tend to be more visual and more interactive, and their reading and study often occur in short bursts. For many students, a traditionally formatted printed textbook is no longer enough when they have instant access to news and information from around the globe.



**CONNECT PSYCHOLOGY** McGraw-Hill's Connect Psychology responds to today's students by offering a wealth of interactive course materials for both instructors and students. Videos, interactive assessments, and simulations invite engagement and add real-world perspective to the introductory psychology course. Detailed reporting helps the student and instructor gauge comprehension and retention—*without adding administrative load*.

**LEARNSMART** How many students *think* they know what they know but struggle on the first exam? LearnSmart is McGraw-Hill's adaptive learning system. It identifies students' metacognitive abilities and limitations, identifying what they know—and more importantly, what they don't know. Using Bloom's Taxonomy and a sophisticated "smart" algorithm, LearnSmart creates a customized study plan, unique to every student's demonstrated needs. With virtually no administrative overhead, instructors using LearnSmart are reporting an increase in student performance by one letter grade or more.



# Ways of Engaging Students

**Prologue The Power of Meditation**



Lynn Blakes, 39, a language test developer, has had three bouts of depression and says meditation helps prevent a relapse.

"I first suffered depression 13 years ago following the death of my mother and it returned seven years ago when I was working as a teacher. It was a stressful job and I wasn't looking after myself. On both occasions I was prescribed antidepressants, which were effective, but I don't want to rely on drugs.

"I've always been interested in meditation and have used it to help me relax so I enrolled in a course in mindfulness meditation. I learned how to focus on my breathing and to spend time thinking about everyday things such as the sound of birds. You can even focus on brushing your teeth to help switch off. It soon becomes second nature" (Lee, 2010, p. 33).

## Looking Ahead

Lynn Blakes discovered that meditation, a technique for focusing attention, helped her relieve her daily life stress enough to prevent a relapse of her depression. Meditation is one of a number of methods people can use to alter their state of consciousness. It is an experience that many people find relaxing and pleasurable. Why this is so, what conscious experience is, and how and why we can alter it are some of the questions we address as we turn our attention to the study of consciousness.

**Consciousness** is the awareness of the sensations, thoughts, and feelings we experience at a given moment. Consciousness is our subjective understanding of both the environment around us and our private internal world, unobservable to outsiders. In *waking consciousness*, we are awake and aware of our

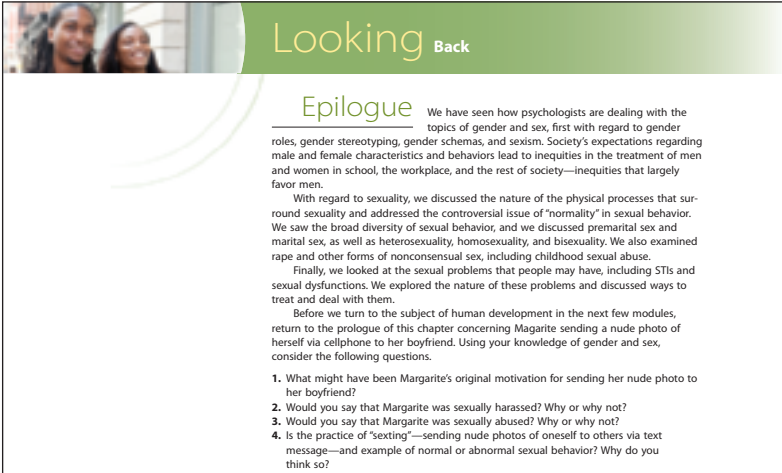
Instead, they argue that several approaches permit the scientific study of consciousness. For example, behavioral neuroscientists can measure brain-wave patterns under conditions of consciousness ranging from sleep to waking to hypnotic trances. And new understanding of the chemistry of drugs such as marijuana and alcohol has provided insights into the way they produce their pleasurable—as well as adverse—effects (Mosher & Akins, 2007; Baars & Seth, 2009; Wells, Phillips, & McCarthy, 2011).

Yet how humans experience consciousness remains an open question. Some psychologists believe that the experience of consciousness is produced by a quantitative increase in neuronal activity that occurs throughout the brain. For

**PROLOGUE** Each chapter starts with an account of a real-life situation that demonstrates the relevance of basic principles and concepts of psychology to pertinent issues and problems. These prologues depict well-known people and events.

**LOOKING AHEAD** This section ties each prologue to the key themes and issues discussed in the subsequent modules.





**Looking Back**

**Epilogue** We have seen how psychologists are dealing with the topics of gender and sex, first with regard to gender roles, gender stereotyping, gender schemas, and sexism. Society's expectations regarding male and female characteristics and behaviors lead to inequities in the treatment of men and women in school, the workplace, and the rest of society—inequities that largely favor men.

With regard to sexuality, we discussed the nature of the physical processes that surround sexuality and addressed the controversial issue of "normality" in sexual behavior. We saw the broad diversity of sexual behavior, and we discussed premarital sex and marital sex, as well as heterosexuality, homosexuality, and bisexuality. We also examined rape and other forms of nonconsensual sex, including childhood sexual abuse.

Finally, we looked at the sexual problems that people may have, including STIs and sexual dysfunctions. We explored the nature of these problems and discussed ways to treat and deal with them.

Before we turn to the subject of human development in the next few modules, return to the prologue of this chapter concerning Magarite sending a nude photo of herself via cellphone to her boyfriend. Using your knowledge of gender and sex, consider the following questions.

1. What might have been Magarite's original motivation for sending her nude photo to her boyfriend?
2. Would you say that Magarite was sexually harassed? Why or why not?
3. Would you say that Magarite was sexually abused? Why or why not?
4. Is the practice of "sexting"—sending nude photos of oneself to others via text message—and example of normal or abnormal sexual behavior? Why do you think so?

**EPILOGUE** Found at the end of every set of modules, critical thinking questions in the *Epilogue* relate to the *Prologue* at the opening of the set of modules. These thought-provoking questions illustrate how the concepts addressed in each module apply to the real-world situation described in the *Prologue*.

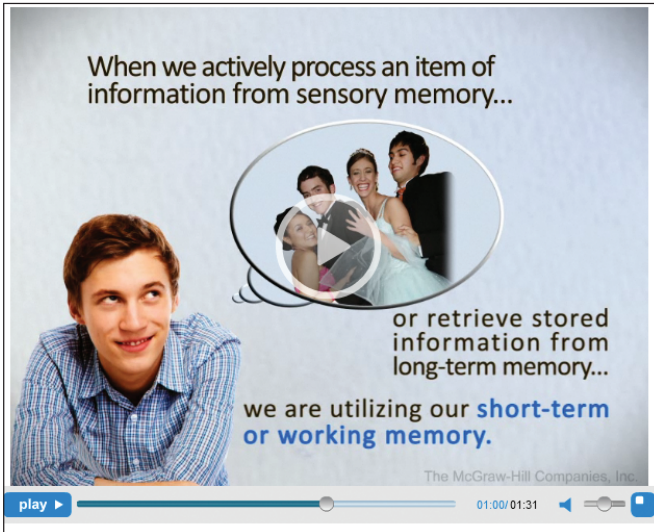
## Ways of Informing Students

**COMPREHENSIVE CONTENT COVERAGE** *Understanding Psychology* provides broad coverage of the field of psychology, including the theories, research, and applications that permeate the discipline. Along with the traditional areas of psychology (neuroscience, sensation and perception, states of consciousness, learning, memory, cognition, human development, personality, abnormal behavior and treatment, and social psychology), the applied topics of gender and sexuality (Chapter 11) and health psychology (Chapter 14) receive extensive attention.

**MODULAR ORGANIZATION** The text is organized into modules in which each of the 17 chapters is divided into three or four manageable, self-contained sections that include learning outcomes and assessment opportunities. Each module ends with questions that assess learning on both an outcome and more conceptual, higher-order level.

Rather than facing a long and potentially daunting chapter, students can study material in smaller chunks, which psychological research long ago found to be the optimal way to learn. Moreover, instructors can customize assignments for their students by asking them to read only those modules that fit their course outline and in the sequence that matches their syllabus. Alternatively, instructors who prefer to assign whole chapters can do so.

**CONCEPT CLIPS** Created by a team of instructional designers, "Concept Clips" help students comprehend some of the most difficult concepts in introductory psychology. Colorful graphics and stimulating animations break down core concepts in a step-by-step manner, engaging students and aiding in retention. Powered by Connect, "Concept Clips" can be used as a presentational tool for the classroom or can be used for student assessment.



When we actively process an item of information from sensory memory...

or retrieve stored information from long-term memory...

we are utilizing our **short-term or working memory.**

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**CONNECTION TO APA STUDENT COMPETENCIES** Conforming to recommendations of an American Psychological Association (APA) task force report on undergraduate student competencies (Board of Educational Affairs, 2002), every component of the text and its package is tied to specific psychological concepts and their application in everyday life. A chart indicating how the features of the textbook directly address the APA student competencies is provided in Figure 2. Equally important, every one of the thousands of test items in the Test Banks available to instructors and all the content in Connect Psychology are keyed to their corresponding APA competencies in a document that is available on the text website.

Book Feature	APA Learning Goals									
	Knowledge Base of Psychology	Research Methods in Psychology	Critical Thinking Skills in Psychology	Application of Psychology	Values in Psychology	Information and Technological Literacy	Communication Skills	Sociocultural and International Awareness	Personal Development	Career Planning and Development
Chapter Content	X	X	X	X	X	X	X	X	X	X
Prologue	X		X	X				X		
Looking Ahead	X	X	X		X					
Learning Outcomes	X		X	X				X		
Applying Psychology in the 21st Century	X	X		X				X	X	X
Exploring Diversity	X				X		X	X	X	
Neuroscience in Your Life	X	X	X	X						
PsychWork	X			X					X	X
PsychTech	X					X				
Running Glossary	X			X		X				
Becoming an Informed Consumer of Psychology	X	X		X	X		X		X	X
Study Alerts	X	X		X						
Recap/Evaluate/Rethink	X		X	X						
Epilogue	X		X	X				X		
Visual Summary	X	X	X	X	X	X	X	X	X	X
LearnSmart	X		X	X		X				

**FIGURE 2** This grid shows the relationship between the broad learning goals devised by the American Psychological Association and specific types of content in *Understanding Psychology*. In addition, each of the test items in the Test Bank for the book, consisting of nearly 4,000 individual, scorable items, is keyed to specific learning outcomes.

**LEARNING OUTCOMES** New to this edition, the book includes specific *Learning Outcomes* that are keyed to assessment benchmarks, including the Test Bank and online assessments. *Learning Outcomes* provide a framework for understanding, organizing, and ultimately learning the material, as well as assuring that students have achieved particular learning outcomes.

**VISUAL SUMMARIES** New to this edition, visual summaries conclude each chapter and tie the chapter concepts together visually. Each of the visual summaries provides a one-page overview of the material in the chapter, offering students a way of rethinking the material in another sensory modality. This innovative new feature will be particularly useful to students who prefer material presented in more graphic form.

### VISUAL SUMMARY 3 Neuroscience and Behavior

#### MODULE 7 Neurons: The Basic Element

**Neuron Structure**

**Neuron Function**

**Synapse**

Neurotransmitters

- Acetylcholine
- Serotonin
- Dopamine
- Endorphins

**Endocrine System**

#### MODULE 9 The Brain

**Areas of the Brain**

**The Central Core: "Old brain"**

- Cerebellum
- Reticular formation
- Thalamus
- Hypothalamus

**The Limbic System**

- Emotion
- Self-preservation
- Amygdala
- Hippocampus

**The Cerebral Cortex: "New brain"**

- Motor area: Voluntary movement
- Sensory area
  - Somatosensory area
  - Auditory area
  - Visual area
- Association areas
  - Executive functions
  - Personality

**Brain Features**

- Neuroplasticity
- Lateralization: Two hemispheres with specialized functions
- The Split Brain: Corpus callosum with independent hemispheric functions

#### MODULE 8 Nervous System

**Central Nervous System**

**Peripheral Nervous System**

**Somatic division**

- Sympathetic division: Fight-or-flight response
- Parasympathetic division: Calming response



## Exploring DIVERSITY

### Cross-Cultural Routes to Altered States of Consciousness

A group of Native-American Sioux men sit naked in a steaming sweat lodge as a medicine man throws water on sizzling rocks to send billows of scalding steam into the air.

Aztec priests smear themselves with a mixture of crushed poisonous herbs, hairy black worms, scorpions, and lizards. Sometimes they drink the potion.

During the 16th century, a devout Hasidic Jew lies across the tombstone of a celebrated scholar. As he murmurs the name of God repeatedly, he seeks to be possessed by the soul of the dead wise man's spirit. If successful, he will attain a mystical state, and the deceased's words will flow out of his mouth.

Each of these rituals has a common goal: suspension from the bonds of everyday awareness and access to an altered state of consciousness. Although they may seem exotic from the vantage point of many Western cultures, these rituals represent an apparently universal effort to alter consciousness (Bartocci, 2004; Irwin, 2006).

**EXPLORING DIVERSITY** In addition to substantial coverage of material relevant to diversity throughout the text, every set of modules also includes at least one special section devoted to an aspect of racial, ethnic, gender, or cultural diversity. These sections highlight the way in which psychology informs (and is informed by) issues relating to the increasing multiculturalism of our global society.

**STUDY ALERTS** Throughout the text, marginal notes point out especially important and difficult concepts and topics. These Study Alerts offer suggestions for learning the material effectively and for studying for tests. In Chapter 5, Module 14, for example, a Study Alert emphasizes the importance of differentiating the five stages of sleep; the feature in Module 15 makes clear the key issue about hypnosis—whether it represents a different state of consciousness or is similar to normal waking consciousness; and in Module 16 it highlights Figure 2 for its clear view of the different ways that drugs produce their effects at a neurological level.

### Study Alert

Differentiate the five stages of sleep (stage 1, stage 2, stage 3, stage 4, and REM sleep), which produce different brain-wave patterns.

Module 45 Promoting Health and Wellness 513

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**RECAP/EVALUATE/RETHINK**

**RECAP**

**LO 45-1** How do our interactions with physicians affect our health and compliance with medical treatment?

- Although patients would often like physicians to base a diagnosis only on a physical examination, communicating one's problem to the physician is equally important. (p. 508)
- Patients may find it difficult to communicate openly with their physicians because of physicians' high social prestige and the technical nature of medical information. (p. 508)

**LO 45-2** How does a sense of well-being develop?

- Subjective well-being, the measure of how happy people are, is highest in people with high self-esteem, a sense of control, optimism, and a supportive network of close relationships. (p. 510)

**EVALUATE**

- Health psychologists are most likely to focus on which of the following problems with health care?
  - Incompetent health-care providers
  - Rising health-care costs
  - Ineffective communication between physician and patient
  - Scarcity of medical research funding
- If you want people to floss more to prevent gum disease, the best approach is to
  - Use a negatively framed message
  - Use a positively framed message
  - Have a dentist deliver an encouraging message on the pleasures of flossing
  - Provide people with free dental floss
- Winning the lottery is likely to
  - Produce an immediate and long-term increase in the level of well-being
  - Produce an immediate but not lingering increase in the level of well-being
  - Produce a decline in well-being over the long run
  - Lead to an increase in greed over the long run

**RETHINK**

- Do you think stress plays a role in making communication between physicians and patients difficult? Why?
- From the perspective of a health-care provider: How would you try to better communicate with your patients? How might your techniques vary depending on the patient's background, gender, age, and culture?

**Answers to Evaluate Questions**      9 8 7 6 5 4 3 2 1

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**KEY TERMS**

subjective well-being p. 510

**RECAP/EVALUATE/RETHINK** Each module concludes with a Recap/Evaluate/Rethink section. The *Recap* sections review the concept questions found at the beginning of each module. *Evaluate* sections test recall of the material, assessing the degree of initial learning. The *Rethink* sections provide thought-provoking questions designed to provoke critical thinking about the material.



**RUNNING GLOSSARY** Key terms are highlighted in boldface type within the text where they are introduced, and definitions are given in the margin of the page, along with pronunciation guides for difficult words. To facilitate study, at the end of each module there is a list of the key terms and concepts introduced in that module. There is also a glossary of all key terms and concepts at the end of the book.

## Ways of Exciting Students and Helping Them Relate Psychology to Their World


**APPLYING PSYCHOLOGY IN THE 21ST CENTURY** These boxes—all new in this edition—highlight the relevance of psychology by presenting current and potential applications of psychological theory and research findings to real-world problems. For example, one box discusses the psychological principles that explain the dangers of texting while driving, while another highlights how artificial intelligence researchers are building “smarter” robots that have the potential to transform our daily lives.

**Applying Psychology** in the 21st Century

**Advertising in the Information Age: Aiming at Moving Targets**

As a middle-aged man browses a popular sports webpage on his smartphone, more than a dozen cameras monitor his every movement—particularly his eye movements. Other equipment monitors his skin temperature and heart rate, and numerous tiny muscle probes measure every nuance of his changing facial expressions. In a remote room, technicians closely monitor the data his movements produce in real time.

This isn't a scene from a futuristic science-fiction film—it's just an ordinary day at a private research lab owned by the Walt Disney Company. The research technicians are studying the effectiveness of online advertising. While Internet companies have long been investigating the kinds of online ads that successfully entice website users to click through, much less is known about why users *don't* respond. Are the ads failing to capture their attention? If so, what kinds of ads would work better to do that? Is it just a question of creating more vivid visuals, or do users quickly learn to ignore even the most eye-popping banners? Does the structure of the webpage itself make a difference? It's a delicate balance to design online ads that are maximally effective but not so intrusive as



watch televised ads. “You're seeing science move into the marketing sector in a big way,” said David Poltrack, chief research officer for CBS. Artie Bulgrin, ESPN's senior vice president of research, concurs: “We see this as a very powerful research and development tool for the entire Disney company. As ideas arise, we want to research them and have the results in the hands of our sales force as fast as possible,” he said (Barnes, 2009, p. 6).

The rapid evolution of Internet technology and the ever-changing ways in which people consume online content have far outpaced researchers' attempts to understand people's usage patterns and the most effective ways of introducing advertising into the mix. Private research labs of major stakeholders such as Disney are working frantically to keep up, but much work is yet to be done. For the most part, advertisers are still relying on methods that worked for older technology until newer media forms are better understood (Li & Leckenby, 2007).

Advertisers are researching how to harness the latest technologies to ensure that they are getting the greatest response for their efforts.

to turn viewers off (Lavrakas, Mane, & Joe, 2010; Hsieh & Chen, 2011).

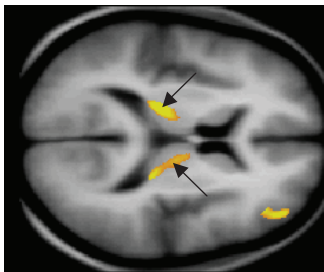
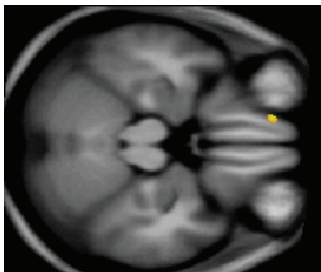
Advertising companies want to make sure they are getting the most response for their efforts. Rather than leave anything to chance, they are using the latest research methods to ensure that their ads have the intended impact—even going so far as to monitor people's brain activity as they

**RETHINK**

- Why do you think it's so difficult to design effective advertisements for online media?
- Why do you think researchers are keenly interested in users' physical responses as they consume online media?

### Neuroscience in Your Life: One Step Closer to Understanding OCD

**FIGURE 3** People with obsessive-compulsive disorder (OCD) have structural differences in their brains. These images show increased levels of gray matter (i.e., more connections or more neurons) in the thalamus (a) and in the left frontal cortex (b) in people with OCD as compared to people without it. These findings help us to understand the potential causes of OCD and may lead to the development of better treatments for the disorder. (Source: Christian et al., 2008, Figure 1.)

(a)
(b)

**NEUROSCIENCE IN YOUR LIFE** This updated feature, which appears in most chapters, emphasizes the importance of neuroscientific research within the various subfields of the discipline and in students' lives. Compelling brain scans, with both caption and textual explanation, illustrate significant neuroscientific findings that are increasingly influencing the field of psychology. For example, one *Neuroscience in Your Life* feature explains why being sleep deprived may affect us emotionally. Another shows what areas of the brain are affected by taking risks.

**BECOMING AN INFORMED CONSUMER OF PSYCHOLOGY** Every set of modules includes material designed to make readers more informed consumers of psychological information by giving them the ability to evaluate critically what the field of psychology offers. These discussions also provide sound, useful guidance concerning common problems.



## BECOMING AN INFORMED CONSUMER of Psychology

### Dealing Effectively with Anger

At one time or another, almost everyone feels angry. The anger may result from a frustrating situation, or it may be due to another individual's behavior. The way we deal with anger may determine the difference between a promotion and a lost job or a broken relationship and one that mends itself.

Social psychologists who have studied the topic suggest several good strategies to deal with anger that maximize the potential for positive consequences (Ellis, 2000; Nelson & Finch, 2000; Bernstein, 2011). Among the most useful strategies are the following:

- *Calm down.* Take a walk or engage in some other physical activity in order to cool down your emotional arousal.
- *Look again at the anger-provoking situation from the perspective of others.* By taking others' points of view, you may be able to understand the situation better, and with increased understanding you may become more tolerant of the apparent shortcomings of others.
- *Minimize the importance of the situation.* Does it really matter that someone is driving too slowly and that you'll be late to an appointment as a result? Reinterpret the situation in a way that is less bothersome.
- *Use language effectively by saying "I," not "you."* Don't say "You did \_\_\_\_ wrong." Instead, say "I felt hurt when you did \_\_\_\_." When you accuse people of being wrong, they are likely to feel the need to fight back.



**PSYCHINTERACTIVE** McGraw-Hill's NEW PsychInteractive allows students the opportunity to experience the scientific method as they learn to observe data, formulate and test a hypothesis, communicate their findings, and apply their understanding of psychology to the world. PsychInteractive is available through Connect.

**PSYCHTECH** Every chapter now includes new comments in the margin that point out how technology and psychology interact. These comments are designed to speak to today's Net Generation, students who use this technology 24/7.



### PsychTech

Although some people seem to use the Internet compulsively, psychologists have yet to agree on whether it represents a true psychological disorder.



### PsychWork ADVERTISING AGENCY CREATOR

**Name:** Vlad Kolarov  
**Education:** BA in Law, Sofia University, Sofia, Bulgaria

Over the years, businesses have used dozens of different ways to catch our attention and lure us into buying their products or services. For Vlad Kolarov, owner of the FunnySells.com advertising agency, humor is the best approach.

"Humor is universal. It makes us feel better. Everybody likes a good laugh, even people who say they do not have a sense of humor," he noted. "Companies that use humor in advertising campaigns generally enjoy a boost in the sales of their product and service. The trick, however, is creating a memorable, humorous advertising campaign. Humor and comedy, as a genre, are the toughest to master.

"When done correctly, companies can use it to create and maintain a brand identity; introduce a new product, service, or a change in the existing one; increase the buzz-value of the brand or the company; and increase sales," he added.

Using humor as a promotional tool can be beneficial but tricky as well, according to Kolarov.

"An advertising company needs to determine what the target audience is and determine the best way to present the advertised product or service. When things are not done correctly, they may have a reverse effect," he explained.

Is there anything that can't be promoted with humor?

"I'd like to say no, but the fact is there are products I personally will choose not to advertise with humor. Then again, every rule has an exception. When done cleverly and tastefully, even things we consider impossible can become successful. In this business, as in life, one has to keep an open mind," Kolarov said.

**PSYCHWORK** *PsychWork* introduces students to different career paths to which an understanding of psychology leads. Each *PsychWork* profile illustrates people in a variety of occupations whose knowledge of psychology informs and enhances their work. Among the individuals profiled are a social worker, a nutritionist, a physical rehabilitation counselor, and an advertising executive, showing that psychology is all around us and important to many occupations.

**NEWSFLASH** By connecting psychology to students' own lives, concepts become more relevant and understandable. Powered by McGraw-Hill's Connect, "News-flash" exercises tie current news stories to key psychological principles and learning objectives. After interacting with a contemporary news story, students are assessed on their ability to make the connection between real life and research findings. Many cases are revisited across chapters, encouraging students to consider multiple perspectives.

**ACCURATE CUSTOM MODULES** The text is now accompanied by a set of four custom modules that can be incorporated into custom versions of the text. These modules are titled *Diversity and Culture*, *Forensic Psychology*, *Industrial/Organizational Psychology*, and *Sustainability/Environmental Psychology*.

## Integrated Learning System

Resources available for use with this text support both new and veteran instructors, whether they favor traditional text-based instruction or a blend of traditional and electronic media. The Eleventh Edition text and support materials provide complementary experiences for instructors and students.

**Blackboard** Through McGraw-Hill's partnership with Blackboard, *Understanding Psychology*, Eleventh Edition, offers an ideal integration of content and tools:

- Seamless gradebook between Blackboard and Connect
- Single sign-on providing seamless integration between McGraw-Hill content and Blackboard
- Simplicity in assigning and engaging your students with course materials

**Create** Craft your teaching resources to match the way you teach. With McGraw-Hill **Create**, [www.mcgrawhillcreate.com](http://www.mcgrawhillcreate.com), you can easily rearrange chapters, combine material from other content sources, and quickly upload content you have written, such as your course syllabus or teaching notes. Find the content you need in Create by searching through thousands of leading McGraw-Hill textbooks. Arrange your book to fit your teaching style. Create even allows you to personalize your book's appearance by selecting the cover and adding your name, school, and course information. Order a Create book and you'll receive a complimentary print review copy in 3 to 5 business days or a complimentary electronic review copy (eComp) via e-mail in about an hour. Go to [www.mcgrawhillcreate.com](http://www.mcgrawhillcreate.com) today and register. Experience how McGraw-Hill Create empowers you to teach *your* students *your* way.

**Tegrity Campus** **Tegrity Campus** is a service that makes class time available all the time by automatically capturing every lecture in a searchable format for students to review when they study and complete assignments. With a simple one-click start-and-stop process, users capture all computer screens and corresponding audio. Students replay any part of any class with easy-to-use browser-based viewing on a PC or Mac. Educators know that the more students can see, hear, and experience class resources, the better they learn. With Tegrity Campus, students quickly recall key moments by using its unique search feature. This search helps students efficiently find what they need, when they need it, across an entire semester of class recordings. Help turn all your students' study time into learning moments immediately supported by your lectures.

**CourseSmart** This text is available as an e-textbook at [www.CourseSmart.com](http://www.CourseSmart.com). At **CourseSmart** your students can take advantage of significant savings off the cost of a print textbook, reduce their impact on the environment, and gain access to powerful web tools for learning. CourseSmart e-textbooks can be viewed online or

downloaded to a computer. The e-textbooks allow students to do full-text searches, add highlighting and notes, and share comments with classmates. CourseSmart has the largest selection of e-textbooks available anywhere. Visit [www.CourseSmart.com](http://www.CourseSmart.com) to learn more and to try a sample chapter.

**Online Learning Center** The password-protected instructor side of the Online Learning Center ([www.mhhe.com/feldmanup11e](http://www.mhhe.com/feldmanup11e)) contains the Instructor's Manual, Test Bank files, PowerPoint slides, Image Gallery, and other valuable material to help you design and enhance your course.

**Instructor's Manual** This comprehensive guide provides all the tools and resources instructors need to present and enhance their introductory psychology course. It contains detailed lecture launchers, learning objectives, interesting lecture and media presentation ideas, student assignments, and handouts. The many tips and activities in this manual can be used with any class, regardless of size or teaching approach.

**Test Banks** Our new test banks incorporate the new content in *Understanding Psychology*, Eleventh Edition. Each test bank contains more than 2,000 multiple-choice items, classified by cognitive type and level of difficulty and keyed to the appropriate learning outcome and page in the textbook. Moreover, each of the thousands of test items is keyed to the APA core psychology competencies. All questions are compatible with EZ Test, McGraw-Hill's Computerized Test Bank program.

**Image Gallery.** More than 100 figures from the text can be downloaded from the Image Gallery on the Instructor's Online Learning Center.

**PowerPoint Presentations** by Cathy Hunt of Pennsylvania State University. These presentations cover the key points of each chapter and include charts and graphs from the text. They can be used as is, or you may modify them to meet your specific needs.

## Acknowledgments

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One of the central features of *Understanding Psychology* is the involvement of both professionals and students in the review process. The Eleventh Edition of *Understanding Psychology* has relied heavily—and benefited substantially—from the advice of instructors and students from a wide range of backgrounds.

I am extraordinarily grateful to the following reviewers, who provided their time and expertise to help insure that *Understanding Psychology*, Eleventh Edition, reflects the best that psychology has to offer.

### REVIEWERS

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Many teachers along my educational path have shaped my thinking. I was introduced to psychology at Wesleyan University, where several committed and inspiring teachers—and in particular Karl Scheibe—conveyed their sense of excitement about the field and made its relevance clear to me. Karl epitomizes the teacher-scholar combination to which I aspire, and I continue to marvel at my good fortune in having such a role model.

By the time I left Wesleyan I could envision no other career but that of psychologist. Although the nature of the University of Wisconsin, where I did my graduate work, could not have been more different from the much smaller Wesleyan, the excitement and inspiration were similar. Once again, a cadre of excellent teachers—led, especially, by the late Vernon Allen—molded my thinking and taught me to appreciate the beauty and science of the discipline of psychology.

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**Robert S. Feldman**  
Amherst, Massachusetts



# Making the Grade: A Practical Guide

No matter why you are taking introductory psychology, it's a safe bet you're interested in maximizing your understanding of the material and getting a good grade. And you want to accomplish these goals as quickly and efficiently as possible.

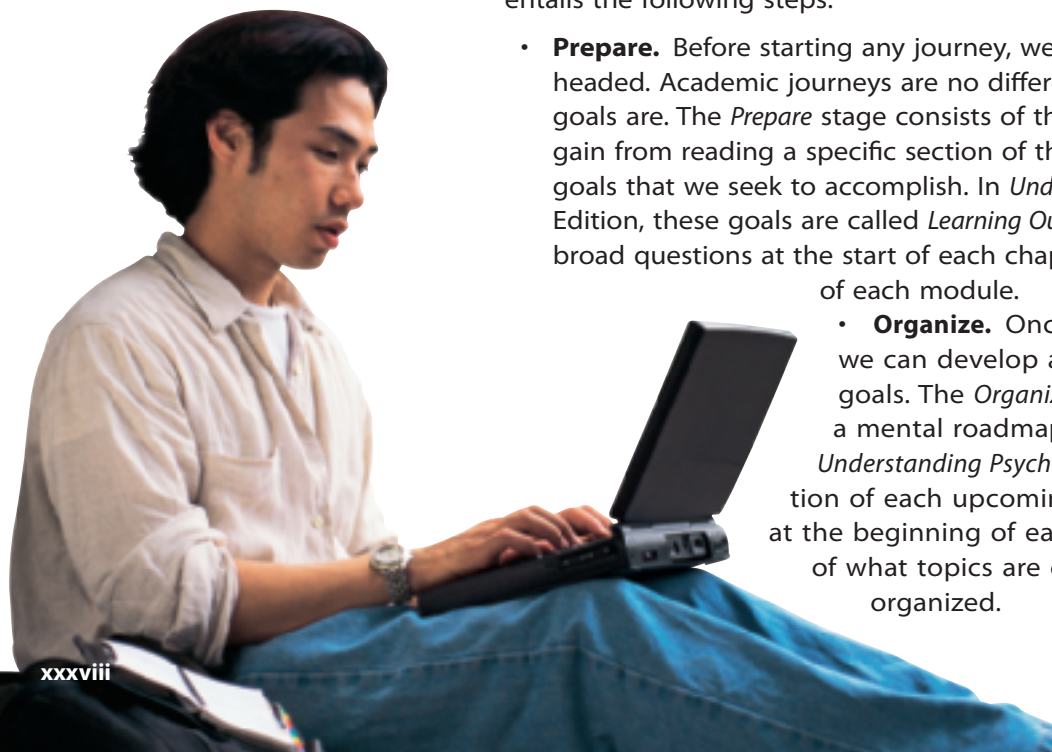
Good news: You're taking the right course, and you're learning the right material. Several subfields of psychology have identified a variety of guidelines and techniques that will help you learn and remember material not only related to psychology, but also relevant to every other discipline that you will study. Here's my guarantee to you: If you learn and follow the guidelines in each of these areas, you'll become a better student and get better grades. Always remember that *good students are made, not born*.

## Adopt a General Study Strategy

Let's begin with a brief consideration of a general study strategy. Psychologists have devised several excellent (and proven) techniques for improving study skills, two of which are described here: "P.O.W.E.R.," or *Prepare, Organize, Work, Evaluate, and Rethink*; and "SQ3R," or *Survey, Question, Read, Recite, and Review*. By employing one of these two procedures, you can increase your ability to learn and retain information and to think critically.

**P.O.W.E.R.** The *P.O.W.E.R.* learning strategy systematizes the acquisition of new material by providing a learning framework. It stresses the importance of learning objectives and appropriate preparation before you begin to study as well as the significance of self-evaluation and the incorporation of critical thinking into the learning process. Specifically, use of the *P.O.W.E.R.* learning system entails the following steps:

- **Prepare.** Before starting any journey, we need to know where we are headed. Academic journeys are no different; we need to know what our goals are. The *Prepare* stage consists of thinking about what we hope to gain from reading a specific section of the text by identifying specific goals that we seek to accomplish. In *Understanding Psychology*, Eleventh Edition, these goals are called *Learning Outcomes* and are presented as broad questions at the start of each chapter and again at the beginning of each module.
- **Organize.** Once we know what our goals are, we can develop a route to accomplish those goals. The *Organize* stage involves developing a mental roadmap of where we are headed. *Understanding Psychology* highlights the organization of each upcoming chapter. Read the outline at the beginning of each chapter to get an idea of what topics are covered and how they are organized.



# to Smarter Studying

- **Work.** The key to the P.O.W.E.R. learning system is actually reading and studying the material presented in the book. In some ways *Work* is the easy part because, if you have carried out the steps in the preparation and organization stages, you'll know where you're headed and how you'll get there. Remember, the main text isn't the only material that you need to read and think about. It's also important to read the boxes and the material in the margins in order to gain a full understanding of the material.
- **Evaluate.** The fourth step, *Evaluate*, provides the opportunity to determine how effectively you have mastered the material. In *Understanding Psychology*, a series of questions at the end of each module permits a rapid check of your understanding of the material. Quizzes on the book's website provide additional opportunities to test yourself. Evaluating your progress is essential to assessing your degree of mastery of the material.
- **Rethink.** The final step in the P.O.W.E.R. learning system requires that you think critically about the content. Critical thinking entails re-analyzing, reviewing, questioning, and challenging assumptions. It affords you the opportunity to consider how the material fits with other information you have already learned. Every major section of *Understanding Psychology* ends with a *Rethink* section. Answering its thought-provoking questions will help you understand the material more fully and at a deeper level.

**SQ3R.** Use of the SQ3R learning system entails the following specific steps:

- **Survey.** The first step of the SQ3R method is to *survey* the material by reading the outlines that open each module, the headings, figure captions, recaps, and Looking Ahead and Looking Back sections, providing yourself with an overview of the major points of the chapter.
- **Question.** The next step—the “Q”—is to *question*. Formulate questions about the material, either aloud or in writing, prior to actually reading a section of text. The questions posed at the beginning of each module and the *Evaluate* and *Rethink* questions that end each part of the chapter are examples.
- **Read.** Read carefully and, even more importantly, read actively and critically. While you are reading, answer the questions you have asked yourself. Critically evaluate material by considering the implications of what you are reading, thinking about possible exceptions and contradictions, and examining underlying assumptions.
- **Recite.** This step involves describing and explaining to yourself (or to a friend) the material you have just read and answering the questions you have posed earlier. Recite aloud; the recitation process helps to

identify your degree of understanding of the material you have just read.

- **Review.** In this final step, review the material, looking it over, reading the Epilogue summaries, the Visual Concept Maps, and answering the in-text review questions.

## Manage Your Time

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Without looking up from the page, answer this question: What time is it?

Most people are pretty accurate in their answer. And if you don't know for sure, it's very likely that you can find out quickly.

Managing your time as you study is a central aspect of academic success. But remember: The goal of time management is not to schedule every moment so we become pawns of a timetable that governs every waking moment of the day. Instead, the goal is to permit us to make informed choices about how we use our time. Rather than letting the day slip by, largely without our awareness, the time management procedures we'll discuss can make us better able to harness time for our own ends.

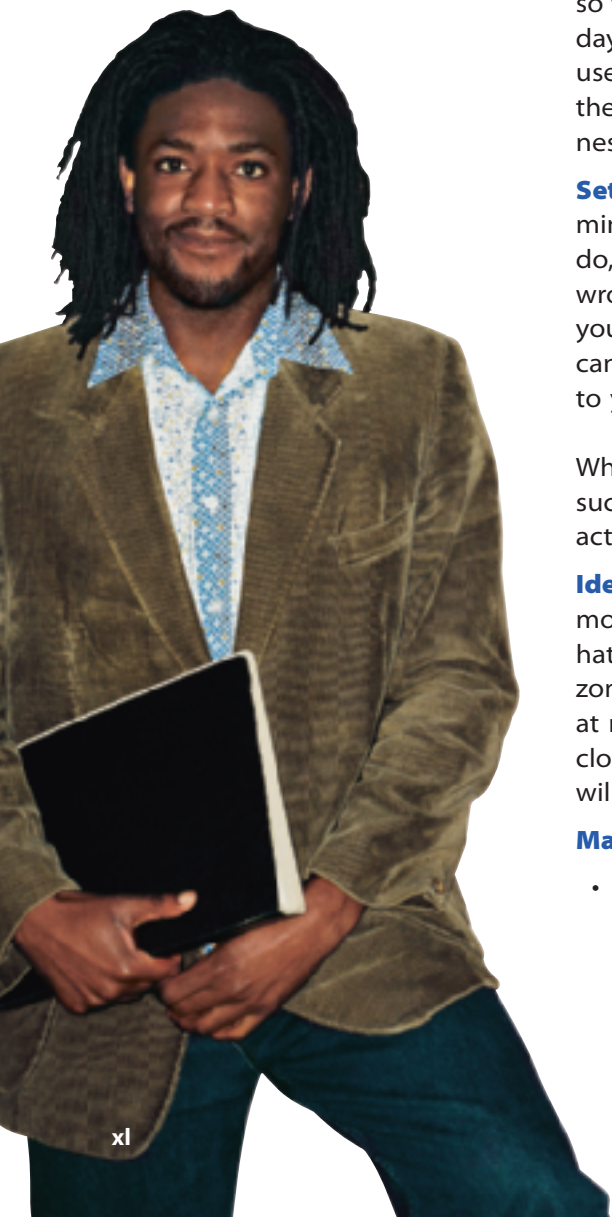
**Set Your Priorities.** To figure out the best use of your time, you need to determine your priorities. *Priorities* are the tasks and activities you need and want to do, rank-ordered from most important to least important. There are no right or wrong priorities; maybe spending time on your studies is most important to you, or maybe your top priority is spending time with your family. Only you can decide. Furthermore, what's important to you now may be less of a priority to you next month, next year, or in 5 years.

The best procedure is to start off by identifying priorities for an entire term. What do you need to accomplish? Don't just choose obvious, general goals, such as "passing all my classes." Instead, think in terms of specific, measurable activities, such as "studying 10 hours before each chemistry exam."

**Identify Your Prime Time.** Do you enthusiastically bound out of bed in the morning, ready to start the day and take on the world? Or is the alarm clock a hated and unwelcome sound that jars you out of pleasant slumber? Are you zombie-like by 10 at night, or are you a person who is just beginning to rev up at midnight? Each of us has his or her own style based on some inborn body clock. Being aware of the time or times of day when you can do your best work will help you plan and schedule your time most effectively.

**Master the Moment.** Here's what you'll need to organize your time:

- A *master calendar* that shows all the weeks of the term on one page. It should include every week of the term and seven days per week. Using your class syllabus, on the master calendar note the due date of every assignment and test you will have. Pencil in tentative assignments on the appropriate date. Also include important activities from your personal life,



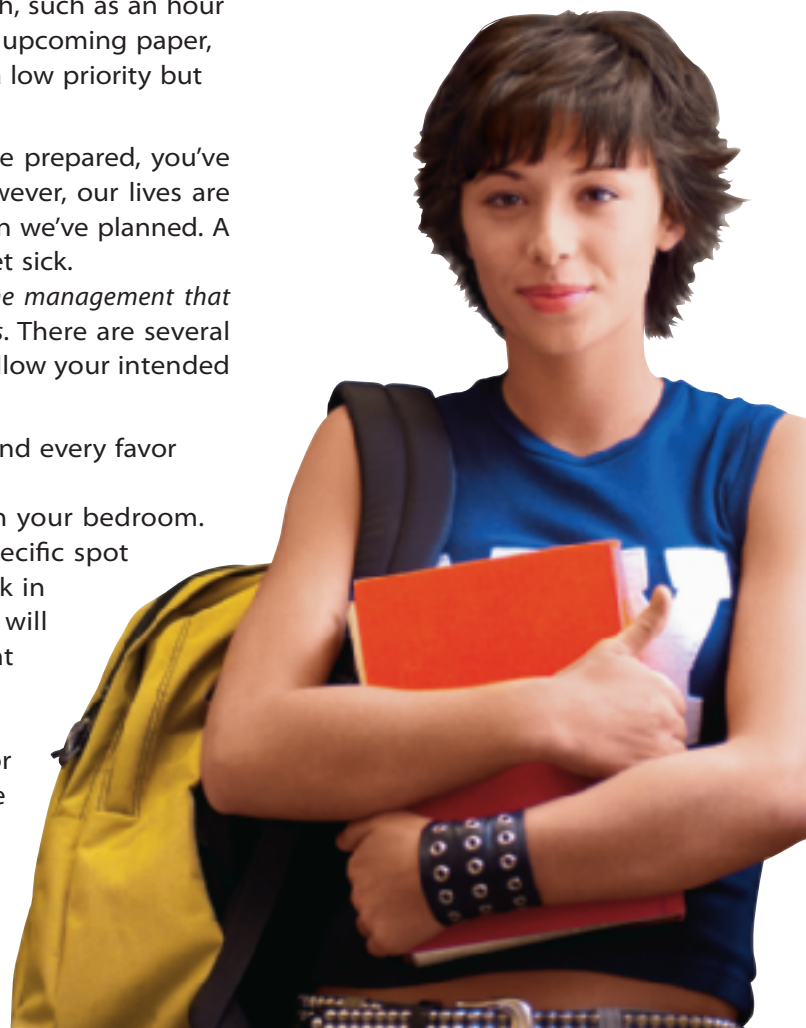
drawn from your list of priorities. And don't forget to schedule some free time for yourself.

- *A weekly timetable*, a master grid with the days of the week across the top and the hours, from 6:00 a.m. to midnight, along the side. Fill in the times of all your fixed, prescheduled activities—the times that your classes meet, when you have to be at work, the times you have to pick up your child at day care, and any other recurring appointments. Add assignment due dates, tests, and any other activities on the appropriate days of the week. Then pencil in blocks of time necessary to prepare for those events.
- *A daily to-do list*. Create your daily to-do list on a small, portable calendar that includes a separate page for each day of the week, or use your smartphone. List all the things that you intend to do during the next day and their priority. Start with the things you know you *must* do and that have fixed times, such as classes, work schedules, and appointments. Then add in the other things that you *should* accomplish, such as an hour of study for an upcoming test, work on research for an upcoming paper, or finishing up a lab report. Finally, list things that are a low priority but enjoyable, like taking in a new movie.

**Control Your Time.** If you follow the schedules that you've prepared, you've taken the most important steps in time management. However, our lives are filled with surprises: Things always seem to take longer than we've planned. A crisis occurs, buses are late, computers break down, kids get sick.

*The difference between effective time management and time management that doesn't work lies in how well you deal with the inevitable surprises.* There are several ways to take control of your days and permit yourself to follow your intended schedule:

- **Just say no.** You don't have to agree to every request and every favor that others ask of you.
- **Get away from it all.** Go to the library. Lock yourself in your bedroom. Find an out-of-the-way unused classroom. Adopt a specific spot as your own, such as a corner desk in a secluded nook in the library. If you use it enough, your body and mind will automatically get into study mode as soon as you seat yourself at it.
- **Enjoy the sounds of silence.** Although many students insist they accomplish most while a television, radio, or CD is playing, scientific studies suggest otherwise—we are able to concentrate most when our environment is silent. Experiment and work in silence for a few days. You may find that you get more done in less time than you would in a more distracting environment.







- **Take an e-break.** We may not control when communications arrive, but we can make the messages wait until we are ready to receive them. Take an e-break and shut down your communication sources for some period of time. Phone calls can be stored on voice-mail systems; text messages, IMs, and e-mail can be saved on a phone or computer. They'll wait.
- **Expect the unexpected.** You'll never be able to escape from unexpected interruptions and surprises that require your attention. But by trying to anticipate them in advance and thinking about how you'll react to them, you'll be positioning yourself to react more effectively when they do occur.

## Read Your Textbook Effectively

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Reading a textbook is different from reading for pleasure. With textbooks, you have specific goals: understanding, learning, and ultimately recalling the information. There are several steps you can take to achieve these goals:

- **Read the front matter.** If you'll be using a text extensively throughout the term, start by reading the preface and/or introduction and scanning the table of contents—what publishers call the *front matter*. It is there that the author has a chance to explain, often more personally than elsewhere in the text, what he or she considers important. Knowing this will give you a sense of what to expect as you read. (Note: You're reading part of the front matter at this very moment!)
- **Identify your personal objectives.** Before you begin an assignment, think about what your specific objectives are. Will you be reading a textbook on which you'll be thoroughly tested? Or, will your reading provide background information for future learning that won't itself be tested? Is the material going to be useful to you personally? Your objectives for reading will help you determine which reading strategy to adopt and how much time you can devote to the reading assignment. You aren't expected to read everything with the same degree of intensity. You may feel comfortable skimming some material. You'll want to put in the maximum effort into other material.
- **Identify and use the advance organizers.** The next step in reading a textbook is to become familiar with the *advance organizers*—outlines, overviews, section objectives, or other clues to the meaning and organization of new material—provided in the material you are reading. Look at the start of every chapter in this book, which includes a chapter outline plus a set of learning outcome questions. You can also create your own advance organizers by skimming material to be read and sketching out the general



outline of the material you'll be reading. These steps can help you recall material better after you've read it.

- **Stay focused as you read.** There are a million and one possible distractions that can invade your thoughts as you read. Your job is to keep distracting thoughts at bay and focus on the material you are supposed to be reading. Here are some things you can do to help yourself stay focused:
  - **Read in small bites.** If you think it is going to take you 4 hours to read an entire chapter, break up the 4 hours into more manageable time periods. Promise yourself that you'll read for 1 hour in the afternoon, another hour in the evening, and the next 2 hours spaced out during the following day.
  - **Take a break.** Actually plan to take several short breaks to reward yourself while you're reading. During your break, do something enjoyable—eat a snack, watch a bit of a ball game on television, play a video game, or the like. Just try not to get drawn into your break activity to the point that it takes over your reading time.
- **Highlight and take notes as you read.** Highlighting and taking notes as you read a textbook are essential activities. Good annotations can help you learn and review the information prior to tests as well as help you to stay focused as you read. There are several things you can do to maximize the effectiveness of your notes:
  - **Rephrase key points.** Make notes to yourself, in your own words, about what the author is trying to get across. Don't just copy what's been said. Think about the material, and rewrite it in words that are your own. The very act of writing engages an additional type of perception that involves the physical sense of moving a pen or pressing a keyboard.
  - **Highlight or underline key points.** Often the first or last sentence in a paragraph, or the first or last paragraph in a section, will present a key point. Before you highlight anything, though, read the whole paragraph through. Then you'll be sure that what you highlight is, in fact, the key information. You should find yourself highlighting only one or two sentences or phrases per page. *In highlighting and underlining, less is more.* One guideline: No more than 10% of the material should be highlighted or underlined.
  - **Use arrows, diagrams, outlines, tables, timelines, charts, and other visuals to help you understand and later recall what you are reading.** If three examples are given for a specific point, number them. If a



sequence of steps is presented, number each step. If a paragraph discusses a situation in which an earlier point does not hold, link the original point to the exception by an arrow. Representing the material graphically will get you thinking about it in new and different ways. The act of creating visual annotations will not only help you to understand the material better, but will also ease its later recall.

- **Look up unfamiliar words.** Even though you may be able to figure out the meaning of an unfamiliar word from its context, look up unfamiliar words in a dictionary or online. You'll also find out what the word sounds like, which will be important if your instructor uses the word in class.

## Take Good Notes in Class



Perhaps you know students who manage to write down nearly everything their instructors say in class. And perhaps you have thought to yourself, “If only I took such painstaking notes, I’d do much better in my classes.” Contrary to what many students think, however, good notetaking does not mean writing down every word that an instructor utters. With notetaking, less is often more. Let’s consider some of the basic principles of notetaking:

- **Identify the instructor’s—and your—goals for the course.** On the first day of class, most instructors talk about their objectives for the course. Most review the information on the class syllabus, the written document that explains the assignments for the semester. The information you get during that first session and through the syllabus is critical. In addition to the instructor’s goals, you should have your own. What is it you want to learn from the course? How will the information from the course help you to enhance your knowledge, improve yourself as a person, achieve your goals?
- **Complete assignments before coming to class.** Your instructor enthusiastically describes the structure of the neuron, recounting excitedly how electrons flow across neurons, changing their electrical charge. One problem: You have only the vaguest idea what a neuron is. And the reason you don’t know is that you haven’t read the assignment.

Chances are you have found yourself in this situation at least a few times, so you know firsthand that sinking feeling as you become more and more confused. The moral: Always go to class prepared. Instructors assume that their students have done what the instructors assigned, and their lectures are based on that assumption.

- **Choose a notebook that assists in notetaking.** Loose-leaf notebooks are especially good for taking notes because they permit you to go back later and change the order of the pages or add additional material. Whatever kind of notebook you use, *use only one side of the page for writing; keep one side free of notes.* There may be times that you'll want to spread out your notes in front of you, and it's much easier if no material is written on the back of the pages.

Walter Pauk devised what is sometimes called the Cornell Method of Notetaking. Using this method, draw a line down the left side of your notebook page, about 2½ inches from the left-hand margin. Keep the notes you write in class to the right of the line. Indent major supporting details beneath each main idea, trying to use no more than one line for each item, and leave space between topics to add information. When it comes time to review your notes later, you'll be able to jot down a keyword, catch phrase, or major idea on the left side of the page (Pauk, 2007).

- **Listen for the key ideas.** Not every sentence in a lecture is equally important. One of the most useful skills you can develop is separating the key ideas from supporting information. Good lecturers strive to make just a few main points. The rest of what they say consists of explanation, examples, and other supportive material that expands upon the key ideas. To distinguish the key ideas from their support, you need to be alert and always searching for the *meta-message* of your instructor's words—that is, the underlying main ideas that a speaker is seeking to convey.

How can you discern the meta-message? One way is to *listen for key words*. Phrases like “you need to know . . .,” “the most important thing that must be considered . . .,” “there are four problems with this approach . . .,” and—a big one—“this will be on the test . . .” should cause you to sit up and take notice. Also, if an instructor says the same thing in several ways, it's a clear sign that the material being discussed is important.

- **Use short, abbreviated phrases—not full sentences when taking notes.** Forget everything you've ever heard about always writing in full sentences. In fact, it's often useful to take notes in the form of an outline. An outline summarizes ideas in short phrases and indicates the relationship among concepts through the use of indentations.

- **Pay attention to what is written on the board or projected from PowerPoint slides. Remember these tips:**
  - **Listening is more important than seeing.** The information that your instructor projects on screen, while important, ultimately is less critical than what he or she is saying. Pay primary attention to the spoken word and secondary attention to the screen.
  - **Don't copy everything that is on every slide.** Instructors can present far more information on their slides than they would if they were writing on a blackboard. Oftentimes there is so much information that it's impossible to copy it all down. Don't even try. Instead, concentrate on taking down the key points.
  - **Remember that key points on slides are . . . key points.** The key points (often indicated by bullets) often relate to central concepts. Use these points to help organize your studying for tests, and don't be surprised if test questions directly assess the bulleted items on slides.
  - **Check to see if the presentation slides are available online.** Some instructors make their class presentations available to their students on the web, either before or after class time. If they do this before class, print them out and bring them to class. Then you can make notes on your copy, clarifying important points. If they are not available until after a class is over, you can still make good use of them when it comes time to study the material for tests.
  - **Remember that presentation slides are not the same as good notes for a class.** If you miss a class, don't assume that getting a copy of the slides is sufficient. Studying the notes of a classmate who is a good notetaker will be far more beneficial than studying only the slides.

## Memorize Efficiently: Use Proven Strategies to Memorize New Materials

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Here's a key principle of effective memorization: Memorize what you need to memorize. *Forget about the rest.*

The average textbook chapter has some 20,000 words. But, within those 20,000 words, there may be only 30 to 40 specific concepts that you need to learn. And perhaps there are only 25 key words. *Those* are the pieces of information on which you should focus in your efforts to memorize. By extracting what is important from what is less crucial, you'll be able to limit the amount of the material that you need to recall. You'll be able to focus on what you need to remember.

You have your choice of dozens of techniques of memorization. As we discuss the options, keep in mind that no one strategy works by itself. Also, feel

free to devise your own strategies or add those that have worked for you in the past.

**Rehearsal.** Say it aloud: rehearsal. Think of this word in terms of its three syllables: re—hear—sal. If you're scratching your head about why you should do this, it's to illustrate the point of *rehearsal*: to transfer material that you encounter into long-term memory.

To test if you've succeeded in transferring the word "rehearsal" into your memory, put down this book and go off for a few minutes. Do something entirely unrelated to reading this book. Have a snack, catch up on the latest sports scores on ESPN, or read the front page of a newspaper. If the word "rehearsal" popped into your head when you picked up this book again, you've passed your first memory test—the word "rehearsal" has been transferred into your memory.

Rehearsal is the key strategy in remembering information. If you don't rehearse material, it will never make it into your memory. Repeating the information, summarizing it, associating it with other memories, and above all thinking about it when you first come across it will ensure that rehearsal will be effective in placing the material into your memory.

**Mnemonics.** This odd word (pronounced with the "m" silent—"neh MON ix") describes formal techniques used to make material more readily remembered. *Mnemonics* are the tricks-of-the-trade that professional memory experts use, and you too can use them to nail down the information you will need to recall for tests.

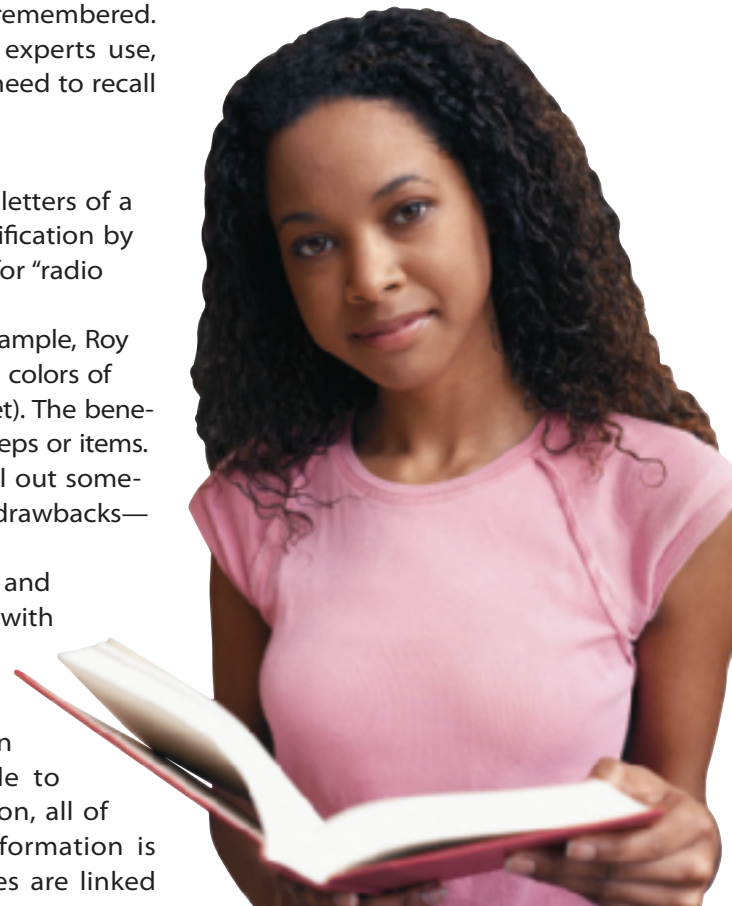
Among the most common mnemonics are the following:

- **Acronyms.** *Acronyms* are words or phrases formed by the first letters of a series of terms. The word "laser" is an acronym for "light amplification by stimulated emissions of radiation," and "radar" is an acronym for "radio detection and ranging."

Acronyms can be a big help in remembering things. For example, Roy G. Biv is a favorite of physics students who must remember the colors of the spectrum (red, orange, yellow, green, blue, indigo, and violet). The benefit of acronyms is that they help us to recall a complete list of steps or items.

- **Acrostics.** *Acrostics* are sentences in which the first letters spell out something that needs to be recalled. The benefits—as well as the drawbacks—of acrostics are similar to those of acronyms.
- **Rhymes and jingles.** "Thirty days hath September, April, June, and November." If you know the rest of the rhyme, you're familiar with one of the most commonly used mnemonic jingles in the English language.

**Use of Multiple Senses.** The more senses you can involve when you're trying to learn new material, the better you'll be able to remember. Here's why: Every time we encounter new information, all of our senses are potentially at work. Each piece of sensory information is stored in a separate location in the brain, and yet all the pieces are linked together in extraordinarily intricate ways.





What this means is that when we seek to remember the details of a specific event, recalling a memory of one of the sensory experiences can trigger recall of the other types of memories. You can make use of the fact that memories are stored in multiple ways by applying the following techniques:

- **When you learn something, use your body.** Don't sit passively at your desk. Instead, move around. Stand up; sit down. Touch the page. Trace figures with your fingers. Talk to yourself. Think out loud. By involving every part of your body, you've increased the number of potential ways to trigger a relevant memory later, when you need to recall it. And when one memory is triggered, other related memories may come tumbling back.
- **Draw and diagram the material.** Structuring written material by graphically grouping and connecting key ideas and themes is a powerful technique. When we draw and diagram material, one of the things we're doing is expanding the modalities in which information can be stored in our minds. Other types of drawing can be useful in aiding later recall. Creating drawings, sketches, and even cartoons can help us remember better.
- **Visualize.** You already know that memory requires three basic steps: the initial recording of information, the storage of that information, and, ultimately, the retrieval of the stored information. *Visualization* is a technique by which images are formed to ensure that material is recalled. Don't stop at visualizing images just in your mind's eye. Actually drawing what you visualize will help you to remember the material even better. Visualization is effective because it serves several purposes. It helps make abstract ideas concrete; it engages multiple senses; it permits us to link different bits of information together; and it provides us with a context for storing information.
- **Overlearning.** Lasting learning doesn't come until you have overlearned the material. *Overlearning* consists of studying and rehearsing material past the point of initial mastery. Through overlearning, recall becomes automatic. Rather than searching for a fact, going through mental contortions until perhaps the information surfaces, overlearning permits us to recall the information without even thinking about it.

## Test-Taking Strategies

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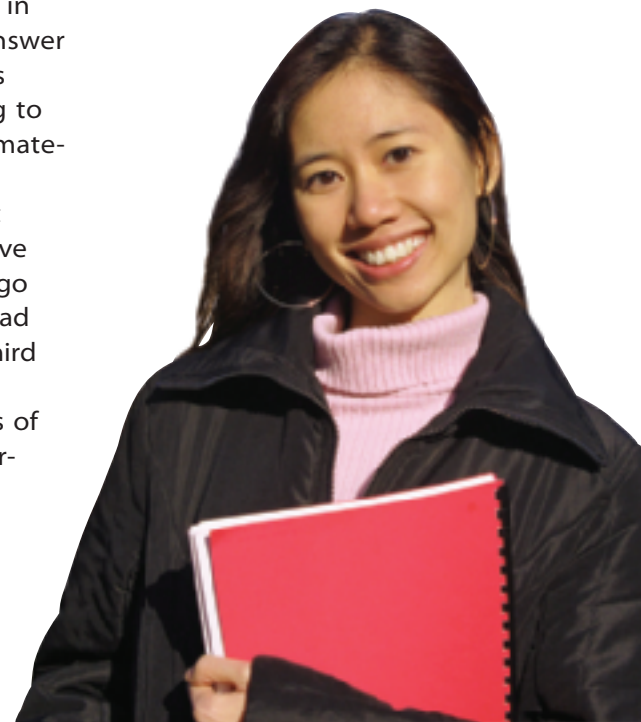
Preparing for tests is a long-term proposition. It's not a matter of "giving your all" the night *before* the test. Instead, it's a matter of giving your all to every aspect of the course.

Here are some guidelines that can help you do your best on tests:

**Know What You Are Preparing For.** Determine as much as you can about the test *before* you begin to study for it. The more you know about a test beforehand, the more efficient your studying will be.

To find out about an upcoming test, ask if it is a “test,” an “exam,” a “quiz,” or something else. These names imply different things. Each kind of test question requires a somewhat different style of preparation.

- **Essay questions.** Essay tests focus on the big picture—ways in which the various pieces of information being tested fit together. You’ll need to know not just a series of facts, but also the connections between them, and you will have to be able to discuss these ideas in an organized and logical way. The best approach to studying for an essay test involves four steps:
  1. Carefully reread your class notes and any notes you’ve made on assigned readings that will be covered on the upcoming exam. Also go through the readings themselves, reviewing underlined or highlighted material and marginal notes.
  2. Think of likely exam questions. For example, use the key words, phrases, concepts, and questions that come up in your class notes or in your text. Some instructors give out lists of possible essay topics; if yours does, focus on this list, but don’t ignore other possibilities.
  3. Without looking at your notes or your readings, answer each potential essay question—aloud. Don’t feel embarrassed about doing this. Talking aloud is often more useful than answering the question in your head. You can also write down the main points that any answer should cover. (Don’t write out *complete* answers to the questions unless your instructor tells you in advance exactly what is going to be on the test. Your time is probably better spent learning the material than rehearsing precisely formulated responses.)
  4. After you’ve answered the questions, check yourself by looking at the notes and readings once again. If you feel confident that you’ve answered specific questions adequately, check them off. You can go back later for a quick review. But if there are questions that you had trouble with, review that material immediately. Then repeat the third step above, answering the questions again.
- **Multiple-choice, true–false, and matching questions.** While the focus of review for essay questions should be on major issues and controversies, studying for multiple-choice, true–false, and matching questions requires more attention to the details. Almost anything is fair game for multiple-choice, true–false, and matching questions, so you can’t afford to overlook anything when studying. It’s a good idea to write down important facts on index cards: They’re portable and available all the time, and the act of creating them helps drive the material into your memory. Furthermore, you



can shuffle them and test yourself repeatedly until you've mastered the material.

- **Short-answer and fill-in questions.** Short-answer and fill-in questions are similar to essays in that they require you to recall key pieces of information rather than finding it on the page in front of you, as is the case with multiple-choice, true–false, and matching questions. However, short-answer and fill-in questions typically don't demand that you integrate or compare different types of information. Consequently, the focus of your study should be on the recall of specific, detailed information.

**Test Yourself.** Once you feel you've mastered the material, test yourself on it. There are several ways to do this. Often textbooks are accompanied by websites that offer automatically scored practice tests and quizzes. (*Understanding Psychology* does: go to [www.mhhe.com/feldmanup11e](http://www.mhhe.com/feldmanup11e) to try one!) You can also create a test for yourself, in writing, making its form as close as possible to what you expect the actual test to be. For instance, if your instructor has told you the classroom test will be primarily made up of short-answer questions, your made-up test should reflect that.

You might also construct a test and administer it to a classmate or a member of your study group. In turn, you could take a test that someone else has constructed. Constructing and taking practice tests are excellent ways of studying the material and cementing it into memory.

**Deal with Test Anxiety.** What does the anticipation of a test do to you? Do you feel shaky? Is there a knot in your stomach? Do you grit your teeth? *Test anxiety* is a temporary condition characterized by fears and concerns about test-taking. Almost everyone experiences it to some degree, although for some people it's more of a problem than for others. You'll never eliminate test anxiety completely, nor do you want to. A little bit of nervousness can energize us, making us more attentive and vigilant. Like any competitive event, testing can motivate us to do our best.

On the other hand, for some students, anxiety can spiral into the kind of paralyzing fear that makes their minds go blank. There are several ways to keep this from happening to you:

1. *Prepare thoroughly.* The more you prepare, the less test anxiety you'll feel. Good preparation can give you a sense of control and mastery, and it will prevent test anxiety from overwhelming you.
2. *Take a realistic view of the test.* Remember that your future success does not hinge on your performance on any single exam. Think of the big picture: Put the task ahead in context, and remind yourself of all the hurdles you've passed so far.
3. *Learn relaxation techniques.* These techniques are covered in the text's chapter on health psychology, but the basic process is straightforward: Breathe evenly, gently inhaling and exhaling. Focus your mind on a

pleasant, relaxing scene such as a beautiful forest or a peaceful farm or on a restful sound such as that of ocean waves breaking on the beach.

4. *Visualize success.* Think of an image of your instructor handing back your test marked with a big "A." Or imagine your instructor congratulating you on your fine performance the day after the test. Positive visualizations that highlight your potential success can help replace images of failure that may fuel test anxiety.

What if these strategies don't work? If your test anxiety is so great that it's getting in the way of your success, make use of your college's resources. Most provide a learning resource center or a counseling center that can provide you with personalized help.

**Form a Study Group.** *Study groups* are small, informal groups of students who work together to learn course material and study for a test. Forming such a group can be an excellent way to prepare for any kind of test. Some study groups are formed for particular tests, while others meet consistently throughout the term. The typical study group meets a week or two before a test and plans a strategy for studying. Members share their understanding of what will be on the test, based on what an instructor has said in class and on their review of notes and text material. Together, they develop a list of review questions to guide their individual study. The group then breaks up, and the members study on their own.

A few days before the test, members of the study group meet again. They discuss answers to the review questions, go over the material, and share any new insights they may have about the upcoming test. They may also quiz one another about the material to identify any weaknesses or gaps in their knowledge.

Study groups can be extremely powerful tools because they help accomplish several things:

- They help members organize and structure the material to approach their studying in a systematic and logical way.
- They allow students to share different perspectives on the material.
- They make it more likely that students will not overlook any potentially important information.
- They force members to rethink the course material, explaining it in words that other group members will understand. This helps both understanding and recall of the information when it is needed on the test.
- Finally, they help motivate members to do their best. When you're part of a study group, you're no longer working just for yourself; your studying also benefits the other study group members. Not wanting to let down your classmates in a study group may encourage you to put in your best effort.

## Some Final Comments

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We have discussed numerous techniques for increasing your study, classroom, and test effectiveness. But you need not feel tied to a specific strategy. You might want to combine other elements to create your own study system. Additional learning tips and strategies for critical thinking are presented throughout *Understanding Psychology*.

Whatever learning strategies you use, you will maximize your understanding of the material in this book and master techniques that will help you learn and think critically in all of your academic endeavors. More important, you will optimize your understanding of the field of psychology. It is worth the effort: The excitement, challenges, and promise that psychology holds for you are significant.