

INVESTING IN YOUR COLLEGE EDUCATION

LEARNING STRATEGIES
WITH READINGS

Kathleen Hartman | Thomas Stewart



Second Edition

Comparison of Textbook Styles Across Disciplines

All textbooks should not be read in the same way. The following chart illustrates the differences in textbooks across some major disciplines. Knowing how textbooks are different from each other as you take various classes in college will help you to be a more successful student.

The Unique Features and Comprehension Strategies at the end of each chapter in the text offer more strategies for reading in each discipline.

You also might be asking “Where can these textbooks take me?” See the list of possible careers that may come out of different disciplines you study. Some of the career choices are obvious. Do any of the possible careers surprise you?

DISCIPLINE AND CHARACTERISTIC	POSSIBLE RELATED CAREERS	
Education texts emphasize moving from theory to practice.	<ul style="list-style-type: none"> ▶ Teacher ▶ Corporate Trainer ▶ High School Teacher 	<ul style="list-style-type: none"> ▶ Tour or Museum Guide ▶ Day Care Provider
Business texts rely on visual literacy (the ability to read charts and graphs).	<ul style="list-style-type: none"> ▶ Accountant ▶ Restaurateur ▶ Sports Agent 	<ul style="list-style-type: none"> ▶ Financial Planner ▶ Computer Consultant
Physical Sciences texts use special vocabulary that is usually in bold type and in the glossary of the chapters.	<ul style="list-style-type: none"> ▶ Chemist ▶ Sales Representative ▶ Flavorist 	<ul style="list-style-type: none"> ▶ Teacher ▶ Quality Control ▶ Chef
Psychology texts reinforce concepts with examples that show application of the concept.	<ul style="list-style-type: none"> ▶ Counselor ▶ Sales Representative ▶ Social Service Position 	<ul style="list-style-type: none"> ▶ Web Designer ▶ Psychologist
Mass Media/Communications texts use many real-life examples.	<ul style="list-style-type: none"> ▶ Radio/TV Personality ▶ Public Relations Staffer 	<ul style="list-style-type: none"> ▶ Radio/TV Producer ▶ Web Designer
Literature texts aren't as exact as the sciences and are open to interpretation.	<ul style="list-style-type: none"> ▶ Editor ▶ Writer 	<ul style="list-style-type: none"> ▶ Corporate Trainer ▶ Public Relations Staffer
History texts are told as a story.	<ul style="list-style-type: none"> ▶ Teacher ▶ Journalist ▶ Antiques Dealer 	<ul style="list-style-type: none"> ▶ Museum Curator ▶ Art or Furniture Restorer
Visual and performing arts texts emphasize visual and graphic displays (art work).	<ul style="list-style-type: none"> ▶ Artist ▶ Teacher ▶ Architect 	<ul style="list-style-type: none"> ▶ Actor ▶ Interior or Set Designer
Math texts require you to be interactive.	<ul style="list-style-type: none"> ▶ Actuary ▶ Mathematician ▶ Claims Adjuster 	<ul style="list-style-type: none"> ▶ Computer Programmer ▶ Teacher
Technology texts are abstract and math-oriented.	<ul style="list-style-type: none"> ▶ Programmer ▶ Technical Writer ▶ Network Administrator 	<ul style="list-style-type: none"> ▶ Technology Reporter ▶ Web Page Designer ▶ Help Desk Support

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Learning Strategies with Readings

SECOND EDITION

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Kutztown University

Thomas Stewart

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Preface

To the Student

College is a life-changing experience, from meeting new people, to trying new things, to discovering courses and majors you may never have known existed. Academically, your first year of college presents you with wonderful opportunities to explore academic disciplines for the first time or to study other disciplines in greater depth. You will be taking not just courses in your major, if you have already declared one, but also courses that fulfill general education requirements. These courses are designed to provide you with breadth of knowledge, while also helping you to see how the academic disciplines can enrich your life, help you succeed in college, and help you make informed major and career choices.

Investing in your Education

Investing in Your College Education: Learning Strategies with Readings, Second Edition is based on the idea that you are making an enormous investment by going to college—an intellectual investment, a financial investment, and an investment of time. This second edition of the text expands on this theme, while also helping you to invest even more in understanding the connections between all the courses you take during your first year, the success skills you will need in college, and the learning that will take place both in and outside the classroom, to enrich your academic and personal life while expanding your major and career possibilities.

Making initial investments in your college experience is important, but you will find more success in and out of the classroom when you learn how to manage your investments effectively. How will you choose a major? How much time should you be studying? How can you balance your social life and your academic life? How can you handle all of the reading? How do you stay healthy? How do you best study for tests? Should you invest your time in a job, a service learning project, or campus activities? How do you keep within a budget? How do you learn more about yourself and the opportunities in the world around you through general education courses and electives? This book will provide answers to these questions and will show you ways to make these investments to the best of your ability. In this text, you will be exposed to academic disciplines you will encounter in college, new learning strategies, and new ideas to help you make the most of your courses, your campus activities, your on- or off-campus jobs, and your time with friends and professors. All of these can add to your success over the next four years. Beyond college, the strategies presented in this text will help you to grow and advance in graduate school, in a career, and in life. College is a time of tremendous opportunity, and the opportunities are present in all the courses you take and all the things you do to expand your social and academic horizons. With this book, you will make an initial investment, during your first year, to yield the dividends of success in years to come.

There are ten chapters in this textbook, and each chapter focuses on a specific theme and academic discipline, both of which are closely related. Each theme covers an area for you to invest in during your first year of college. These important areas of investment range from knowing what is expected of you as a college student in the classroom, to keeping healthy, to being involved in opportunities beyond the classroom.

Increasing your Yield

What is particularly unique about this textbook is that it contains *both* learning strategies and readings to which you can immediately apply some of the strategies. And this second edition includes many new, exciting readings that will help you connect what you are learning in textbooks to what you may be able to do in your life, personally or professionally. In college, you're going to be required to do a *lot* of reading, and the readings in this text are designed to show you just how important and enriching your reading can be, while also providing you with strategies you can use to help you read more effectively.

- ▶ **A TEXTBOOK CASE** As the title suggests, at the end of each chapter you will find a selection from an actual textbook. These excerpts are from textbooks used in content courses you will most likely take in college during your first year. You will find selections from education, business, physical science, psychology, communications, literature, history, art, math, and technology. The textbooks in every discipline have their own unique features and require specific strategies to help you understand the content. These features and strategies are provided for you before you begin the readings in the “Unique Features and Comprehension Strategies” sections.
- ▶ **LIFE AFTER COLLEGE** These readings will give you the opportunity to explore possible careers within the disciplines featured in “A Textbook Case.” Taken from prominent magazines, newspapers, and journals in the various disciplines, the articles will show you some of the possibilities available, including some careers about which you may never have thought. Since one of the reasons you are investing time in college is to enter a career field that requires a college degree, the sooner you expose yourself to what's out there, the better you are positioning yourself as an investor.

Prior to the readings at the end of each chapter, you will find a section discussing the role of the particular discipline in your everyday life and in possible career paths. When you read this section, be open to what you can gain from each course you take, whether or not you decide to major in that discipline. Also before the readings, you will find a rationale for the placement of each of the readings in that particular chapter. The readings that have been selected are quite diverse, with selections from literature and computer science textbooks, for example. You will also have a chance to read about the careers of teachers, writers, and people in business, to name just a few. What should you be getting out of all of this? Part of the answer depends on what your instructor asks you to get out of it, whether that means an assignment or a quiz or just being prepared for a class discussion. Beyond just doing the assignment, though, you have an opportunity to learn more about the world in general and about what role you want to play in that world, in terms of your major and your career.

The diverse readings in this textbook are meant to be a steppingstone for your own explorations. For example, reading about marine ecology may lead you to research volunteer or career opportunities for those of you who love the ocean, or to enroll in a course in oceanography. Or reading about forensic accounting (do you know what that is?) may spark an interest in both investigative and business careers. Allow yourself to be open to the possibilities.

If you are really interested in a particular subject and in possible careers related to it, you will find a list of more articles, books, and websites you may wish to explore in the section entitled “Compounding Your Interest: Further Readings.” If you find something that piques your interest, you should follow up on it. There’s no telling where that search might take you.

Unique Features

Each chapter has the following features. Investing some time in these features as you read along will help you better understand and begin to apply what you’ve been learning in the chapter.

- ▶ **What I Know Now** Stories of students whose experiences, whether positive or negative, helped them learn valuable lessons about succeeding in college.
- ▶ **Think About It** Questions interspersed throughout the book that encourage active thinking about what you are reading.
- ▶ **Team Activities** Group activities that encourage you to work together with other students in your class.
- ▶ **Time Out Tips** Quick tips on the application of learning strategies.
- ▶ **DIY: Do-It-Yourself Activities** Suggestions for short activities to help you make connections to the chapter topic.
- ▶ **Lifelines** Reminders of resources on campus—counseling, tutoring, health center—that can help you if you find yourself in a pinch.

Investing in Your College Education: Learning Strategies with Readings is designed to help you make the right investment choices now that you are a college student. As you take your first steps as a college student, use this textbook as a guide. And remember that this is just one part of a support system that includes your family, friends, professors, roommates, coaches, advisors, counselors, and the many others who wish you as much success as you wish for yourself. Good luck in your journey and invest wisely!

To the Instructor

In this second edition of *Investing in Your College Education* you will find many new readings and activities to further engage your students in all courses they will take during their first year. Each chapter is designed to thematically link a content area, such as English or psychology, with the college success skills that are inherently related to it, while also helping students understand the connections these courses have to all aspects of their lives, from becoming a more well-rounded person to discovering a new passion, major or career. This is also the reason for the addition of

a new section in each chapter explaining the connection between the disciplines, everyday life, and possible careers. For example, in Chapter 7, the section entitled “The Role of Visual and Performing Arts in our Lives: Connections and Careers” highlights the benefit of taking courses in the arts and how the arts can enrich the students’ campus experiences and their lives in general, while also providing a connection to possible careers.

This second edition is also designed *to encourage students to be even more active learners*, interacting with the textbook itself through many activities that they can complete in the spaces provided in the text. Many of the features in the first edition, as well as new photographs, now offer students the opportunity to answer related questions in the text or to reflect on something they see or read as it relates to the chapter content. Students are given many opportunities to use the text not just for reading, but also for doing, both individually and in small groups.

The two categories of readings at the end of each chapter—“A Textbook Case” and “Life After College”—are more closely connected to each other and to the overall content of each chapter. The excerpts from textbooks in each discipline and articles about careers related to that discipline will allow you to show the students how to apply the strategies in the chapter with readings that are engaging and enlightening and that allow for extended discussion. *And many of these readings are new*, driven by changes not just in the workplace or in specific disciplines, but also by what is going on right now, pulling students into current events while engaging them in discussions about disciplines, majors, and careers. New readings cover such topics as biotechnology and our food supply, forensics in the business world, reality television, computer animation, the science of forgetting, and more. These readings were chosen to excite students and spark their interest in disciplines they will encounter through general education courses and electives, while also linking these subjects to college success skills, possible majors, and careers.

As an instructor, it is naturally your decision which if any of the readings you assign to your students. The text is written in such a way that you could assign all of the readings from a chapter, one or two of them, or even none at all. While everything is integrated, the book is written in a modular manner that allows you to assign as many or as few of the readings as you want. For example, if your course is primarily focused on choosing a major or career, you could focus specifically on the “Life After College” readings. Reading about different careers—and the paths people took to get them—can give students ideas about where their own interests might take them. Also, the “Compounding Your Interest: Further Readings” section now provides students with books, articles, and websites through which they can further research possible careers related to the discipline highlighted in each chapter. If your course focuses primarily on reading, you could focus specifically on “A Textbook Case” readings. These readings are taken from actual textbooks in fields as diverse as math and history. Rather than having to go out and find a selection of textbook readings, you have all the readings and related activities at your fingertips.

This second edition is designed to help you help your students celebrate and learn from all the courses they take in their first year in order to improve their college success skills, explore majors, and learn about the varied career opportunities they

have. In addition to the material contained within *Investing in Your College Education: Learning Strategies with Readings*, there are additional resources available for you as an instructor:

- ▶ **Online Instructor's Resource Manual (IRM):** For each chapter, you will find summaries, lecture suggestions, and explanations of textbook exercises, as well as additional activities, suggestions for using the readings, and chapter tests. You will also find a detailed explanation of the text's overall themes, suggestions for using the text for a variety of course types and student populations, sample course syllabi, and suggested grading systems. The IRM is located on the instructor's website.
- ▶ **Instructor Web Site www.cengage.com/success/hartman:** In addition to providing the online IRM, the instructor's website also contains mid- and end-of-term tests, tips on choosing your own course readings, reproducible masters, PowerPoint slides, and information on additional resources to use in your course. New to the website is "Investing Even Further: Current Events Powered by the Associated Press," featuring current headlines, video clips, and discussion questions to help you create engaging lecture experiences based on current events.
- ▶ **TeamUp:** An additional service available with the text is access to TeamUp, an unparalleled suite of services provided by Cengage Learning that offers you flexible and personalized assistance with using our programs and integrating them with your course materials. Whether online, on the phone, or on campus, TeamUp will strive to deliver high-quality service and support via Faculty Programs, Training, and Media Support. The team of consultants has a wide variety of experience in teaching and administering the first-year course. They can provide help in establishing or improving your student success program. They offer assistance in course design, instructor training, teaching strategies, annual conferences, and much more. Learn more about TeamUp today by calling 1-800-528-8323 or visiting <http://www.cengage.com/teamup/>
- ▶ **Student Web Site www.cengage.com/success/hartman:** A student website for this text contains additional quizzes, including comprehensive quizzes for the readings, current events and career-related web search activities, additional case studies, a reading inventory for students to take when they begin and finish the course, and other exercises and resources. New to the website are the Video Skillbuilders, featuring fifteen video clips drawing from popular topics covered in Student Success courses. The Video Skillbuilders bring to life techniques that will help students excel in college and beyond.

These resources are designed to help you incorporate this book into your first-year courses as effectively as possible as you help your students at the beginning of their journey through college.

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Kathy Hartman

1 Making the Initial Investment in Higher Education



Education can be defined in many ways. It can be defined as what we learn in the classroom, but what we learn outside of school also can be considered education. If you think about your past educational experiences, you may be able to identify experiences you have had both in the classroom and through extracurricular activities that helped you learn and grow, and led you to where you are now: college. This is the next step in what ideally will be a lifetime of learning. Now is the time to start investing in this new venture on which you have embarked. The best initial investment you can make to reap the benefits of success in college is to decide why you are here. When you understand this important part of the picture, you can decide what you need to do to succeed. In other words, you will decide just how and what to invest in your higher education, knowing that these investments will yield great

This chapter will cover the following topics:

- ▶ Understanding What It Means to Be a College Student
- ▶ What to Expect of Your Professors *and* What They Expect of You
 - ▶ Personal Responsibilities
- ▶ Getting Critical: Switching to College-Level Thinking
- ▶ Finding Your Place on Campus: Diversity and New Experiences in College
- ▶ Finding and Using Campus Resources
- ▶ Finding a Mentor
- ▶ A Major Decision: Thinking Early and Often About Majors and Careers
- ▶ A Quick Overview of Which Majors Lead to Which Careers
- ▶ The Role of Education in Our Lives: Connections and Careers

Think About It



Answer the following questions in the space provided.

Why are you in college right now? _____

Based on your own educational experiences in grade school, middle school, and high school, what are your expectations of college? _____

Share and compare your answers with your classmates in a small group.

dividends for you over the coming years. This chapter is designed to walk you through these questions and to help you understand what college is about, what it means to be a student, what professors expect and what you can expect of them, and how you can use all the resources available to you to get the most out of your investment. This chapter will also focus on the role of education in our lives. Why do we go to school? How does what goes on in the world around us influence what we learn and how we learn it? How does our education continue long after we leave the classroom? As a college student, you already have many years of formal education behind you. Now is a good time to reflect on how your experiences have shaped who you are and influenced your decision to be in college today. Education is a journey, and it is one we will take throughout our lives. As a new college student, you have taken the next step of your journey as a lifelong learner.

FIRST THINGS FIRST

College is a new and exciting phase in your educational life. You have moved on from high school; you may have some ideas about what you want to do with your life; you may be here after working in a field from which you want a change; or you may be here because it is the first time you have had an opportunity to go to college after working or raising a family. Yet, in the midst of this excitement, college can also be a difficult adjustment for many students. It may be your first time away from home. You may have none of your old friends at the new school. Your first day of classes might be intimidating as you realize what your workload is going to be. You may not remember how to study if you have not been in school for many years. At times, you may question the wisdom of your decision to attend college. Sometimes you may even feel like dropping out. It is important to realize that the first few weeks can be the hardest and that hanging in there through this period is part of the process. You must keep your goals in mind and even begin thinking ahead to where your career as a college student will lead you. The first thing you need to do, however, is get used to your new role as a college student.

Understanding What It Means to Be a College Student

College, you will soon discover, is much different from high school. First of all, the workload is considerably different. On the surface, it may seem like you have less work. After all, the typical college student is in class only about 15 hours a week, half the time a typical high school student spends in the classroom. This, however, means that you have to learn to manage your time better, because more of the responsibility of ensuring that you learn all the material falls on your own shoulders. Furthermore, many students enroll in colleges that are much bigger than their high schools, which can make classes seem more overwhelming or less personal.



Imagine yourself in this photo, listening to one of your first college lectures. How is what is happening in the photo different from your high school classroom experiences? How is it the same? What do you expect out of your college classes, and what do you think will and will not be expected of you?

Now that you are in college, you may not have your parents to make sure you get out of bed in the morning. You may not get an extra day to turn in an assignment. You may not be told exactly what to do on a paper. You may have to read five chapters in one night . . . and the list goes on. College, you will find, is going to demand that you be an independent learner.

That, luckily, is not as hard as it may seem. Being an independent learner, after all, doesn't mean that you have to do everything on your own. There are lots of resources on campus that will help you. What it *does* mean is that you will sometimes have to take the lead in seeking out help, looking for opportunities, and making the most of them.

What to Expect of Your Professors *and* What They Expect of You

You will soon discover that your professors have some pretty high expectations of you, the new college student, whether you are a

full-time or part-time student, and whether you are coming to college right out of high school or you have taken a break from school to work or raise children. They expect you to attend class, even if attendance is not required. They expect that you will contact them when you miss a class. They expect that you will arrange to get the information and assignments that you missed. They expect that you will ask questions and seek help during their office hours or from a tutor. They expect that you will put time into the course and take pride in your work. In short, they expect you to care.

In turn, you can expect them to provide you with a syllabus; their office hours, phone number, and e-mail address; and plenty of work. They will also provide you with assistance in completing that work as long as you ask for help. Be sure to take advantage of posted office hours; most professors are more than happy to meet with you and appreciate the extra effort on your part. This is a good way to get to know your professors and to begin the networking that is an important part of success in college. If you make an appointment during a professor's office hours, be prepared. Have a plan. You want to come across as a well-organized student. If you're visiting because you don't understand the material, you should have questions written down for your visit. Some professors, particularly those who teach large classes, have TAs (teaching assistants) who are assigned to help. These are typically graduate students who are becoming experts in the field and may even be preparing to become professors themselves.

Time Out Tip



Always talk to your professors outside of class. Visit them during their scheduled office hours. Ask them specific questions about upcoming tests. Let them see that you are a hard-working student. Taking this kind of initiative will pay off in the long run.

Even though professors have high expectations of you, they will treat you a lot differently than teachers did in high school. In high school, if you skipped class, your teacher would know right away, and you would probably get detention. In college, you're certainly not going to get detention. Many of your college professors (though not all) will say little or nothing if you miss class. In a large lecture class, they probably won't even notice. But that doesn't mean that you should attend class only when you please. One of the main reasons why students fail in college is that they don't go to class. And don't be fooled by students who seem to be having a great time and not going to any classes. Unfortunately, many of those students won't be around to enjoy themselves the next semester.

Personal Responsibilities

What are all of the personal responsibilities of a college student? If you're entering college right out of high school, this is really the first time in your life that you have been totally responsible for yourself. If you are returning to college after working or raising children, your new responsibilities are going to require a bit of juggling. Let's take a look at some of the major responsibilities of a first-year college student, many of which may apply to you:

- ▶ Getting out of bed in the morning on your own.
- ▶ Leaving yourself enough time to get to campus if you are a commuter.
- ▶ Going to class—every day, even if it starts at 8:00 a.m., and even if you have a slight headache or minor sore throat.
- ▶ Eating a healthy diet and getting enough rest.
- ▶ Managing your time.
- ▶ Managing your money.
- ▶ Balancing work and school.
- ▶ Balancing family and school.
- ▶ Getting exercise.
- ▶ Doing your laundry.
- ▶ Cleaning your room.
- ▶ Studying—going to class is not enough.
- ▶ Turning in projects and papers on time.
- ▶ Knowing what's on the syllabus and following it.
- ▶ Getting the notes and assignments from a fellow student when you miss class and not expecting your professor to give them to you.
- ▶ Taking responsibility for your own decisions.
- ▶ Drinking responsibly—or not drinking at all.
- ▶ Learning to deal appropriately with conflict (such as roommate problems, disagreements with a professor, or family issues).
- ▶ Maintaining healthy relationships.
- ▶ Meeting college deadlines that govern registering for classes, paying bills, withdrawing from courses, applying for financial aid, signing up for campus housing, and so on.
- ▶ Getting help when you need it, whether it be academic, personal, or financial help. Knowing whom to ask is an important part of this.

This list may seem overwhelming, and many of the items on this list may be new to you. However, help is always available. Usually an advisor, counselor, faculty member, or more experienced student can at least point you in the right direction.

But you can begin on your own right now. Simple steps such as putting your alarm clock on the other side of the room instead of right next to your bed can make a big difference. If it's right next to your bed, it's all too easy just to hit the snooze button or shut it off and go right back to sleep. And don't set your clock radio to your favorite station. Getting up in the morning isn't about listening to your favorite songs. If you like rock music but hate country, set your radio alarm to a country station. That makes it more likely that you will get up to shut it off.

For finances, keep an active eye on your budget. In Chapter 9, we will talk more about specific ways of managing your money. Watch out for the easy lure of credit cards. Set up a schedule of when your assignments are due—and when you are going to work on them. When you go to do your laundry, don't go empty-handed. Take some notes, or, better yet, go with a friend who is in the same class

What I Know Now

Ashley • Elementary Education Major • Age 21 • Albany, NY

“I was the first person in my family to go to college.” Ashley, a senior education major, looks back with amazement at how far she has come. “My parents never went to college, and I am the oldest child in my family. Everything was new. I also chose a college that none of my friends from high school attended—four hours away from home. I knew when I first got here that it was sink or swim. I came to college undeclared, because I had no sense of direction. My parents own a restaurant and I knew I did not want to do that for the rest of my life. I always thought I would make a good elementary school teacher, but I didn't know any teachers, and I didn't know if I had what it would take.”

Ashley now credits a campus scavenger-hunt project with helping find key people and resources that helped her become a successful education major. “During my first-year seminar, my professor gave us a scavenger hunt project. During this project, I located the Advising Center. In the Advising Center, I met a great professor who walked me through the process of declaring a major and reviewing the courses I would need to take. I went to see her every week. She was a former high school teacher and became the role model I never had. She helped calm my fears and show me I had what it takes. By the end of my first semester, I had a 3.0 GPA and was accepted into the Elementary Education program. I never looked back.”

Ashley is currently student teaching in a first grade classroom and knows she made the right decision. Her advice for freshmen is to find an advocate, a professor or staff member who can answer the questions that may overwhelm them. “It may have been easy to quit, but instead, I found a person who believed in me. She told me what classes to take, where to get a tutor when I was failing math my first semester and what to do to declare a major. I know now that one person really can make a difference. I hope I can do the same when I am a teacher.”

and turn it into an impromptu study session. Try recording yourself reciting your notes, and then play them while you are cooking or taking a walk.

Get to know your college catalogue; it will list dates for such activities as registering for class, add-drop, and course withdrawals. Try to recognize potential conflicts before they get out of hand. If you are unhappy with your roommate because he listens to loud music late at night, try talking to him, and if that doesn't work, the two of you should sit down with your RA (resident assistant) or hall director and work things out. Be prepared to learn the importance of compromise. In real life, a "my way or the highway" philosophy isn't going to get you very far. It's no secret that a lot of students run into problems in college for reasons that have nothing to do with their ability to handle the academics. They get into trouble because they aren't prepared for the numerous responsibilities that have suddenly been thrust upon them.

Getting Critical: Switching to College-Level Thinking

It may be obvious, but it's nevertheless worth repeating here: College is not high school. At this level, the expectations of you as a student are much different. How? First of all, you must start becoming a critical thinker. It's not just memorization any more, although you certainly have some of that, too. You probably had some practice in critical thinking in high school, but now it's the rule rather than the exception. Your opinion matters. How well others respond to your opinion will be tied to how well you can learn to express your opinion, to frame an argument, and to convince others. What that means is that the rule will no longer be "Here's what you need to study for the test" and then you simply recite that information. Professors will question you more in class about your attitudes toward issues. Of course, we all have a right to an opinion, but getting other people to understand why we feel the way we do—and even swaying others' opinions—is what you'll be doing in college.

Along with this freedom to express your opinion comes the responsibility for taking your learning into your own hands. You will have to locate a lot of information on your own. You will have to find your own way around the library, for instance, and your college library may be extremely intimidating when you first arrive. In any given course, you could be expected to take responsibility for locating materials (whether in the library or through the library's online databases) that will supplement information presented in your textbook and in the lectures. A critical thinker does not wait for information to be provided. A critical thinker seeks out information independently. If you do not have enough information about a subject, you can't really think critically about it. The responsibility for equipping yourself with enough information lies in your own hands.

Learning to be a critical thinker doesn't end in the classroom. As you move through life, you will be held responsible for your own actions. You will need to make critical decisions every day when you are in college. This can be as simple as deciding to eat healthy foods or something as complex as trying to decide how to help a friend who has mentioned suicide. Learning how to deal with these issues

is not easy, but it is part of becoming an educated person. The relatively simple issue of deciding when and whether to renew your housing contract is an example. You could end up missing important deadlines if you do not take it upon yourself to seek out information you may not have been given. You may not even realize how many housing opportunities you have unless you gather information, think critically about your options, and make an informed decision.

For most students, the biggest difference between high school and college is not the work itself but the need to navigate through the decision making necessitated by the independence that college brings.



DIY: Do-It-Yourself Activity

Find and arrange to meet a professor in the field you are interested in pursuing. You can find a professor in a particular field by checking the campus directory or your school's website, which would identify professors and their respective departments. When you meet with the professor, ask him or her the following questions:

1. How did you get into your field?

2. What level of education do you recommend?

3. Am I in the right major for pursuing this field? Why or why not? What other majors should I consider?

4. What can I do now to prepare for this career?

Share your answers with your classmates in small groups or share what you learned with the entire class. What you found out may help others as well.

Finding Your Place on Campus: Diversity and New Experiences in College

Your first few days or even weeks on campus can be an overwhelming experience. You may have a roommate who comes from a totally different environment. You may see people dressing differently from what you encountered at your high school. You may be surprised at the number of religious organizations represented on campus. Racial, ethnic, and socioeconomic diversity will also play a role in your college experience. From the very beginning, you may find that the students in your classes and in your residence hall are from much more diverse backgrounds than you were used to in high school. You may realize that you're no longer the best athlete in the school or that you're suddenly surrounded by students of all different ages. The faculty members may act very differently from your high school teachers, and they will probably have very different expectations of you. You may come to ask yourself, after the first few days or weeks, "Where do I fit in?" That is a good question, and sooner or later, everyone finds the answer.

Finding your place on campus and coming to enjoy and benefit from the diversity of a college campus is your responsibility, as much as becoming the critical thinker and independent learner you are expected to be. This is not to say, however, that you will not get any help. Help is all around you. Here are some things you can do early in your college experience to find your way:

- ▶ Try to get to know your roommate, if you don't know each other already. Even if you seem to have only differences, you can learn from those differences and create a peaceful living environment.
- ▶ Talk to your resident assistant or floor supervisor if you live on campus. In the beginning, residence halls often have socials that can help you get to know people right away so that you don't feel like an outsider.
- ▶ Try to get to know at least one person in each of your classes, especially if you are a commuter or nontraditional student. Not only will this help you avoid feeling alone in the class, but it will also give you someone you can turn to if you have a question, if you need study help, or if you miss some of the notes. Meeting other students in class is one of the best ways to make immediate connections.
- ▶ If you get to know your professors outside of class, they may not seem as intimidating or as different from the teachers you have learned from in the past.
- ▶ Try to join at least one extracurricular activity as soon as possible. Whether you like politics, chess, art, or music, there's probably a club for you. And if there isn't, consider taking the lead and forming one. These clubs give you a chance to socialize and share your interests with others. You may think you do not have time, but you need to make time. You will reap the benefits while also learning good time management skills.
- ▶ Go to a cultural event on campus that you would not normally see. For example, you could go to a ballet, a symphony, a drum circle, or a gallery opening. This sort of exploration could lead to a whole new area of interest.
- ▶ If you think your schedule will permit, consider working on campus, even for a few hours a week. This will make you feel more connected, and it will also help you to meet new people.

- ▶ If you're a commuter, your campus may have a commuter lounge or group where you can share lunch and meet others who have a similar experience.
- ▶ If you're a nontraditional student, remember that most campuses have a nontraditional student group that may be very supportive and helpful. It may also be especially important for nontraditional students with families to think about striking an effective balance so that they maintain a healthy family life while being a student. One suggestion is to get your family involved in your college experiences. Many campuses have family days, festivals, or cultural activities that spouses, children, and other family members can attend. Such opportunities can help them feel more familiar with what you're doing in college.
- ▶ Sports are a good way to get to know others. You don't have to be a state champion to get involved. Most colleges have intramural sport leagues. And any trip to the campus gym should give you an opportunity to play pick-up basketball, racquetball, or tennis.
- ▶ Fraternities and sororities have long been a tradition at many college campuses. They can be a great way to get to know other students. Often, members end up living together in the "house." The best of these organizations not only support strong academic performance but also actively encourage it.
- ▶ College parties are also a long-standing tradition. And, of course, they can be a good way to meet and get to know others. As with anything else, moderation is the key. Save the parties for the weekend and don't overdo it.

The best time to try to find your place on campus is from the very beginning. Remember that all the other new students are trying to do the same thing. If you

wait too long, you may miss out on some opportunities. Also, a few weeks could go by, and you could start to feel very isolated from the campus community. Trying to find your place right away will prevent this isolation and help you feel more connected.

College students traditionally think of their courses as the main sources of learning. This is partly true—you do learn in your courses—but it is also true that you will learn as much, if not more, from the experiences that you have outside the classroom. In other words, if you simply go to classes and then go home and study, you're not going to have all that much to say for yourself when you graduate. Most employers and graduate schools are looking for a well-rounded person—for someone who, in addition to having made good grades, can show that he or she has been involved in activities that go beyond the classroom.



Where do you think this student is working? Why? What do you think this student will gain from this employment, besides the obvious paycheck? What types of campus jobs might you be interested in?

Teamwork Activity

In small groups, complete the following table, linking activities outside the classroom to how students can benefit and what they can learn from them.

Activity	Benefits and Learning Opportunities

Finding and Using Campus Resources

Another way to find your way on campus and make important connections is to find and use the many campus resources that are available to you. No matter what problem you may encounter, what question you may have, or what information you wish to obtain, there is most likely a resource or office to assist you. Only you can decide what you can get out of them by investing your time and effort. Campus resources may include

Lifeline



If you think you might need a tutor for a course, sign up early in the semester. Studies show that tutoring works best with repeated visits. If you wait until the last minute, it is not likely to help much. Besides, at most campuses, tutors are assigned on a first-come, first-served basis, so if you wait too long, a tutor may not be available.

Career Services Office Houses information about specific jobs, job outlooks, job qualifications, résumé writing and interviewing, and graduate schools. But don't wait until you're a senior to take advantage of Career Services. These offices also can help you find summer jobs and internships in areas related to your major. This will be an enormous help to you down the road.

Student Activities Office Provides information on clubs and activities that students can participate in both on and off campus. You will find everything from the outdoor club, which might take canoeing trips, to the finance club for future entrepreneurs. You can start networking today.

Residence Life Office If you're living on campus, you're going to need to know this office, which is the place to go for everything from changing roommates to getting a job as a resident assistant (RA).

Tutoring Center Provides tutors to students in various subjects and general study skills. This is also a good source of employment on campus. If you're good in math, for example, why not get paid to help somebody else learn it while building your résumé at the same time?

Greek Life Office If you're on a campus with fraternities and sororities, the Greek Life Office will be the focal point for coordinating activities and housing.

Financial Aid Office Don't stay in the dark about student loans, grants, and scholarships. Much more may be out there than you know about, and the Financial Aid Office is a veritable warehouse of valuable information that can help you stay in school. Also, the Financial Aid Office can often provide information about work-study jobs (which are tied to financial need).

Bursar's Office Pay your bills here!

Registrar's Office This office is responsible for helping you register for classes, drop and add classes, and withdraw from classes and for maintaining academic records. Also, if you need a transcript for a job or graduate school, this is where you will go.

Advising Office Many campuses provide full-time academic advisors to help you develop an appropriate academic plan. Take advantage of this service so you can avoid staying in school longer than you need to.

Counseling Center College can be a stressful and difficult time emotionally and psychologically. If at any time you feel that you're getting overly stressed, you don't have to bear the burden alone. Trained counselors are there to help you, and that help can often very quickly get you back on track.

Volunteer Center Besides being a nice thing to do, volunteering is another great way to build your résumé. It also can give you a taste of a job that interests you, and you can help people along the way. Many colleges work with both local organizations such as soup kitchens and national organizations such as Habitat for Humanity and the Red Cross. Feel good about yourself while learning more about careers and meeting other students.

Of course, this is just a short list of the many campus resources that may be available to you. Seek out what your own campus has to offer. You will be glad you did.

Finding a Mentor

Another thing to consider early in your college career is finding the people who can help you through the many twists and turns of college life. A mentor is one such person, and finding one promptly can be one of the best things you can do for yourself. In *The Odyssey*, Mentor was a close friend of Odysseus. Athena, the goddess of wisdom, disguised herself as Mentor in order to serve as a guide for Telemachus in the search for his father. From Homer's classic tale, the term *mentor* has come to mean a guide or an advisor to someone less experienced. How does this work in today's world? A rookie pitcher in baseball may be guided by a veteran. A new account executive at an advertising agency, showing some potential, may be taken under the wing of a senior executive. In college, a professor of biology may show a promising undergraduate the ropes. Or a senior may help a new student learn her way around campus and pick the best professors. Mentoring can mean many different things, and it has advantages for both parties. The mentor gets to share his or her knowledge. The person being mentored gets to learn from someone who has already done what he or she is about to do. Mentoring relationships take time to cultivate, however, and the best time to find a mentor is now, in your first year.

How do you find a mentor? You can begin by going to class. Of course, going to class is no guarantee that you will find a mentor. But it opens up the possibility that you might find a mentor in the person of one of your professors. You're even more likely to cultivate a mentoring relationship by visiting your professors outside of the classroom. Where? Professors usually have posted office hours. They might serve as advisors to different student groups, such as honor societies, volunteer groups, and the student branches of various professional organizations. Another way to get to know professors in a way that might lead to a mentoring relationship is through campus employment. Interested in psychology? See whether any jobs are available in the department office. Or perhaps you could become a tutor in the subject.

Professors are not the only potential mentors, however. People working in your future field can also be valuable mentors. How do you meet them? One of the best ways is through summer employment, starting with the summer immediately following your first year of college. Let's say you want to be an accountant with a major accounting firm. You're not going to be working as an accountant after just your first year of college (you might not even have taken an accounting class yet), but you could certainly get a job in the company in another position (such as the legendary mailroom). In these jobs, take advantage of opportunities to talk with people who have the kinds of jobs you are seeking. You might find someone who is interested in helping you get ahead in that field. The one summer you spend in the mailroom could lead to a job the next summer that is closer to your desired position.

Finally, you may not have to do all the work yourself. Many campuses have organized peer mentoring programs in place. They can be set up by majors, honor societies, residence halls, and athletics programs. Don't be afraid to give these a try. You may find after a year or two that you've gone from protégé to mentor and are sharing *your* knowledge with a new student. Whether you are a mentor or protégé, mentoring can be an important part of your educational journey throughout life.

A Major Decision: Thinking Early and Often About Majors and Careers

"So, what's your major?" If you haven't heard this line already, you will soon enough. As a college student, you are identified in the world at large by which college you attend: "I go to _____ College." Within your college, though, along with your fraternity/sorority, sports team, residence hall, clubs, or even hometown, your major is one of the key identifiers that tells your peers about you. You might feel a little frustration if your answer to that question right now is "Undeclared" or "Biology, but I am switching to something else," but you don't need to worry just yet. Studies show that the average college student switches majors three to four times. At your own college or university, you may have to wait until your sophomore year to declare a major. Even though you may need this year to get your feet wet in college, now is still as good a time as any to start *thinking* about your major. You should do it now—and do it often. There are plenty of opportunities to get started on this important process:

- ▶ **Reflect on the classes you are taking.** Usually, in your first year in college, you have a number of general education classes in everything from speech and composition to psychology and mathematics. What courses do you enjoy the most? How are you doing in these courses? You might find you are fascinated by something you never even considered when you were in high school.
- ▶ **If there's a course you like and in which you are doing well, talk to the professor.** He or she may have some insights to share with you about how the course is related to particular majors or career choices you could pursue.
- ▶ **Join a special-interest club.** You might find more information about a particular major or career and also meet people with similar interests—not only students but also professors and other professionals in the field.
- ▶ **Talk to your advisor.** Your advisor is trained to give you advice not only on what courses to take but also on what courses fit into what degree programs. He or she can help you decide whether a change in major is appropriate. If you are undeclared, speaking with your advisor is especially important as you sharpen your focus.
- ▶ **Visit the career office on campus.** In addition to providing information about careers, this office gives students an opportunity to take self-assessments that will help them zero in on a major or possible career. It's a good idea to take these self-assessments early, especially if you did not do so in high school. You may be surprised by the results. Remember that these services are helpful only if you take advantage of them.

A Quick Overview of Which Majors Lead to Which Careers

Getting a bachelor's degree is like becoming a member of an exclusive club; having the degree can open many doors for you, regardless of what your major is. In other words, even if you have a degree in English, you may be able to get a job in business. If you have a degree in psychology, you may find yourself with an opportunity to break into sales. Except in very technical fields—such as nursing, accounting, and chemical engineering, where you would be required to have a specialized degree—a bachelor's degree in almost any subject will be enough to get your foot in the door. What happens after that, of course, is up to you. Even so, your choice of major will provide direction for the types of opportunities you pursue. There are plenty of majors that really do provide you with a very straight path to particular job opportunities if that's the way you choose to go. You will notice that some fields, such as sales, are open to people from just about any major. The point of a chart like the one on the next page is to suggest the possibilities and also to illustrate the lack of limitations. There are many examples of English majors who became business executives, and business majors who decided to become teachers. Don't be limited by the stereotypes, but do research the possibilities. The time to start is now.

(continued)

Major	Typical Jobs*	Other Possibilities*
<i>Education</i>	Elementary Teacher High School Teacher Day Care Provider	Corporate Trainer Tour or Museum Guide Public Relations Trainee
<i>Business</i>	Accountant Manager Financial Planner	Restaurateur Sports Agent Computer Consultant
<i>Physical Science</i>	Chemist Flavorist Quality Control Inspector	Sales Representative Teacher Chef
<i>Psychology</i>	Counselor Social Service Position Psychologist	Sales Representative Webpage Designer Manager
<i>Mass Media</i>	Radio/TV Personality Public Relations Staffer Radio/TV Producer	Sales Representative Corporate Trainer Webpage Designer
<i>English</i>	Editor Writer Public Relations Staffer	Sales Representative Corporate Trainer Teacher
<i>History</i>	Teacher Researcher Museum Curator	Journalist Antiques Dealer Art or Furniture Restorer
<i>Visual and Performing Arts</i>	Artist Dancer Actor	Teacher Architect Interior or Set Designer
<i>Math</i>	Actuary Mathematician Computer Programmer	Sales Representative Claims Adjuster Teacher
<i>Technology</i>	Programmer Network Administrator Webpage Designer	Technical Writer Technology Reporter Computer Sales Person

*Some fields may require further education or training. For more information on job possibilities related to different majors, visit the Student Website at www.cengage.com/success/hartman.

Now that you have a good idea of what is expected of you and how you can begin to meet those expectations, it's a good time to reflect on what you have learned about what lies ahead. Ask yourself: **What do I need to do to be a successful college student?**

The Role of Education in Our Lives: Connections and Careers

Just as learning how to be a better college student plays a role in how successful students are with their educational experiences in college, so can education, in its many forms, play an important role in our lives outside the classroom and

beyond college. Understanding something about the educational system in which we learn can provide us with additional understanding of our own experiences, while also preparing us for educational experiences to come. Now is a good time to reflect on the role of education in your own life. What have your classroom experiences been like so far? Who have been your most influential teachers, and why? How do you best learn? Your education has helped shape you into the person you are today, but your educational experiences also play a role in helping you understand yourself better as a learner. You know how you best learn; you know what teaching styles fit your own learning styles; you know what helped you learn and what “turned you off” a subject. This knowledge can help you become a better teacher, whether you do so as a profession or you teach something you know well to a friend or your own child.

Careers in education are a possibility for many students. There are many opportunities for those people who have a passion for helping others learn and who love learning themselves. The more you understand the profession, however, the better you will come to know whether or not a career in education is right for you. Learning more about education from historical, sociological, and personal perspectives can help lift mistaken or romanticized ideas about education to reveal truths that will help you make responsible decisions about a career in education, with all its challenges and rewards.

Increasing Your Yield

Readings for Practical Application

This chapter has provided a general overview of what you need to know to get a head start on getting the most out of your college education. There is no doubt that this is a lot to think about. That's why it's good to start thinking about it all early in your college career. As you navigate your way through your college experiences, keep applying what you are learning to the big picture: How is this experience helping me figure out what I want to study, where I want to be, and who I am? You're learning how to be a student, and these same strategies apply to helping others become better students. This is one of the many things an educator does. In many ways, you are as much an educator as a student. Sometimes you can learn something very well by teaching it to others—and you have to really understand something yourself in order to do this. Throughout your college career, you will not only learn many things but will teach other people as well, whether through tutoring other students, helping friends solve problems, helping new students find their way around campus, or sharing your expertise with a club or other organization. While not all of you will choose to become professional teachers, all of you in one way or another will teach throughout your lives, perhaps as an employer or a parent. As you begin to look at possible careers, we begin by exposing you to the career of teaching as one of your many options. What you do in college in terms of being a student can be readily applied to the day-to-day life of a teacher. The focus of the readings for this chapter, then, is education, as both a career and a subject.

The “Textbook Case” reading is from a college text used in introductory education classes. Read the strategies suggested for approaching a text, and then invest some time and effort in reading this excerpt to prepare for future readings in this discipline or related ones.

If you are contemplating becoming an educator or being involved in the field of education, you may be wondering what the future might hold for you. The reading in the “Life After College” section focuses on the reflections of a first-year teacher, which will help you understand some of the difficulties and joys of the profession.

These readings will give you an opportunity to explore education as a discipline in and of itself, while also expanding on the content of the chapter. Invest in these readings to open your eyes to your own educational experiences.

Reading and Study Tips: Education

Unique Features and Comprehension Strategies

Unique Feature of Textbooks in Education

The emphasis is on putting theory into practice.

Strategies for Comprehension

- Be sure to understand the examples presented.
- Make note cards for each concept and theory presented.
- Develop your own real-life examples of the theories to be sure you understand and to better remember.

Unique Features and Comprehension Strategies *(continued)*

Unique Feature of Textbooks in Education

Strategies for Comprehension

Education textbooks contain specialized vocabulary related to the field (often in boldface type).

- Internalize the vocabulary.
- Make note cards for each term.
- Use these new terms in sentences and apply them to situations from your own education or to what you might encounter as a teacher.
- Use the terms as often as possible—in class and when you write papers—so they become a part of your own vocabulary.

Charts and graphs are used to illustrate theory and practice.

- Learn how to read charts and graphs.
- Use them as a quick review of major concepts.
- Use them to review statistics and historical perspectives.
- Use them to compare and contrast theories and legal cases.

Education textbooks are informed by historical developments.

- Education has its own “stories” that you will need to learn so that you can apply their lessons to your understanding and your practice.

Reading 1: A Textbook Case

This textbook excerpt clearly illustrates some of the unique features of an education textbook. Pay attention to them as you read, and apply the strategies suggested in the table above. Remember as you read the following passage that it is written for teachers and potential teachers. However, even if you are not an education major, this reading is important. The chapter from which the excerpt comes is titled “Historical Development of American Education.” As you begin to write your own history in this new phase of your educational journey, it is worthwhile to reflect on where you have been. Your past school experiences have shaped you and brought you to where you are now. But have you thought much about the “why” of your educational experiences? Did you stop to appreciate what opportunities you had and how you came to have them? The history of American education can provide these answers, and the answers are fascinating. Appreciating our educational history can help us appreciate our educational future as well.

BEFORE YOU READ

Think about what you experienced in high school. Write your thoughts about why you think you learned what you did and how the organization and culture of your high school came to be.

How do your thoughts and experiences differ from some of your classmates? How are they the same?

The Development of American Secondary Schools

Common schools created the foundation for tax-supported and locally controlled public elementary education in the United States. Later in the nineteenth century, public high schools completed the institutional rungs of the American educational ladder, from which students could progress to colleges and universities.

The Academy: Forerunner of the High School

Initiated by Benjamin Franklin, academies replaced colonial-period Latin grammar schools and became the dominant secondary school during the first half of the nineteenth century. By 1855, more than 6,000 U.S. academies enrolled 263,000 students. While the Latin grammar schools were exclusively attended by males preparing for college entry, academies were both single-sex and coeducational and offered a wide range of programs both for the college bound and for terminal students.

Academy programs followed three patterns: (1) the traditional college preparatory curriculum with emphasis on Latin and Greek; (2) the English-language program, a general curriculum for those who would end their formal education with completion of secondary school; and (3) the normal course, which prepared elementary-school teachers. Some males attended military academies.

Some academies were founded to educate young women. For example, Emma Willard, a leader in the women's rights movement, established the Troy Female Seminary in New York in 1821. Along with domestic science programs, women's academies offered classical and modern languages, science, mathematics, art, music, and the teacher-preparation, or normal, curricula. While most academies were private, some were semipublic in that they received some funds from cities or states. Academies were popular secondary schools until the 1870s when public high schools replaced many of them. However, private academies still provide secondary education for a small percentage of the population.

The High School

Although a few high schools, such as the Boston English Classical School, were operating in the early nineteenth century, the high school became the dominant secondary school after 1860. In the 1870s the courts ruled in a series of cases (especially the Kalamazoo, Michigan, case in 1874) that school districts could levy taxes to establish and support public high schools.¹ The public-high-school movement spread rapidly.² By 1890, public high schools in the United States enrolled more than twice as many students as private academies.

In the late nineteenth and early twentieth centuries, the states passed compulsory school attendance laws. Provision of public secondary schools thereafter became a state obligation, rather than a voluntary matter. Students could attend approved nonpublic schools, but the states had the legal right to set minimum standards for all schools.

SOURCE: From Allan C. Ornstein, *Foundations of Education*, 10th ed. © 2008 Wadsworth, a part of Cengage Learning, Inc. Reproduced by permission. www.cengage.com/permissions.

¹ See *Stuart v. School District No. 1 of Village of Kalamazoo*, 30 Mich. 69 (1874).

² L. Dean Webb, *The History of American Education: A Great American Experiment* (Upper Saddle River, N.J.: Pearson / Merrill/Prentice Hall, 2006), pp. 173–183.

Like many educational movements, the drive for compulsory education arose from mixed motives. The progressives were among the prime movers for compulsory education. They worked for the enactment of child labor laws, such as the Keating-Owen Child Labor Act of 1916, which restricted employment of children and adolescents so that they would attend school rather than enter the work force. There was an element of social control in the progressive agenda insofar as the high school could shape adolescents into the progressives' model of the good American. Compulsory attendance also had its opponents among immigrant parents, who feared it was a strategy to erode their children's ethnic heritage, and among farmers, who needed their children to work on the farm.³

Urbanization and the High School

The high school's popularity resulted from the convergence of important socioeconomic and educational trends. In the late nineteenth and early twentieth centuries, concurrent with the rise of the high school, the United States dramatically changed from an agricultural and rural society to an industrial and urban nation. For example, New York City's population quadrupled between 1860 and 1910. By 1930, more than 25 percent of all Americans lived in seven great urban areas: New York, Chicago, Philadelphia, Boston, Detroit, Los Angeles, and Cleveland. The high school was an educational response to an urban and industrial society's need for more specialized occupations, professions, and services.⁴ Accompanying this socioeconomic change were important developments in adolescent psychology. G. Stanley Hall, for example, argued that adolescence, the high-school years, marked a crucial stage in human development that was best served in a special adolescent institution, the high school.

Reshaping the High-School Curriculum

Since the high-school movement was generated by diverse social, economic, and educational factors, educators, unsure of its mission, developed differing versions of its purpose and curriculum. While liberal arts college professors saw it as a college preparatory institution, vocational educators wanted it to train people for the work force. In some large cities, high schools, called "people's colleges," offered both liberal arts and science as well as work related programs.⁵ In 1892, the National Education Association (NEA) established the Committee of Ten, chaired by Harvard University President Charles Eliot, to define the high school's mission. The committee made two important recommendations: (1) uniform teaching of subjects for both college preparatory students and those ending their formal education upon graduation; and (2) eight years of elementary and four years of secondary education.⁶ It identified four curricula as appropriate for the high school: classical,

³ Michael McGeer, *A Fierce Discontent: The Rise and Fall of the Progressive Movement in America, 1870–1920* (New York: Free Press, 2003), pp. 190–191.

⁴ Jurgen Herbst, *The Once and Future School: Three Hundred Years of American Secondary Education* (New York: Routledge, 1996); and William J. Reese, *The Origins of the American High School* (New Haven, Conn.: Yale University Press, 1995).

⁵ Herbst, *The Once and Future School*, pp. 95–106.

⁶ National Education Association, *Report of the Committee on Secondary School Studies* (Washington, D.C.: U.S. Government Printing Office, 1893).

Latin-scientific, modern language, and English. However, there was a general college preparatory tendency in the recommendations since each curriculum included foreign languages, mathematics, science, English, and history.

By 1918, all states had enacted compulsory attendance laws, with thirty states requiring full-time attendance until age sixteen.⁷ Increasing enrollments made high-school students more representative of the general adolescent population and more culturally varied than in the past when students were primarily from the upper middle classes.

The NEA's Commission on the Reorganization of Secondary Education in the *Cardinal Principles of Secondary Education* (1918) responded to the socioeconomic changes in the high-school student population. The commission redefined the high school as a comprehensive institution serving the country's various social, cultural, and economic groups. It recommended differentiated curricula to meet agricultural, commercial, industrial, and domestic as well as college preparatory needs while maintaining its integrative and comprehensive social character.⁸ The Commission's recommendations reflected the ideas of Herbert Spencer discussed in the chapter on Pioneers of Modern Teaching.

Secondary-School Organization

By the 1920s, high schools had developed four curricular patterns: (1) the college preparatory program, which included English language and literature, foreign languages, mathematics, natural and physical sciences, and history and social studies; (2) the commercial or business program with courses in bookkeeping, shorthand, and typing; (3) industrial, vocational, home economics, and agricultural programs; and (4) a general academic program for students whose formal education would end with graduation.

Despite variations, the typical high-school pattern followed a four-year sequence encompassing grades 9–12 and generally including ages fourteen to eighteen. Variations included reorganized six-year schools, where students attended a combined junior-senior high school after completing a six-year elementary school; three-year junior high schools, comprising grades 7–9; and three-year senior high schools for grades 10–12.

Educators designed the junior high school as a transitional institution between elementary and high school that was oriented to early adolescents' developmental needs. As they developed in the 1920s and 1930s, junior high schools were either two-year institutions that encompassed grades 7 and 8, or three-year institutions that also included the ninth grade. The junior high school curriculum extended beyond that of elementary schools by including some vocational and commercial courses. By 1920, there were 883 junior high schools in the United States. By the 1940s, more than 50 percent of young adolescents were attending junior high schools.⁹

⁷ L. Dean Webb, *The History of American Education: A Great American Experiment* (Upper Saddle River, N.J.: Pearson/Merrill/Prentice Hall, 2006), p. 176.

⁸ Commission on the Reorganization of Secondary Education, *Cardinal Principles of American Secondary Education*, Bulletin no. 35 (Washington, D.C.: U.S. Government Printing Office, 1918).

⁹ Douglas MacIver and Allen Ruby, "Middle Schools," in James W. Guthrie, ed., *Encyclopedia of Education*, 2nd ed., vol. 5 (New York: Macmillan/Thomson Gale, 2003), p. 1630.

In the 1960s, middle schools became another type of transitional institution between elementary and high school.¹⁰ They generally include grades 6–8 (ages eleven through thirteen) and facilitate a gradual transition from childhood to adolescence by emphasizing programs oriented to preadolescent development and needs. Often using new architectural designs, middle schools featured learning centers, language laboratories, and arts centers. Their numbers grew rapidly from 1,434 in 1971 to 9,750 in 2000.¹¹ Although most school districts today use the middle school model, some retain the junior high school approach.¹²

The Development of Educational Technology

Since the mid-twentieth century, America's schools have integrated educational technology into their classrooms. Using technology in classroom instruction is an important component of preservice teacher-education programs. Competency in educational technology is mandated by many state certification programs and is a standard in professional teacher accreditation.

Educational technology entered the schools in the 1930s with the introduction of radio and motion pictures. Although often add-ons rather than integrated into the curriculum, these innovations infused instruction with dynamic audio and visual elements. Alexander J. Stoddard initiated the National Program in the Use of Television in the Schools in 1957 and the Midwest Program on Airborne Television Instruction began telecasting lessons to schools in 1961.¹³ Along with educational television, programmed learning, computer-assisted instruction, educational videos, and other instructional technologies were being used in the schools by the early 1970s. Today, many high schools have their own television studio and channel. Closed-circuit television frequently augments preservice teacher education, providing student teachers with an instant videotaped critique of their teaching.

The 1990s saw large-scale development and implementation of computer-based educational technology. Electronic data retrieval, the Internet, and computer-assisted instruction marked a technological revolution in education.¹⁴ Tim Berners-Lee, with Robert Cailliau, developed the prototype for the World Wide Web in 1990, creating an electronic means of quickly disseminating and accessing information. An important development occurred when Marc Andresen and Eric Bina in 1993 developed Mosaic, a software program capable of electronically displaying graphics with accompanying texts.¹⁵ States and local school districts

¹⁰ For a discussion of middle-school education, see Thomas Dickinson, ed., *Reinventing the Middle School* (New York: Routledge Falmer, 2001).

¹¹ MacIver and Ruby, "Middle Schools," p. 1630.

¹² For developments in middle-school education, see Anthony W. Jackson and Gayle A. Davis, *Turning Points 2000: Educating Adolescents in the 21st Century* (New York: Teachers College Press, 2000). For trends see Jerry W. Valentine, "United States Middle Level Grade Organization Trends" at www.mlle.org/docs/USMI.

¹³ Gerald L. Gutek, *An Historical Introduction to American Education* (Prospect Heights, Ill.: Waveland Press, 1991), pp. 206–207.

¹⁴ For an historical perspective, see Michael E. Hobart and Zachary S. Schiffman, *Information Ages: Literacy, Numeracy, and the Computer Revolution* (Baltimore, Md.: Johns Hopkins University Press, 1998).

¹⁵ www.boutell.com.

rushed to increase the number of computers in classrooms, improve Internet access, and provide increased technical support for schools. Recognizing that the country was in the midst of a technological revolution, the U.S. Department of Education issued a national plan, “Getting America’s Students Ready for the Twenty-first Century: Meeting the Technology Literacy Challenge,” in 1996, with the following goals:

- ▶ Providing access to information technology for all students and teachers.
- ▶ Helping teachers to use technology effectively in instruction.
- ▶ Developing technology and information literacy skills for all students.
- ▶ Conducting more research and evaluation to improve technology instruction.
- ▶ Transforming teaching and learning through digital content and networked applications.¹⁶

Today, teacher-education units include preservice and in-service training in the use of educational technology in professional development programs.

The American College and University

The colonial colleges were established and controlled by religious denominations. Believing that an educated ministry was needed to establish Christianity in the New World, the Massachusetts General Court chartered Harvard College in 1636. By 1754, Yale, William and Mary, Princeton, and King’s College (later Columbia University) had also been established by various denominations. Other colonial colleges were the University of Pennsylvania, Dartmouth, Brown, and Rutgers. The general colonial college curriculum included (year 1) Latin, Greek, Hebrew, rhetoric, and logic; (year 2) Greek, Hebrew, logic, and natural philosophy; (year 3) natural philosophy, metaphysics, and ethics; and (year 4) mathematics and a review of Greek, Latin, logic, and natural philosophy.¹⁷

Since the opening of the University of Virginia in 1825, states have been establishing colleges and universities. The model for the modern state university is the University of Virginia, designed by Thomas Jefferson, with the purpose of encouraging the “illimitable freedom of the human mind . . . to follow truth wherever it may lead.”¹⁸ Churches continued to sponsor liberal arts colleges throughout the country, especially in the new states that entered the Union.

By the early 1850s, critics of traditional liberal arts education argued that the federal government should provide land grants to the states to establish more practical agricultural and engineering institutions. In response, the Morrill Act of 1862 granted each state 30,000 acres of public land for each senator and representative in Congress. The income from this grant was to support state colleges for

¹⁶ See www.ed.gov/Technology/clearing/index.html (03/27/2001).

¹⁷ Frederick Rudolph, *The American College and University: A History* (Athens: University of Georgia Press, 1990).

¹⁸ Noble E. Cunningham, Jr., *In Pursuit of Reason: The Life of Thomas Jefferson* (New York: Ballantine Books, 1987), pp. 344–345.

agricultural and mechanical instruction.¹⁹ Land-grant colleges provide agricultural education, engineering, and other applied sciences as well as liberal arts and professional education. Many leading state universities originated as land-grant colleges. Still another important development in higher education came when Johns Hopkins University was founded in 1876 as a graduate research institution based on the German university seminar model.

Today, one of the most available and popular higher-education institutions is the two-year community college. Many two-year institutions originated as junior colleges in the late nineteenth and early twentieth centuries when several university presidents recommended that the first two years of undergraduate education take place at another institution rather than at a four-year college. After World War II, many junior colleges were reorganized into community colleges, and numerous new community colleges were established with the broader function of serving their communities' educational needs. Important constituents in statewide higher-education systems, community colleges are exceptionally responsive in providing training for technological change, especially those related to the communications and electronic data revolutions.

The greatest growth in American higher education came after World War II with the enactment of the Servicemen's Readjustment Act, known as the G.I. Bill, in 1944. To help readjust society to peacetime and reintegrate returning military personnel into the economy, the G.I. Bill provided federal funds for veterans for education. Tuition, fees, books, and living expenses were subsidized, and between 1944 and 1951, 7,800,000 veterans used the bill's assistance to attend technical schools, colleges, and universities. The effect was to inaugurate a pattern of rapid growth in higher-education enrollments that continues today.²⁰

AFTER YOU READ

What did you learn from reading this textbook excerpt that you did not know before? How does what you learned affect how you view your high school experiences as you enter your college years? How can learning such education history help college students?

¹⁹ Benjamin E. Andrews, *The Land Grant of 1862 and the Land-Grant College* (Washington, D.C.: U.S. Government Printing Office, 1918).

²⁰ Gerald L. Gutek, *American Education 1945–2000: A History and Commentary* (Prospect Heights, Ill.: Waveland Press, 2000), pp. 9–14.

Reading 2: Life After College

Because one of the reasons why you are in college is to prepare for a profession, now is the time to think about what you want to do on a daily basis. The next best thing to actually experiencing the day-to-day activities of a job is to learn what professionals in different fields think about their careers. In Chapter 10, we write specifically about how important it is to connect with people in different fields. Find out what they think about their work, what they like and don't like, and what they do on a day-to-day basis. The selection that follows is one teacher's reflection on her first year as a teacher.

BEFORE YOU READ

When you think of teaching as a career, what are the positives and what are the negatives? What other careers compare to teaching in terms of challenges and rewards?

Lessons of a First-Year Teacher

It seems taboo to question one's commitment to Teach For America and to one's students. But, in fact, Ms. Ness confesses to questioning her commitment nearly every day.

When I graduated from college, I joined Teach For America and so committed the next two years of my life to teaching in one of the nation's most under-resourced school districts. Now part of the AmeriCorps service program, Teach For America has a clear mission: to give every child—regardless of race, ethnicity, background, or religion—the opportunity to attain an excellent education. Founded a decade ago, Teach For America places more than

800 college graduates every year in impoverished school districts in such urban areas as Baltimore, Los Angeles, and New York City and in such rural areas as the Mississippi Delta and the Rio Grande Valley. Teach For America teachers fill vacancies in districts that suffer from teacher shortages, most often taking the most challenging placements in the most difficult schools.

Corps members go through an intensive five-week training program before they are placed in schools. In that training, they focus on theories of education, holding children to high expectations, practical ways of becoming an effective teacher, and leveling the playing field for students who lack the educational opportunities that children

from better backgrounds take for granted. Corps members are hired directly by school districts, and many complete state credentialing programs during their two years of service. Upon the completion of their two-year commitment, more than 60% of corps members continue teaching, while the others change paths and move on to graduate schools or to other forms of employment.

In my first year of teaching, I was assigned to Oakhurst¹ Middle School in Northern California, an extremely overcrowded school with an annual teacher retention rate of just 60%. The student body is 50% Asian, 25% Latino, and 25% African American. Oakhurst is located in a rough area that is notorious for drug use, and gangs are an ever-present force. Most of my students were not native speakers of English. Indeed, in that first year, my students spoke 10 languages, including Arabic, Cambodian, Spanish, Vietnamese, and Chinese. Many were recent immigrants, and I was expected to teach them conversational and written English, as well as the state-mandated social studies curriculum.

Although I had been told before I began my Teach For America commitment that I was about to experience a harsher reality than anything I had previously known, I still believed that teaching was a 9-to-3 job and that I could leave my work at school and keep my personal and professional lives totally separate. I thought I could bring my students into my classroom, shut the door, and leave the problems of their inner-city community outside. I believed that I could instill the love of learning in my students and that they would somehow be able to forget all the turmoil they faced in their lives.

I vowed that my passion and enthusiasm for my children and for teaching would never diminish. I would never allow myself to suffer emotionally, as many first-year teachers do. I would stay positive and avoid the disillusionment that so many teachers feel. I would enter my classroom every day with the same energy and passion I started with in September. It wouldn't matter if it was a gloomy Thursday in late October or if I had been battling the flu for two weeks. I would never become the "worksheet teacher." Rather than slide grammar

worksheets under my students' noses, I would have them build the pyramids out of sugar cubes. I set high expectations not only for my students, but for myself as well.

In one swift transformation, I graduated from college, packed my belongings, and drove across the country to start life anew in an entirely unfamiliar environment, without the comforts of family, friends, and home. It was an exciting adventure at first—relocating, getting my first real job, and having the responsibilities of adult life.

But by early November, the excitement had worn off, and the reality had begun to sink in. I was living in a new city, far from my home and with no connections to my past. Maintaining a positive learning environment in an otherwise depressing place was an endless challenge: the constant planning, the discipline, the paperwork, the headaches of the district bureaucracy. I felt underappreciated by my administration and abused by my students. I would come home from school, sit on my couch, and think, "I can't go back tomorrow." I felt drained. And gradually I felt that I was letting my students down; nothing I was doing in my classroom could ever be enough to make life fair for them. I was becoming the worksheet teacher that I swore I would never be. I felt that I had lost myself in this process of trying to serve my students. And so I started asking the really hard questions, about myself, about my life, and about my commitment.

Often I feel that Teach For America is too eager to dismiss the frustrations we teachers inevitably feel about our lives and our jobs. It sometimes seems as if I am just supposed to grin and bear it through the two years. Then I can pause to reflect on my experience and say, "That was an impossibly difficult experience, but I am a richer person because of it."

Given the passion and dedication of most corps members, it seems taboo to question your commitment to Teach For America and to your students. But, in fact, I question my commitment nearly every day. I have a vivid memory of calling a friend in Los Angeles, a corps member placed in Compton,

¹Names and identifying information have been changed.

to ask, “Will you quit with me?” At first I thought that doubting my commitment made me a bad person, that some omniscient Teach For America presence was frowning down on me. In fact, maybe all this questioning of my commitment is actually a positive force that makes me push to achieve more in my classroom.

When I went home for the winter break that first year, I wasn’t sure exactly what to tell my friends and family about my Teach For America experience. Should I focus on the good or the bad of teaching? Should I tell them how I teach 97 students who speak little or no English? Should I tell them how there are never enough markers or scissors or even textbooks to go around? Should I tell them of my 12-year-old student who is now serving time in juvenile hall for armed robbery? Or maybe I should tell them about my 13-year-old student who cannot spell *dog* because he is a victim of social promotion.

Slowly I realized that I was mouthing platitudes that were simply untrue to the experience. I could barely make sense of the tension of opposites I felt in my life: Did I want to quit and get out, or did I want to devote all my life and energy to the vision of Teach For America? How should I characterize the way I felt, cynicism or optimism? Should I dwell on the bad experiences or dismiss them in light of the positive ones?

I began to reflect on my initial impressions of teaching. I remembered feeling overwhelmed on first entering the classroom. How would I even begin to teach these children English and social studies? More important, how could I teach them that education could be their way out of poverty and into a better future? How could I teach them to be upstanding citizens and to practice civility in their everyday lives? How could I teach them conflict resolution, responsibility, and self-respect? When I told my father about my worries, he told me, “Do your best. You have been handed an unrealistic situation. All that anybody can ask you to do is your best. Don’t beat yourself up over what you cannot accomplish.”

For a long time, I believed my father’s advice. I believed that I did face an unrealistic situation

at Oakhurst Middle School. I believed that it was unrealistic to think that a first-year teacher could handle such a difficult placement, in such an under-resourced school, with so little support.

But after a while, I came to realize that my father had it backwards. My situation was realistic—and that was exactly the problem. Far too many of our nation’s children attend overcrowded schools like Oakhurst that cannot provide adequate materials, instruction, or attention. Too many of our children receive a subpar education, which seems to ensure that the cycle of poverty will not soon be broken. Too many teachers are thrown into classrooms with minimal support. In such circumstances, teachers do not receive enough concrete incentives to make teaching a lifelong profession. Our best teachers are often lost before they even start to achieve success in the classroom. It is no secret that teachers are overworked, underpaid, and underappreciated; I am living proof of that.

Upon completing my first year of teaching, I struggled to make sense of the lessons that I had learned. I truly believe that I have learned more about the world in a year of teaching than I did in several years of college.

I have learned that children are unbelievably resilient. My students have been handed immeasurable challenges and have tackled them with the courage, grace, and strength that many adults fail to demonstrate. I have learned how to make personal sacrifices for the sake of a greater good. I have learned that many people in the world today would rather let [inner-city schools] be forgotten than try to solve the problems head-on. I have learned that it is rather easy to be idealistic in thoughts and words, but much harder to keep that idealism alive in actions every day. I have realized that not enough people in our society today devote their lives, their energy, and their souls to making this world a little better than they found it. I have learned the meaning and value of humility. And last, I have learned that I am only one person, but my power as a teacher will extend further than I could ever have guessed.

AFTER YOU READ

Are you surprised by the author's story? Why or why not? What did she learn from her job that she did not learn in college? Whether or not you are considering teaching, what do you hope to get out of the job you get when you graduate from college?

Here are some other careers related to education for you to investigate:

- Secondary education guidance counselor
- Elementary education guidance counselor
- College professor, Education
- Elementary or high school principal
- Librarian
- ESL teacher
- Curriculum specialist
- Training specialist
- Textbook writer
- Resource teacher
- Vocational rehabilitation counselor

And there are many more!

Compounding Your Interest: Further Readings

Education Week

www.edweek.org

Fine, J. (2005). *Opportunities in Teaching Careers*, 9th ed. New York: McGraw-Hill.

Gisler, M. M. (2002). *101 Career Alternatives for Teachers*. New York: Three Rivers Press.

Job Profiles for Educators

www.jobprofiles.org

McNergney, R. F., & McNergney, J. M. (2007). *Education: The Practice and Profession of Teaching*. Boston: Allyn & Bacon.

Teachers of English to Speakers of Other Languages

www.tesol.org

2 Motivations and Expectations for Your Investment



This chapter will cover the following topics:

- ▶ Managing Your Time
- ▶ Avoiding the Costly Art of Procrastination
- ▶ Knowing Yourself as a Learner
 - ▶ Knowing Your Learning Style—and Putting That Knowledge to Use
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- ▶ The Ins and (Mostly) Outs of Cheating
- ▶ Your Choice of Major
 - ▶ Being Undeclared
 - ▶ Declaring and Changing Your Major: What You Need to Know
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- ▶ Withdrawing from a Course: When and Why
- ▶ Incompletes—When to Take Them, What to Do Later
- ▶ The Role of Business in Our Lives: Connections and Careers

Now that you have an idea of what to expect and what is expected of you in college, you may be wondering what your motivations are for doing well and what expectations you can have for reaping rewards from your investment. The first thing to keep in mind is that you need to make the investment early in college. The earlier you get started, the greater the reward will be. This chapter will help you do that by creating an investment plan: a plan to manage your time, to study the way that works best for you (a time saver in itself!), to figure out what your GPA is (and how to get it where you want it to be), to think about your major early and often. (GPA also is referred to as QPA—see Figuring Out Your QPA later in this chapter.) Like any good investor, you, as a college student, will do well to research the market before investing, to “pay yourself first,” to consult with others who have more information than you, to invest on a regular basis,

Think About It



Answer the following questions in the space provided.

What one investment (i.e., a time management plan, thinking about careers, etc.) do you think is best to make first? Why? _____

Share your answers with your classmates in a small group.

to adhere to the “law” to avoid trouble, to know the true cost of investing, and to diversify your investments across different areas. A smart college student, like a savvy businessperson, knows that nothing will be gained in the end if investments aren’t made in the beginning. It is as simple as that. This chapter will show you how to make those early investments—and why. It will all be worth it in the end. Just as time management, smart investing, good planning, ethical judgment, and thoughtful decision making help college students succeed, so too do these same skills serve people well in the business world. Therefore, this chapter will also focus on the role of business in our lives. Some of you may be contemplating a career in the business world, for which all these skills will prepare you, but even if you are not planning on working in business, you are and will continue to be a consumer whose everyday life is affected by businesses around the world: in the products you buy, in the services you use, and in the places you go. The more you know about the business world, the better you can use the information to be not just a better student, but also a smarter consumer.

FIRST THINGS FIRST

Let’s face it; being a college student takes a lot of your time. Or it should. The irony is that it often seems as though you have more time in college than you did in high school: Classes don’t meet every day; you have a 10 a.m. class and don’t have another one until 2 p.m.; you might not even have class on Tuesdays and Thursdays. This kind of schedule can fool you into thinking you have more time than you actually do. That is why drawing up a good time management plan is the best first investment you can make. In fact, it is the investment on which all others depend. And this investment will serve you well beyond college, in any career you pursue. Making a time management plan may itself take a little time, but it will save you time in the long run. Keeping a time management plan isn’t just about keeping a calendar, however; it is also about how best to use the time you have. You use your time wisely when you really get to know who you are and how you work best. Keeping a calendar is just the beginning.

Managing Your Time

Question: How many hours should you spend studying outside of class? The answer: You should study about two hours outside of class for every hour you spend in class. If you are a typical first-year college student, you are taking a 15-credit load. Multiply that by 2 and you have 30. Thirty hours should be spent studying outside of class. If that sounds like a full-time job in itself, it is. Being a college student is now your full-time job. If you already have a full-time job and are returning to school part-time, being a college student will require you to also find two hours of study time for every hour in class. With good time management, this can be done.

How much time do you actually have? That is a good question. To begin, fill out the weekly calendar that appears on the next page. First, fill in all the things you have to do: classes, work, sports, clubs, exercising, even eating and sleeping. Estimate as best you can. Monitor your activity for a week after making this schedule, and then make adjustments to your schedule as needed. Now that you know how much time you need for all the things you must do, you have a better idea of how much “free” time you have to devote to your job as college student. Now take a highlighter and fill in each space that is not already filled. These highlighted spaces show you how much time you have left to study. And you *do* need to schedule your study time. If you don’t, your studying simply will not get done. Procrastinators and last-minute “crammers” learn the hard way that planning one’s study time all along actually creates more time for relaxation. You may wonder how to fill in the blank spaces or when to do which type of activity. Here are some tips:

- ▶ *Are you a morning person or a night person?* Don’t plan to wake up at 5 a.m. to read your sociology textbook when you normally don’t go to bed until 2 a.m. Likewise, if you can’t keep your eyes open past midnight, don’t even bother trying to fight it. Go to bed and get up early before your first class or before you have to go to work or meet family responsibilities. An hour in the morning when you are fresh is worth at least twice as much as an hour when you are tired and have to read everything three times.
- ▶ *Take a closer look at those wasted hours*—those hours between classes that you normally might spend hanging out with friends, watching TV, or taking yet another nap. If you are still on high school time, you need to rethink when you do your work. Many students think of studying (homework) as night work—or at least as after-school work. But now that you’re in college, you probably have free time in the middle of the day that often goes to waste. Take the two hours between your 8 a.m. and 11 a.m. classes, and schedule an appointment with yourself. Every Monday for those two hours, you can read your biology text . . . you get the picture. If you have a family or a job, think about the opportunities to study that come when you are sitting waiting at your child’s soccer practice or when you have some down time at your job and you are able to do your own work.
- ▶ *Use those wasted minutes as well.* Not only can you get some studying in during a brief ten-minute wait before a class starts or a few minutes in line for lunch, but this type of studying is actually some of the best you can do! What can you do in brief ten- to fifteen-minute blocks of time? You can preview a chapter you have to read later, you can brainstorm ideas for a paper, you can go over your notes, you can review some flashcards, or you can quiz a friend. Short, frequent study sessions help you remember better than one long cramming session right before a test. Think of how many of these short periods of time you have wasted because you thought you couldn’t get anything done. These short sessions really add up and keep information fresh in your mind. Also, think about getting to the room ten minutes before class to review your notes from the previous lecture. This strategy can help you get in gear and stay focused in class.
- ▶ *Plan to study each subject soon after the class and before the next one.* You will learn later in this book about the importance of reviewing material soon after

you first encounter it. If you do so, it is less likely that you will have to review the information over again—it will stay in your memory. This in itself will save you a lot of time. Look at your schedule. Plan to review what you have learned and complete any reading in each subject soon after the class and before the next one. You will stay one step ahead of the game.

- ▶ *Work harder for shorter periods of time.* Many students will block off a long period of time to study one subject but are unrealistic about what this really means. For instance, just saving five hours for studying calculus isn't helpful if you can't really concentrate for five hours on calculus. You'd be better off blocking off an hour at a time with a scheduled break in between study blocks. Just promise yourself that you will really *work* for that full hour.
- ▶ *Reward yourself later*—defer gratification until you've earned it. Students frequently make the mistake of having fun before they study. All too often, they have so much fun that they never get around to studying. Or when they do, it's not at a time that is conducive to true concentration. The best way is to be disciplined enough to get your studying finished (or at least started) before going on to other activities. Remember the tip you've just learned about using your daytime hours, because if you get your work done during the day, you'll have more evening hours to socialize, play basketball, listen to music, exercise, spend time with your children, or watch TV.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
7:00 a.m.						
8:00 a.m.						
9:00 a.m.						
10:00 a.m.						
11:00 a.m.						
12:00 p.m.						
1:00 p.m.						
2:00 p.m.						
3:00 p.m.						
4:00 p.m.						
5:00 p.m.						
6:00 p.m.						
7:00 p.m.						
8:00 p.m.						
9:00 p.m.						
10:00 p.m.						
11:00 p.m.						

- *Understand priorities.* Figuring out what's most important before the fact is a key to success. It's not going to be very helpful if you realize only after the final that you should have studied more. Or that you should have prepared for your presentation by practicing longer. Successful students (not to mention successful business executives, accountants, lawyers, computer programmers, and so on) are those who are very good at prioritizing the items on their busy schedules.

Time Out Tip

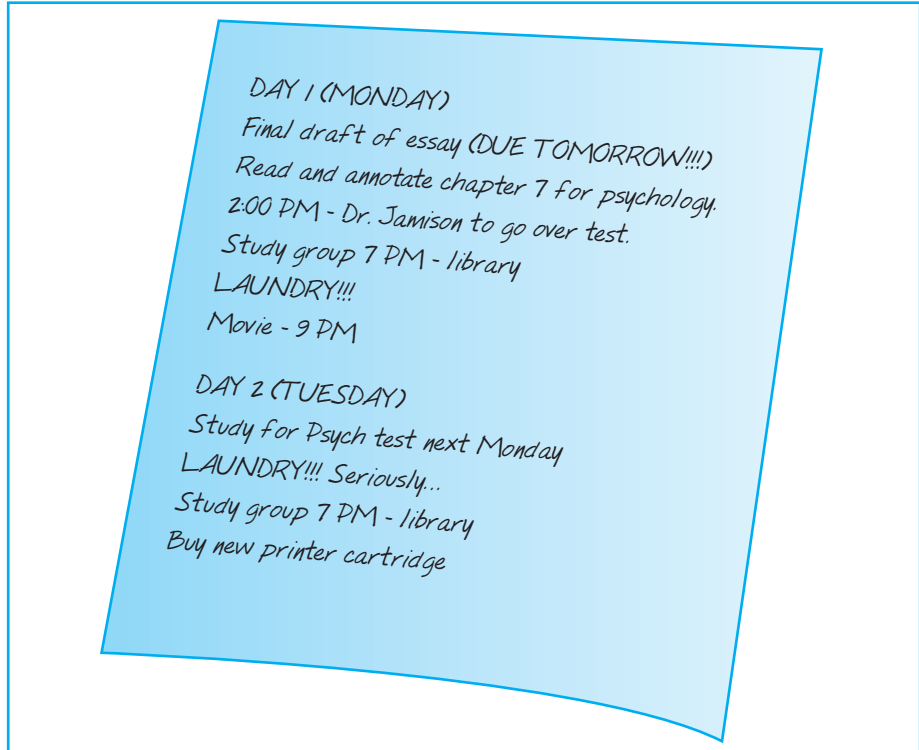


For tomorrow, try using a to-do list.

Either before you go to bed or first thing in the morning, sit down and make a list of the things you'd like to accomplish that day.

A Sample To-Do List

Before you make a to-do list, first consider your priorities. If you have a test the next day, studying for that test should take on higher importance than working on a paper that's due in two weeks or rearranging your furniture in your dorm room. Keep this list realistic; it should contain items that you really can accomplish in one day. If you've managed to cross everything off, it will give you a feeling of satisfaction, whereas if you don't (and sometimes you won't), you will know what needs to be a top priority tomorrow. Many successful people are known for keeping lists. As you can see, items that are not finished one day can move to the next



day on the list. Always remember to prioritize the items on your list, making your number-one item most important. Items that are low on the list are also of low priority. Don't procrastinate by doing only the easiest things.



DIY: Do-It-Yourself Activity

1. Go out and purchase a semester calendar.
2. Gather the syllabi from all of your classes.
3. With syllabi in hand, write on the calendar the due dates of every paper or project and the scheduled dates of every test and exam.
4. Then go back a week before each due date to remind yourself that the deadline is approaching.
5. Post this calendar in a conspicuous place where you will be sure to see it every day.

Long-Term To-Do Lists

Of course, you also want to plan for the long term. At the beginning of a semester, it may seem that you have a lot of time, but time can go very quickly. Furthermore, you never know what activities or responsibilities may come up along the way to make getting a particular assignment done more difficult. Think about keeping a calendar for the whole semester.

Avoiding the Costly Art of Procrastination

It's Saturday. You have a test on Tuesday. You promised yourself you would spend this afternoon studying for it. Do you suddenly find yourself drawn to such otherwise mundane tasks as straightening your room or cleaning the house, emptying your trash, sharpening all of your pencils, and clipping your toenails? Has it suddenly occurred to you that the wilted plant in your window that you haven't noticed for a month needs to be watered? Do you feel an urgent need to call an old high school friend whom you haven't seen since graduation? If you find yourself in this position, you're practicing something that many students have refined into an art form: procrastination. It's a natural instinct to want to put off things that seem unpleasant. Studying for a test can be hard work. But there is a cost to such a delay, a price to be paid. If you don't study on Saturday, you're going to feel guilty on Sunday. If you put it off again on Sunday—guess what? It's now Monday night. You feel completely unprepared. What typically happens next is often that venerable—but mostly ineffective—college tradition: the all-nighter (see Chapter 4 for reasons to avoid this).



Think about the student in this photo. Do you think he is studying or working on a paper? Do you think he might be trying to multitask, working on a project while also checking e-mail or instant messaging? How do you stay focused on a task? Do you need music in the background while studying? Can you do two things at one time or not? What do you think is the most effective way for you to get your own work done?

Here are a few tips for avoiding procrastination:

Make a schedule—and stick to it. If you don't have a schedule, you may be tempted to do the easier tasks first, or just to do what your friends are doing. Having your own list will help you keep track of your own deadlines. Also, writing down what you need to do helps you *remember* what you need to do. Your deadlines are there in black and white.

Reward yourself when you stick to it—but only after you've completed the task! If you study as planned on Saturday afternoon, go out and have pizza with friends that night—guilt-free!

Start working in small chunks. Don't say, "I'm going to chain myself to the desk for five hours." Try, "I'll sit here for fifteen minutes and see what I get done." What you'll often find is that once you break the ice and get started, your work will gain some momentum of its own. Fifteen minutes will turn into an hour.

Recognize when you are procrastinating. Learn to recognize the signs. If you suddenly have an urgent need to do something trivial that hasn't been done for months, you're probably procrastinating. (If the distracting mundane task happens to be doing the laundry that has been piling up or cleaning up your room, move to another study location so that you can focus. Also, you can add these items to your to-do list so that you can get them off your mind and get back to the important task at hand.)

Recognize the price you will pay for procrastinating. Just because you have put something off now doesn't mean you're never going to have to do it. What it means is that you will have even less time to do it and be more rushed.

It's only natural to feel some aversion to things that are, or at least seem, unpleasant. That impulse to avoid must itself be avoided. Remember that, very often, the task isn't so bad once you get started; it's just getting started that is the problem. And that pizza you have with your friends is going to taste a lot better if you did your studying first. Ultimately, successful students learn to overcome the urge to procrastinate—a temptation that we all experience—and start doing what they need to do on time.

Knowing Yourself as a Learner

Now that you understand what kind of time commitment being a college student will demand of you, you also probably realize that you don't have much time to waste. That said, the best thing you can do to make the most of your time is to know yourself as a learner. What does that mean? It means to understand how you learn best, what it takes for you to remember something, and what times and

environments are best for you to study. It is not complicated, but it does require a little reflection.

Remember the earlier questions: Are you a morning person or a night person? Can you wake up early and be ready to go? Do you prefer to sleep in and really come alive at around 11 p.m.? Likewise, do you do better studying in your dorm room alone, or do you prefer studying with a friend at the student union? Do you need someone to expect you somewhere at a specific time in order to get motivated to study? If you think back on your own behavior and experiences, these are not hard questions to answer. The harder question may be how to adjust your time and habits once you become aware of what you really should be doing.

Knowing Your Learning Style—and Putting That Knowledge to Use

One of the most helpful things you can know about yourself as a learner is your style of learning. Think back to something you were learning for the first time. Did you learn it best by actually doing it—practicing and failing until you got it right? Or did you learn best when someone explained it all to you first? Or did you examine diagrams or view a video and then go right out and try it? Imagine that you're taking a human anatomy class (maybe you don't even have to imagine it!). Memorizing the parts of the human body can be difficult. How would you

What I Know Now

Jaleel • Business Major • Age 35 • Detroit, MI

“I was always a good student when I was in high school,” Jaleel said to his economics professor one day when he went to see her during office hours. “I just don’t know why I am flunking this class.” His professor asked him what he did to prepare for the last exam. “I studied for hours!” Jaleel said, exasperated. He knew he had some catching up to do since he hadn’t been in school for 15 years, but he thought his work experience and dedication would see him through. When his professor asked him how he studied, Jaleel replied that he looked over his notes. His instructor explained that although this approach may have worked in high school or for other classes, Jaleel might not be studying in the best way for his learning style. Jaleel didn’t even know then what a learning style was, so he went to the tutoring center on campus and took a learning styles inventory. It turned out that Jaleel is a visual learner. “I was amazed to find this out,” Jaleel said. But he didn’t just learn this about himself. He actually applied this knowledge to his study techniques with the help of a tutor. Now he always makes index cards. He creates charts and graphs whenever he can. He even makes silly pictures and diagrams to help him learn the information. He looks over his study cards and other visual aids in his free time at work or during his lunch break and has now pulled his economics grade up to a B. “I was just wasting a lot of time before I applied my learning style to my studying. What I know now is that just putting in time does not guarantee a grade. Studying the right way does.”

approach it? Would you sit there with a diagram or would you draw it over and over again? Would you look at the list of terms and try to associate them with their definitions? Or would you talk about the terms with someone else in your class? Many students combine more than one approach. The key is knowing which technique is most effective for you, because many students make the mistake of using one that does not make the most of their natural inclinations.

You just learned about time management. Learning about your learning style is a time management issue. If you don't take the time to figure out what your style is, you may be wasting many hours learning in an ineffective way. For example, if all you did in high school was look over your notes, that may have worked—then. But if you really are the kind of learner who needs to learn complex information by writing it down or talking it over, you're going to need to learn some new approaches. Otherwise, you will end up with a low return on your investment of time.

Basically, out of many different ways to learn, there are three main learning styles:

- ▶ **Visual**
- ▶ **Auditory**
- ▶ **Kinesthetic**

It's important to have a general idea of your own personal learning style. One way to find out where your strengths lie is to take a look at your own style. There are many tests that will help you do this, and some of them are probably available in your campus tutoring center or online. To get a general sense, look at the following student profiles and see which one most closely resembles you.

Antonio prefers to get his daily news from the radio rather than from the newspaper. When he bought a new cell phone, he learned to program it by asking a couple of friends who had bought the same model. When Antonio has trouble with a math problem, he speaks the numbers out loud to work through it. He studies for tests primarily by talking to his friends in study groups. Sometimes, he records lectures so that he can listen to them again later.

Shanelle doodles all the time in her classes and when she's talking on the phone. When she bought her new cell phone, she spent an hour looking at the diagrams in the manual that came with it. She keeps up with what's going on in the world by checking the Internet or the daily paper. When Shanelle gives directions to a friend, she mentions all the visual landmarks. She can't do math in her head or out loud; she has to write everything down on scratch paper. She likes to sit quietly and read her notes alone to study for tests. She finds index cards especially helpful.

Ian likes to walk around when he studies. Sometimes, he even juggles bean bags while he's memorizing information. He likes math puzzles and projects. Ian tends to press down heavily with his pencil when he writes and often retraces words and diagrams on his paper.

Who are you most like? If you are like Antonio, you are an auditory learner. If you are more like Shanelle, your strengths are visual. And, finally, Ian is a kinesthetic learner. Of course, you could have some combination of these characteristics. You can learn from all of them. Depending on your predominant style, use the following suggestions to help you determine how to study optimally.

Style	Definition	Adaptations
<i>Visual</i>	Visual learners learn through spatial relationships and associations.	To take full advantage of your visual learning strength, be sure to make outlines, charts, or concept maps of the information you must learn. Draw silly pictures or stick figures to represent terms or concepts. Put your information on note cards that you can look at over and over again. Try to take classes with professors who present information in forms other than a lecture: PowerPoint, charts, slides, videos. Learn to take information from an auditory format, if that is all you have, and turn it into visual information. The more you do this, the easier it will become. And it will take less time for you to learn, understand, and remember the information. It just makes sense.
<i>Auditory</i>	Auditory learners learn through listening. They associate ideas and instructions with procedural steps and with the physical location or situation they were in when they first heard the idea.	Record lectures (with the professor's permission, of course) and then listen to each lecture again later. Record yourself reading your notes. Work with a study partner and discuss the material. When taking a test, try to recall where you were sitting when you first heard the information. Often, you will "hear" the material again as you recall it. It's a nice technique that not enough auditory learners use. Most people have heard of visualizing. Let's just call this "auditorializing."
<i>Kinesthetic</i>	Kinesthetic learners learn through their actions and through the physical movements their body makes, whether it be movements of the hands, the feet, or the body as a whole.	When studying, write down material, walk around while memorizing material, and, if necessary, study in bursts of ten or fifteen minutes divided by two- to three-minute activity breaks (walk around the room, do calisthenics). This will enable you to dissipate any nervous energy and to focus effectively on the study task at hand.

Teamwork Activity

Be active! The object of this activity is to create your own *active* learning activity. Gather three or four students from your class and form a “creative team.” Pick a topic and create an activity for the rest of the class to do that would require active learning on their part. For example, let’s say you wanted to teach the students three new words in another language. What might you do to get them actively involved? What if you wanted them to learn a few important facts about another country? What would you do that would keep them from being passive learners? What if you wanted the students to understand a new math concept? Find your topic. Form your lesson plan, then write it here:

Then try it out on the rest of the class. See how active they are and how much being active affects their ability to learn and remember the information. You will be convinced!

Active Versus Passive Learning

What words would you use to describe an active person? How about energetic, on-the-go, dynamic, bustling, animated, industrious, engaged, quick, lively, practical, eager, earnest, enterprising? The list goes on. What about passive? Inert, phlegmatic, apathetic, placid, resigned, out of it, motionless, listless. You get the picture. Many students are able to get through high school as passive learners, but college is a different story. College is not a TV show where you just sit back and let the action unfold in front of you. It’s more like a play, but you’re not in the audience now, you’re on the stage. How would you feel if you were on stage and had no idea what your lines were because you hadn’t prepared? That’s how you’re going to feel in college if you continue to be a passive learner.

Active Learner

Asks questions in class
 Seeks help from professors and/or tutors
 Forms study groups
 Finds outside supplemental material
 Studies according to learning style

Passive Learner

Sits quietly in class
 Stays confused
 Studies alone (or not at all)
 Uses only the course textbook
 Studies the same old way

Being an active learner is important in college. There’s no way around that. Why? The amount of information you need to process is greater. The amount of time you need to learn it in is often shorter. The complexity of the information is considerable. Moreover, in many courses, professors don’t want you just to recite

information back to them. Rather, they want you to interact with the material, as we will discuss later in the chapter on critical thinking. For now, though, think about what you can do to be an active learner.

Is it possible to go from being a passive learner to being an active learner? Of course, although it's not always an easy transition. First, you need to recognize passive traits in your own study habits and replace them with active ones. Here are some techniques to get you started.

- ▶ **Force yourself to ask questions in class.** Don't wait for others to speak up because they may not, and you'll be left without the answer you seek. Set a goal for yourself. Ask at least one question a week for starters. Sometimes you just need to break the ice internally, and over time you'll become more comfortable with it (and you'll start to see the benefits).
- ▶ **Answer questions in class.** The more engaged you are in the discussion, the better you will remember the material. If you know it, show it. Too many students wait for someone else to answer, even when they know the answer.
- ▶ **Visit your professors during their office hours.** Plan to see each one at least once during the semester, preferably early in the semester. For one thing, it helps them know who you are, and it will help you feel more comfortable speaking up in class.
- ▶ **Form a study group.** Find others in your class who seem interested and prepared for class. See whether they want to meet up once or twice a week to discuss and review material. One caveat: Make sure that your group is really studying. Sometimes, study groups can disintegrate into a social hour, which doesn't really help. The more opportunities you have to talk about the information, the more likely it is that you'll remember it. Sometimes the best way to learn is to teach. Also, if you missed something or didn't quite understand it, this is a good way to clear up the confusion.
- ▶ **Get extra material.** Most classes have a textbook and notes. But you can rest assured that your professor didn't get all the materials for her lectures from the textbook alone. Professors use lots of supplemental materials. So should you. Do your own research at the library or on the Internet. Sometimes, reading about the material from another person's viewpoint will shed more light on it.
- ▶ **Know your learning style.** And study accordingly.

The Ins and (Mostly) Outs of Cheating

Cheating. No matter what, there are probably always going to be some people who cheat in college. After all, college is really no different from any other aspect of society. In recent years, just as there have been some major scandals at some large companies, there have been major cheating scandals at some of the nation's top colleges. But remember, you are making a major investment in coming to college. It pays to learn the rules up front so that you don't cheat *yourself* out of your returns. College has many rules, and not cheating is one of them.

It's easy enough to say that you shouldn't cheat because it's wrong. For many people, the fact that cheating is intrinsically wrong is enough of a reason not to do it. For those looking for external reasons, your college's handbook of policies and procedures should give plenty of reasons not to cheat. Penalties for cheating range from getting a failing grade on an assignment to getting an F in the class and, in some cases, dismissal from the institution. Your reputation is at stake. You don't want to damage your integrity in the future by taking an unethical shortcut now.

Types of cheating vary, but they range from bringing in cheat sheets to "pre-viewing" tests—getting a copy of the test in advance and memorizing the answers. Some students have even gone high tech, using cell phones and mobile pagers to "share" answers on tests.

One of the most pervasive forms of cheating is plagiarism. Plagiarism is the act of representing someone else's words as one's own. It can take many forms. The student who purchases a paper off the Internet and puts her name on it is practicing an extreme form of plagiarism. But you're also plagiarizing if you borrow a paragraph or two from a book or article and fail to cite that source accurately in your paper. In the past few years, some very high-profile scholars—Stephen Ambrose and Doris Kearns Goodwin, for example—have had their reputations tarnished by accusations of plagiarism. One rule to remember: **If in doubt, cite it!** Some students are anxious about citations because they're not comfortable with the rules. Sometimes students are afraid to cite too often. First of all, most professors would rather you made a mistake or two with your formatting than cheated. And it's hard to imagine a situation in which a professor would penalize you for having *too many* citations. On the contrary, most professors would be pleased to see that you did so much research. When you read scholarly articles for your research, you'll notice that those articles have dozens and dozens of citations, often more than one per sentence. In your college writing class, you will learn more about plagiarism and how to cite work. Typically, you will learn to use the MLA (Modern Language Association) guidelines or the APA (American Psychological Association) guidelines. Whichever system you use, don't expect to understand it all up front. You will become more familiar with it as you use it—you're learning. And even experienced scholars typically keep a guidebook next to their desk as they write. As for cheating by buying papers from other sources, such as the Internet, be aware that many universities subscribe to services that help them track down cheaters. They simply submit your paper to the service, and it will let them know whether it is original material.

Honesty in scholarship is important. Would you want a doctor who had cheated her way through medical school? Or an engineer who had "previewed" the answers to her licensing test? How would you feel about being represented at trial by a lawyer who had someone else write his papers in law school? Probably not so good. What you're learning now matters more than the grade. If you have to cheat to get the grade, then you're not really learning the material. And you're going to be developing a habit that will catch up to you sooner or later.

Cheating Hall of Shame

Basically, cheating is always a dumb move. But the following students did things that were dumber than most. Names have been changed to protect the not-so-innocent.

What the student did	What happened next	The end result
Roxanne paid her cousin to write her paper for her.	Roxanne's cousin took the money and then, without telling her, simply copied an article from the Internet.	The professor recognized that it wasn't Roxanne's writing; she received an F on the paper and dropped the class with a WF (Withdrawal-Fail); it's unknown whether Roxanne got her money back.
Not prepared for his chemistry test, Harrison wrote a cheat sheet with some of the main formulas.	Harrison had written it on yellow legal paper. When he put the paper under the white test paper, it was clearly visible.	The professor immediately saw it, and Harrison received an F on the test and for the course.
In a basic writing class, Giselle had trouble writing a paper, so she copied an article she found at the library.	The article she copied was from the <i>Journal of the American Medical Association</i> . Not surprisingly, the professor realized it wasn't Giselle's writing.	Giselle strongly denied she had cheated—until the professor dug up the article. Giselle failed the course.
Rob turned in a paper for an online course that contained a “hot-link” Internet source.	The professor clicked on the link to check the source.	The professor was surprised to find that the link took him to Rob's paper, which happened to be an article on the Internet written by another author.
Dylan, hearing from other students that his professor didn't read the entire paper, decided to find out. He wrote the first and last pages of the paper and then filled the middle pages with the words “[expletive deleted] you” over and over again.	The professor read the entire paper.	The professor wrote “‘F’ you, too!” and Dylan failed the course.
In the middle of taking attendance, the professor was called out of class. Janine walked up to the open grade book, changed an F she had received for a test into a B, and sat back down.	Several students mentioned the incident to the professor privately. In addition, the professor could clearly see the change, and she had already transferred all of the grades—including Janine's F—to an “Excel” spreadsheet anyway.	Janine was charged with academic dishonesty, received an F for the course, and was dismissed from the university.
For a math quiz, Sarah received the answers from a friend who had the same class and professor earlier in the day. She wrote the answers on the inside of the label for her water bottle.	The water distorted the answers, making them much bigger. The professor spotted them immediately as he monitored the room.	Sarah received an F for the quiz and the course. For added irony, the answers weren't right anyway. The professor had used a different version of the quiz.

(continued)

What the student did	What happened next	The end result
Chas had run out of time to write a book review for his political science class, so he asked his fraternity brothers for some help. They dug up a review from their “files,” and he handed it in on time.	Upon reading it, his professor was initially surprised at the quality of Chas’s writing. He was even more surprised when he recognized a certain familiarity in the writing. He had written the review himself three years earlier and had published it in a leading scholarly journal.	The professor initially complimented Chas on the quality of his writing. As soon as Chas took the bait, the professor brought out the original journal where it had been published. Chas received an F on the paper and in the course.

Your Choice of Major

One of the biggest decisions for college students, and often one of the most difficult, is deciding on a major. Many students see so many alternatives and have so many interests that they find it hard to narrow the choice down. Others can’t seem to find any area that jumps out at them; a student in this category may feel that “I can’t find anything I want to do for the rest of my life.” The main thing is not to panic. First of all, the average college student changes majors three or four times. As a first-year student, you have plenty of time to make up your mind and explore different areas, because many of the general education classes are the same regardless of your major. And as for worrying that your major might confine you to doing one thing for the rest of your life—don’t. Your major will naturally point you in one direction or another, but it’s not a contract that you have to fulfill. There are plenty of English majors who work on Wall Street, history majors working in sales, geography majors working in insurance, and pre-med students who decide to become teachers. The list goes on and on. The important thing is to get a college degree and relevant experience while in college (through work-study, summer employment, and internships, to name a few); your degree and your experience will open all kinds of doors for you.

That having been said, it is still naturally in your best interests to find a major that’s appropriate for you and your skills. If you struggled in math all through high school, maybe engineering isn’t the best field for you. If you hate to write, maybe you don’t want to become an English major. If you are still unsure of your major, one thing you can do to help you choose is research the different majors on your campus. Even if you have picked a major, you can learn about some other possibilities through this kind of research. Many colleges have dozens and dozens of majors. Often, a single department has two, three, or more twists on the major (English writing and English literature, for example). You can research the requirements of the different majors by using the college catalogue or the Internet. A major in psychology might sound appealing, but through your research you would discover that if you want to be a psychologist, you will need to go to graduate school to get a Ph.D. And to be a psychiatrist? Medical school. Thus, in those fields, a four-year degree is only going to be the beginning. In your research, you can find out what you can do with a bachelor’s degree in your major of choice. Some majors, anthropology and philosophy, for example, are generally a stepping stone to graduate school, whereas others, such as elementary education, are themselves the main prerequisite to launching a career as a teacher.

How, then, do you know what majors and careers your skills and interests are suited for? Most colleges and universities have a career center, and this is one of the best resources on campus for finding out this information. Typically, the career center will have resources such as the Major-Minor Finder, the Focus online assessment, and numerous others. In addition, the career center is likely to be a good source of information about salaries in various careers, projections of demand for specialists in different areas, and information about graduate and professional schools. Even as a first-year student, it's not too early to begin looking through this information. Also, you should take advantage of any opportunities you have to explore your interests through on-campus activities and the general education courses you need to take (you never know when a light will go on!). Your advisor is another excellent source of information about majors and careers, and he or she can also help you through additional assessments and activities to help you target areas of interest.

Even though there's no rush, in the beginning of your college career, to declare a major immediately, you don't want to wait longer than necessary. Why? Because at a certain point you need to start taking courses in the major in order to progress in a timely way toward graduation. In fact, at most colleges you must declare a major at about the halfway point (around 60 credits). If you wait too long, you may end up taking courses that you don't need and adding to the total number of credits (not to mention time) you will accumulate by graduation. Also, some departments won't allow you to take courses in their majors unless you've declared that major.

Being Undeclared

If you truly cannot find a major, then there is always the possibility of being an undeclared major (also called undecided or exploratory). One of the advantages of this status is that if you are unsure, it gives you the option of exploring a number of majors before picking one. Some students are admitted to college as undeclared students whereas others revert to that status after starting with one major and realizing it is not working out for them. Other students choose undeclared upon admission because they find the program they want is full, and they feel that they can come in as an undeclared and then transfer into the program they want. This can work, but be aware that sometimes the program that's full upon first admission will remain full (or at least very competitive) all the way through. If switching to such a popular major is your plan, be sure you have a Plan B that you can fall back on. Being an undeclared student can be a rewarding journey of self-discovery, and, if you are undeclared, you should take it upon yourself—make it your mission—to research actively all of the opportunities you have available.

Declaring and Changing Your Major: What You Need to Know

We earlier noted that the typical student declares and changes majors several times. This is part of the process of being a college student and exploring the possibilities for your future. In fact, it's quite a luxury. In many countries, students essentially choose their majors before college—sometimes even before what we would call

Lifeline



The Career
Services
Center on

your campus is not just for seniors. This is one of the best places to research any decision you make about your major, whether choosing one or changing one. You can take interest, major, and career inventories here. You can read books and articles about what kinds of jobs you can get with which majors. You can find out what the job market might be like in a few years before you decide what you want to do. If you wait until you are a senior to go there to learn how to write a résumé, you may just find yourself preparing a résumé for a field you never really wanted to go into in the first place. Best of all, this information is free.

high school—and then focus all of their studies on one particular area. Most U.S. colleges not only allow but even encourage students to explore their options. The general education curriculum enables you to explore many different courses and areas before you start to narrow your focus to one area.

But what do you need to know before you declare or change your major? First of all, you need to be sure that the major fits your interests and abilities. Is it going to get you where you want to go as a student? Where you want to go professionally? After all, why would you be an accounting major if what you really want to do is become a high school principal? Next, you need to know whether you meet the requirements of the major you are considering. Does it require a certain number of credits, a minimum QPA (see next section), or a portfolio? Is being admitted a competitive process where many potential students are applying, or do you simply fill out a form in the department? Once you've determined the basic application procedures, you need to look at the curriculum. What courses are required? Which of them have you already taken?

This process is even more important when you are changing your major than when you are declaring a major for the first time. Why? Because if you're changing majors, you need to know how the courses you've taken already fit into the new curriculum requirements. This is especially important if you're well into your academic career. If you decide to change from a marketing major to a speech communications major, and you already have 90 credits, you are almost certainly going to end up adding credits to the total number you're going to need to graduate. The bottom line: If you change majors late in your college career, it's probably going to delay your graduation. Early in your career, it's probably not going to be such a big problem, but in either case, it is highly recommended that you seek out your advisor before making such a decision. Again, as with all of your decisions as a college student, you want a decision of this magnitude to be a well-informed one.

Figuring Out Your QPA

Your QPA, or quality point average (sometimes also called a GPA, or grade point average), is the barometer by which your achievement as a college student is measured. It's only a number, true, but rest assured that this number, for better or worse, is going to be the single piece of data that represents to most people how well you did as a student. When you graduate, many employers will want to know what your QPA is. Naturally, a student with a higher QPA will have more of an initial appeal. You may know how great a personality you have, how well rounded you are, and the like, but if your QPA is below sea level, chances are you're never going to get to the interview to share those traits with anyone. And don't believe what you might hear about having *too high* a QPA and intimidating prospective employers. Although you may be very impressed by the 3.5 QPA you graduated with (and you should be—well done!), the person interviewing you might have graduated with a 4.0. It's a competitive world. If you're planning to go to graduate school, law school, medical school, or some other professional school, your QPA

will be one of the main factors used in determining whether to admit you (the others are standardized test scores, references, your application essay, and so on). While you are a student, your QPA will determine whether you're eligible for the Dean's List, honor societies, and scholarships, and it may even be used to determine whether you can be admitted to a certain major. If you're not doing so well, a low QPA can lead to placement on academic probation, loss of financial aid or athletic eligibility, or dismissal from the college. Needless to say, your parents and friends won't be too impressed, either.

For QPAs, most (though not all) colleges use a 4-point system. An A represents 4.0, a B represents 3.0, a C represents 2.0, a D represents 1.0, and, of course, the lowly F represents 0.0. Sounds simple enough. Let's complicate it a little by considering the fact that some colleges have a plus-and-minus system. A B+ might represent 3.33. Or it might represent 3.5. It depends on your college. This information is available in your college's catalogue. The other complicating factor is that the number of quality points you receive for a class depends on the number of credits the class is worth. For example, an A in a 4-credit science class with a lab will earn you more than a 1-credit seminar. Are you confused yet? Let's look at it a little bit differently by examining a sample fall semester grade report for Tran Ly, a first-year student. As you can see, the QPA is the sum of the total quality points earned (in this case, 46) divided by the total number of credits (16). The Biology 100 course in which Tran received an A helped her average because it was worth 4 credits. That extra credit boosted her quality points by 4.

Name Tran Ly	Grade	Quality Points	Number of Credits	Total Quality Points Earned	Quality Point Average
English 1	C	2.00	3	6.00	
Biology 100	A	4.00	4	16.00	
College Math	B	3.00	3	9.00	
Psychology 10	B	3.00	3	9.00	
Speech 1	C	2.00	3	6.00	
TOTALS			16	46.00	2.875

Now, let's assume Tran is taking 15 credits in the spring semester. Tran needs to have a 3.0 QPA to get into her desired major of biochemistry next fall. How can she figure out what she needs to earn next semester to get that average? First she needs a few pieces of information:

1. Grade point average she is trying to achieve.
2. Credits attempted (including during spring, the current semester).
3. Quality points already earned.

We already know this information. First, she is trying to get a QPA of 3.0. Second, she will have attempted 31 credits by the end of the spring semester. And she has already earned 46 quality points. Now, we plug that information into the following formula:

$$\text{Credits attempted} \times \text{QPA desired} - \text{quality points earned} = \text{number of quality points needed to earn desired QPA}$$

Let's try it and see how it works using data from Tran's grade report.

$$\begin{aligned} 31 \text{ (credits attempted)} \times 3.0 \text{ (QPA desired)} &= 93 \\ 93 - 46 \text{ (quality points earned)} &= 47 \text{ (number of quality points needed)} \end{aligned}$$

In other words, she needs at least 47 quality points to get a QPA of 3.0 for the fall. With 15 credits, if she achieved all A's, or a 4.0 QPA for the semester, that would give her 60 quality points for that semester, raising her overall QPA to 3.42.

Will Tran need any A's in order to get her desired QPA? Yes. At the minimum, she will need four B's (which will give her 36 quality points) and one A (12 more) for a total of 48.

Try this a few times on your own to see what you need to do in order to get the QPA you want. Remember, this formula works for a first-semester first-year student as well as for a junior who is graduating in two semesters. As long as you know the total credits attempted and the quality points earned, you can figure it out. Naturally, the more credits and quality points you have, the more it's going to take to change your QPA significantly. For example, Melanie has a QPA of 3.44 and 265 quality points earned so far, with 77 credits completed. Including the current semester with 15 credits, she will have attempted 92 credits. She wants to get into a professional honor society that requires a cumulative QPA of 3.5. Let's try the formula:

$$\begin{aligned} 92 \text{ (credits attempted)} \times 3.5 \text{ (QPA desired)} &= 322 \\ 322 - 265 \text{ (quality points earned)} &= 57 \text{ (number of quality points needed)} \end{aligned}$$

Melanie needs 57 quality points to achieve a 3.5 QPA in one semester. If you remember that an A in a 3-credit class is worth 12 quality points, then you can see that Melanie has to have a very good semester in order to achieve her goal. She will need to get at least four A's and one B—or a 3.8—in order to gain entry into that honor society. She can obviously make it, but you can see the difference the weight of all those credits makes.

When using this formula, just keep in mind a couple of rules:

1. If you repeat a class in which you've gotten an F, you subtract the number of credits of the class from the number of credits attempted.
2. If you repeat a class in which you've gotten a D (or, in some colleges, you can repeat C's), you must subtract the quality points earned from that class from the quality points earned, as well as subtracting the number of credits earned.

Repeating F's (and in some cases higher grades—check with your advisor) is one of the best ways to improve your QPA. Having an F is like having an anchor on your QPA.

Let's look at Rose Swanson's first-semester transcript. She took exactly the same first-semester schedule as Tran Ly. Rose, however, struggled with the adjustment to college. Problems at home affected her grades, as seen in the following chart, and she is now in danger of ending up on academic probation:

Name Rose Swanson	Grade	Quality Points	Number of Credits	Total Quality Points Earned	Quality Point Average
English 1	C	2.00	3	6.00	
Biology 100	C	2.00	4	8.00	
College Math	F	0.00	3	0.00	
Psychology 10	F	0.00	3	0.00	
Speech 1	D	1.00	3	3.00	
TOTALS			16	17.00	1.06

Now, with a 1.06, Rose has a long way to go to a 2.0 QPA if she takes 15 new credits.

$$31 \text{ (credits attempted)} \times 2.0 \text{ (QPA desired)} = 61$$

$$61 - 17 \text{ (quality points earned)} = 44 \text{ (number of quality points needed)}$$

Using our formula, Rose would find she needs 44 quality points, basically all B's (a 3.0 QPA) just to get back to a 2.0 QPA. That's a lot to ask of a student who is just coming off a 1.06.

If, however, Rose decided to retake the two F's, the formula would look like the following (remember that the two F's don't count as new credits, so we've subtracted 6 from the credits attempted):

$$25 \text{ (credits attempted)} \times 2.0 \text{ (QPA desired)} = 50$$

$$50 - 17 \text{ (quality points earned)} = 33 \text{ (number of quality points needed)}$$

That puts her in much closer range—four C's and one B will equal 33 quality points in a 15-credit schedule. What if she retook the D as well? She might do this in certain circumstances, such as if the class were in her prospective major and required a minimum of C. We'll run the formula again, removing the 3 credits from credits attempted. Remember, we will also have to subtract the 3 quality points she earned for the D.

$$22 \text{ (credits attempted)} \times 2.0 \text{ (QPA desired)} = 44$$

$$44 - 14 \text{ (quality points earned)} = 30 \text{ (number of quality points needed)}$$

Now Rose just needs to get all C's, and she will be back in good academic standing. Before you repeat any course, talk to your advisor, because doing so can have



The student in this photo is meeting with a professor during office hours. When would it be important to you to meet with any of your professors? How might meeting with a professor help you? (Be specific.)

implications for financial aid and other areas. The truth of the matter is, however, that repeating F's (the class, not the grade!) is one of the fastest ways of getting back in good academic standing. Better still, you should avoid ever getting an F in a course if at all possible. One way to do that is through withdrawal.

Withdrawing from a Course: When and Why

Withdrawal policies vary widely from college to college. Some colleges have very liberal policies, allowing you to withdraw from as many courses as you want until very late in the semester. Others are very restrictive, allowing you to withdraw from only a limited number of courses in your career. Most limit the number of weeks into the semester that you can go before withdrawing. Whatever the case, there are two things you need to know about course withdrawal.

First, you must clearly understand your college's policy. You don't want to wait too long and find you've missed the deadline, or discover too late that you've used up all your allotted withdrawals. Second, you need to know that you obviously don't get credit for a class from which you've withdrawn. Also, at most colleges, a withdrawal will appear as a W grade on your transcript. A final transcript that is peppered with W's might raise questions among potential employers or graduate schools.

Under what circumstances should you withdraw from a course? The only courses you should consider withdrawing from are courses in which you are getting a D or an F. Before you actually go about withdrawing from a course, there are three things you should do:

1. **Do a self-assessment.** Are you failing the course? Is there anything you can do to improve your performance? Is it a course you will have to take again with the same professor?
2. **Discuss your thinking with the professor.** Find out what your grade really is. Some students think they are failing but don't realize that the professor is counting participation heavily or that the professor grades harder at the beginning than at the end of the course. Ask the professor what your chances are of achieving the desired grade.

3. **Discuss your decision with your advisor.** How will a withdrawal affect your academic progress, financial aid, and so on? What are the policies and procedures governing withdrawal?

Withdrawing from a course is a big decision and shouldn't be taken lightly. It means that you will receive no credit for all the work you've already done in the course. Don't give up on a class too quickly if there's still a chance that you can pass it. If you do your research, though, you can at least be sure that you are making a well-informed decision about a withdrawal.

Incompletes—When to Take Them, What to Do Later

Sometimes, for reasons beyond your control, you may find that you are unable to complete the work in a class. Maybe you have a major illness during the last two weeks of the semester and are unable to complete the work for a course. Perhaps there's a death in the family that requires you to be out of town for the final. Most colleges have a provision for that known as an Incomplete or I grade. Normally, if you didn't take a final, you would get an F for the course. But because of certain extenuating circumstances, the professor may give you an I grade instead.

There are a couple of things you need to know about I grades. First, they are given only in exceptional circumstances. If you simply sleep through your 8 o'clock final, your professor is more likely to give you an F than an I. Second, a professor has to *know* what's going on with you. If you simply don't show up for the last two weeks, the professor might think you've just dropped the class. If you have an illness or family problem, the best thing to do is to call or e-mail the professor. In a major crisis, you can let the dean of students or the equivalent officer at your college know. At most colleges, that person will inform all of your professors. Finally, getting an I is only the first step. You still have to complete the work in a certain amount of time—usually by a specified time during the next semester. Your college's handbook will tell you exactly how long you have. At most colleges, the I turns into an F automatically if the work is not completed in time. Many professors strongly recommend that, if at all possible, you finish your work during the original semester without taking an I. Why? Because they have seen too many students not finish the work and end up getting an F.

The Role of Business in Our Lives: Connections and Careers

Just as managing your time, making good academic decisions, completing your work on time, and being an ethical person can help you succeed in college, so can these important actions also help you conduct business in the world beyond college, whether you pursue a career in the business world, need to develop business skills for other careers, or simply conduct business as a consumer. Business, in its broadest sense, impacts our everyday lives. When we purchase a cup of coffee from the coffee shop downtown or book a spring break vacation through an

online travel service, we are interacting with businesses. On and off campus, skills learned in business courses can help us navigate the financial aid process, develop and maintain a budget, take advantage of work-study opportunities, or negotiate with a landlord. Also, learning about various aspects of the business field can help us understand trends in the consumer goods marketplace as well as the job market, understand how and where to invest our money, and understand when and where to buy property or make other major purchases. Understanding how companies market products can help us become better consumers who will make informed and financially sound decisions.

Beyond enjoying the benefits of being an informed consumer, many students find that careers in business can be a great fit. There are numerous opportunities for those who have an entrepreneurial spirit, who are good with numbers and money, who love to come up with new ideas and inventions, or who like working with people. It is important, however, to become as informed as possible about the many majors and careers that business represents. While some students may feel that majoring in business is a safe bet, a sort of “catchall” major that can open many doors, the truth is that the business world is not a good fit for everybody and that having a degree in business without special skills or interests will not guarantee you a job. Having an interest in economics, marketing management, accounting, starting your own business, or selling products or services, however, will help you better decide where you might want to go with a major and a career—and getting there, while accumulating relevant experiences, will be that much more rewarding.

Increasing Your Yield

Readings for Practical Application

This chapter has covered what is expected of you in college and how you can stay motivated to do your best. You have learned how to manage your time and avoid procrastination. As a time-saving strategy, you have also learned to apply knowledge of your learning style to your own unique study habits. In light of the importance of studying well, this chapter has also discussed avoiding an age-old shortcut: cheating. Learning to learn to the best of your ability, however, is of value only if you can apply it to a field in which you are interested and capable. That is why this chapter also covered choosing or changing your major. Finally, this chapter looked at charting your progress through understanding your QPA and explained how to use the system to your advantage by withdrawing from courses when necessary or taking an incomplete so that you have more time to work on the course when you are best able.

In college, it is important for you to keep track of your own performance. In the workplace, the same is true: It is important for you to be able to manage your time to get the job done. Ethical issues in the workplace are another key consideration. The idea of picking your major and knowing your learning style is akin to knowing what career is best for you. If you know you want to be in business, for example, there are many different avenues to pursue in the field: accounting, finance, entrepreneurship, management, and so on. That is why the readings in this chapter focus on the world of business.

The Textbook Case reading, “Ethical Perceptions and International Business,” comes from a business textbook. In our increasingly global society and global economy, ethical behavior is important, as it is in college, which, like countries and business around the world, has a cultural climate and expectations of its own. Read the strategies suggested for approaching such a text, and then invest time and effort in reading this excerpt to prepare for future readings in this discipline or related disciplines.

If you are contemplating entering the business world, you may wonder about all the different fields within the discipline and what careers are possible in those fields. The Life After College reading, “Forensic Accounting: CPA Gumshoes” gives you an opportunity to think about one of the many options a business major might have in the world of work, while also touching on the issue of cheating, discussed in this chapter, which is as important in the business world as it is in college.

These readings will give you the opportunity to explore business as a discipline in and of itself, while also expanding on the content in the chapter. Read the following experts; you may be surprised by what you find.

Reading and Study Tips: Business

Unique Features and Comprehension Strategies

Unique Feature of Textbooks in Business

Business textbooks are more practical than theoretical.

Strategies for Comprehension

- Apply information to what you know in real life.
- Work in groups and get ideas from other students as well.
- Practice to be able to apply information when writing papers and taking tests.

Unique Features and Comprehension Strategies *(continued)*

Unique Feature of Textbooks in Business

Strategies for Comprehension

Business textbooks stress real-world (global, national, local) applications.

- Read real-world case studies provided in text.
- Keep up with current business trends by reading the business sections of newspapers or business newspapers such as *The Wall Street Journal*.
- Apply current events to what you read in your textbooks.

Visual literacy (ability to read charts and graphs) is emphasized.

- Read the text first, then use the visual aids to increase your comprehension.
- Preview the visual aid, then look for any keys to help you better understand.
- Apply the ideas in the visual aids to examples of your own.

Note what the professor is emphasizing in the lecture, and then review those concepts in the text.

- In reviewing textbook material, start with the information the professor has reviewed in class.
- Take notes and make study cards of the information and compare what you have to the notes you took in class.

Reading 1: A Textbook Case

The following textbook chapter is included here because of the connection between ethical behavior in college and the business world and the increasingly global society and economy in which we live. As a college student, you are preparing for life beyond your campus, which may include living in or visiting other countries, or even working for a company or organization that does business with or in other countries, each with its own unique culture. You are also learning to navigate the culture of your campus, learning to make the right decisions, which will help you succeed. In addition, you are learning about yourself as a learner, just as you learn about other people on your campus and, ultimately, other people and cultures beyond your campus. This chapter focused on making good decisions, in terms of managing your time, getting to know yourself as a learner, and maintaining academic integrity. In this business textbook reading, you will find that these issues are just as important in the world of business, especially as more businesses become a part of the global economy.

BEFORE YOU READ

How would you define international business? Can you identify an international business with which you are familiar? How do you think this business might be affected by the different cultures with which it interacts?

Ethical Perceptions and International Business

O.C. Ferrell, J. Fraedrich, & L. Ferrell

When businesspeople travel, they sometimes perceive that other business cultures have different modes of operation. There is at least the perception in the United States that American companies are different from those in other countries. This implied perspective of ethical superiority—“us” versus “them”—is also common in other countries. Table 2.1 indicates the countries that businesspeople, risk analysts, and the general public perceived as the most and least corrupt. In business, the idea that “we” differ from “them” is called the self-reference criterion (SRC).

The SRC is the unconscious reference to one’s own cultural values, experiences, and knowledge. When confronted with a situation, we react on the basis of knowledge we have accumulated over a lifetime, which is usually grounded in our culture of origin. Our reactions are based on meanings, values, and symbols that relate to our culture but may not have the same relevance to people of other cultures. In the United States, for example, dumping—the practice of charging high prices for products sold in domestic markets while selling the same products in foreign markets at low prices, often below the costs of exporting them—is viewed negatively, and the United States has a number of antidumping laws. The U.S. Congress passed

Table 2-1

2005 Perceptions of Countries as Least/Most Corrupt*

Least Corrupt	Most Corrupt
1. Iceland (9.7)	1. Bangladesh (1.7), Chad
2. Finland (9.6), New Zealand	2. Haiti (1.8), Myanmar, Turkmenistan
3. Denmark (9.5)	3. Cote d’Ivoire (1.9), Equatorial Guinea, Nigeria
4. Singapore (9.4)	4. Angola (2.0)
5. Sweden (9.2)	5. Congo, Democratic Republic (2.1); Kenya, Pakistan, Paraguay, Somalia, Sudan, Tajikistan
6. Switzerland (9.1)	6. Azerbaijan (2.2), Cameroon, Ethiopia, Indonesia, Iraq, Liberia, Uzbekistan
7. Norway (8.9)	7. Burundi (2.3), Cambodia, Republic of Congo, Georgia, Kyrgyzstan, Papua New Guinea, Venezuela
8. Australia (8.8)	8. Albania (2.4), Niger, Russia, Sierra Leone
9. Austria (8.7)	9. Afghanistan (2.5), Bolivia, Ecuador, Guatemala, Guyana, Libya, Nepal, Philippines, Uganda
10. United Kingdom (8.6), Netherlands	10. Belarus (2.6), Eritrea, Honduras, Kazakhstan, Nicaragua, Palestine, Ukraine, Vietnam, Zambia, Zimbabwe
11. Luxembourg (8.5)	11. Gambia (2.7), Macedonia, Swaziland, Yemen
12. Canada (8.4)	12. Algeria (2.8), Argentina, Madagascar, Malawi, Mozambique, Serbia, Montenegro
13. Hong Kong (8.3)	13. Armenia (2.9), Benin, Bosnia and Herzegovina, Gabon, India, Mali, Moldova, Tanzania
14. Germany (8.2)	14. Dominican Republic (3.0), Mongolia, Romania
15. United States (7.6)	15. Lebanon (3.1), Rwanda

SOURCE: From Ferrell, O. C., *Business Ethics*, 7th ed. © 2008 South-Western, a part of Cengage Learning, Inc. Reproduced by permission. www.cengage.com/permissions.

Corruption scale: 10 = least corrupt to 1 = most corrupt.

the Byrd amendment, which allows U.S. Customs to distribute money generated from foreign companies accused of dumping products to U.S. firms harmed by the dumping. However, the World Trade Organization (WTO) has ruled that this distribution of funds to U.S. firms violates its international trade rules and regulations. The WTO has recommended that the United States repeal the Byrd amendment, but the U.S. has officially rejected this recommendation. Although the United States is a member of the WTO, in this case, it has rejected its rules.ⁱ The WTO ruled that the amendment was inconsistent with the U.S. WTO obligations, and it authorized eight WTO members to retaliate against the United States.ⁱⁱ

Culture as a Factor in Business

One of the most difficult concepts to understand and apply to the global business environment is culture. Because customs, values, and ethical standards vary from person to person, company to company, and even society to society, ethical issues that arise from international business activities often differ significantly from those that evolve from domestic business activities. Distinctively international issues are often related to differences in cultures. Thus, it is important to define and explore the concept of culture as it relates to the global setting.

Culture consists of everything in our surroundings that is made by people—both tangible items and intangible things like concepts and values. Language, religion, law, politics, technology, education, social organizations, general values, and ethical standards are all included within this definition. Each nation has a distinctive culture and, consequently, distinctive beliefs about what business activities are acceptable or unethical. Distinct subcultures can also be found within many nations. Thus, when transacting international business, individuals encounter values, beliefs, and ideas that may diverge from their own because of cultural differences. This chapter will allow you to test your own “cultural IQ.”

One significant area of cultural differences is language. Problems of translation often make it difficult for businesspeople to express exactly what they mean. For example, when Bacardi created a fruity drink for the French market, it attempted to market the beverage in both France and Germany under the name Pavian. Unfortunately, “Pavian” translates as “baboon” in German. Even within the same language, words can mean different things in different countries. In Puerto Rico, for example, Tropicana brand orange juice was advertised as “Jugo de China,” where “China” translates as “orange.” But these same Spanish ads did not go over well with the Cuban population in Miami, Florida, for whom “Jugo de China” literally means “Chinese juice.”ⁱⁱⁱ

Although blunders in communication may have their humorous side, they frequently offend or anger others, derail important business transactions, and even damage international business relations. When Touchstone Pictures, a subsidiary of Walt Disney, released the films *Father of the Bride, Part II*; *In the Army Now*; *Aladdin: The Return of Jafar*; *Kazaam*; and *GI Jane*, the International Arab League

ⁱ Neil King, Jr., “WTO Panel Rules Against Law on U.S. Punitive Import Duties,” *Wall Street Journal*, June 18, 2002, A2.

ⁱⁱ “Dispute Settlement: WTO-Dispute Settlement Understanding (DSU),” Trade Negotiations and Agreements at www.dfait-maeci.gc.ca/tna-nac/disp/byrd-main-en.asp (accessed March 24, 2006).

ⁱⁱⁱ Michael D. White, *Short Course in International Marketing Blunders* (Novato, CA: World Trade Press, 2002).

accused Disney of presenting a distorted image of Arabs. Although Disney generates a large portion of revenue from foreign distributions and activities, it failed to find success with these films in Islamic and Arab countries.^{iv} Furthermore, they alienated a culture that comprises a large percentage of the world's population. Worse than the Disney disaster was a 2006 Danish comic book that depicted a sacred Islamic entity. As a result of this international incident, hundreds of people died, embassies were closed, and the potential disaster of cultural sensitivity became a reality for Western countries.

Cultural differences in body language can also lead to misunderstandings. Body language consists of the nonverbal, usually unconscious way that we communicate through our gestures, posture, and facial expressions. Americans, for instance, nod their heads up and down to indicate “yes,” but in Albania, an up-and-down nod means “no,” whereas in Britain it indicates only that the person has heard, not that he or she agrees. Pointing an index finger, a commonplace gesture among Americans, is considered quite rude in Asia and Africa. Personal space—the distance at which one person feels comfortable when talking with another—also varies from culture to culture. American and British businesspeople prefer a larger space than do South American, Greek, and Japanese. This difference can make people from different countries ill at ease with each other in their negotiations.

Perceptions of time may likewise differ from country to country. Americans value promptness, but businesspeople from other lands approach punctuality in a more relaxed manner. An American firm lost a contract in Greece after it tried to impose its customs on the local negotiators by setting time limits for meetings. Greeks deem such limits insulting and lacking in finesse.^v Americans, on the other hand, may view the failure to meet on time as a sign that future contractual obligations won't be met on a timely basis, thus increasing the potential cultural misperceptions.

Cultural differences can also become liabilities when firms transfer personnel. Consequently, large corporations spend thousands of dollars to ensure that the employees they send abroad are culturally prepared. Eastman Chemical Company, for example, has devised a preparation program so effective that 99 percent of participating employees successfully complete their term in a foreign country. Eastman's program provides cultural orientation for the entire family, not just the employee, and includes language training, a house-hunting trip, and counseling to prepare the family for life in a new culture.^{vi}

The seemingly innocuous customs of one country can be offensive or even dangerous in others. For example, employees of a California construction company presented green baseball caps to top Taiwanese company executives at a meeting. To traditional Taiwanese, however, green caps symbolize adultery. Unwittingly, the Americans had accused their associates of having unfaithful wives.^{vii} Table 2.2 lists acceptable standards of gift giving in selected areas of the world.

^{iv} Ibid.

^v David A. Ricks, *Big Business Blunders: Mistakes in Multinational Marketing* (Homewood, IL: Dow-Jones Irwin, 1983), 83–84.

^{vi} O. C. Ferrell and Geoffrey Hirt, *Business: A Changing World* (Burr Ridge, IL: Irwin/McGraw-Hill, 2000), 257.

^{vii} Tibbett L. Speer, “Avoid Gift Blunders in Asian Locales,” *USA Today* online, April 25, 2000, www.usatoday.com/life/travel/business/1999/t0316bt2.htm.

Table 2–2**Acceptable Standards of Gift Giving in Selected Countries***Japan*

- Consult the staff in better department stores in Japan to find an appropriate gift in a particular situation.
- Always wrap gifts but never in white, which is associated with funerals.
- Give and receive gifts with both hands and a slight bow.

China

- Present a reasonably priced gift only when negotiations are complete or nearly so.
- Give gifts to everyone involved, with each gift's value based on the recipient's rank.
- Do not give gifts involving amounts of four because the number is associated with death in some areas.
- Wrapping in red symbolizes good luck, but red ink is taboo because it implies the severing of a relationship.
- If Chinese people decline your gift, you should do the same if offered one by them.

Singapore

- Gift giving is not a common practice, and corruption is not tolerated.
- If necessary, give only inexpensive, token gifts, such as pens or other items with a company logo.

India

- Graft is widespread.
- Although illegal, bribes are often solicited at each bureaucratic level.
- Rely on the advice of local associates because some Indian businesspeople may expect expensive gifts while others may be offended.

SOURCE: From Tibbett L. Speer, "Avoid Gift Blunders in Asian Locales," *USA Today*, April 25, 2000, www.usatoday.com/life/travel/business/1999/t0316bt2.htm.

Divergent religious values can also create ethical issues in international business. For instance, before a British fast-food hamburger chain entered the Indian market, its market research identified an issue. The members of the predominantly Hindu ruling class in India abstain from eating beef for religious reasons, and, although other Indian religions have no taboos regarding the consumption of beef, the British firm decided not to use beef for its burgers to avoid giving offense. Some companies are not always so considerate of other cultures' values and mores, however. When Walt Disney opened EuroDisney near Paris, there was a backlash of anti-Americanism. The French viewed the company as preaching American cultural values and responded with protests, rallies, and boycotts.

One of the critical ethical issues linked to cultural differences is the question of whose values and ethical standards take precedence during international negotiations and business transactions. When conducting business outside their own country, should businesspeople impose their own values, ethical standards, and even laws on members of other cultures? Or should they adapt to the values, ethical standards, and laws of the country in which they are doing business? As with many ethical issues, there are no easy answers to these questions.

Adapting Ethical Systems to a Global Framework

“When in Rome, do as the Romans do” or “You must adapt to the cultural practices of the country you are in” are rationalizations businesspeople sometimes offer for straying from their own ethical values when doing business abroad. By defending the payment of bribes or “greasing the wheels of business” and other questionable practices in this fashion, they are resorting to cultural relativism, the concept that morality varies from one culture to another and that business practices are therefore differentially defined as right or wrong by particular cultures. For example, Exxon Mobil Corporation and Royal Dutch/Shell Group have invested heavily in developing the oil reserves of Sakhalin Island, a Russian territory north of Japan. The companies have invested \$22 billion in oil- and gas-drilling equipment not only because there may be as much as 13 billion barrels of oil in its waters but also because Russia’s environmental rules are almost nonexistent and seldom enforced. However, the seismic blasting and toxic mud associated with developing the area’s oil fields are hazardous to the endangered Western Pacific gray whale. If a spill or other accident were to occur, the nearest cleanup equipment is fifty miles away, making it impractical to save salmon and other animal species from harm.^{viii} Although the Russian government and people who live in the area are happy for the jobs, in this case the multinational investment group seems to be applying Russian cultural values toward the natural environment rather than the more stringent ones of their own countries.

Although companies in the United States are installing whistle-blower hot lines to meet Securities and Exchange (SEC) requirements under the Sarbanes–Oxley Act, recent rulings in France and Germany are challenging the legality of such hot lines. French authorities assert that the hot lines violate French privacy law because accusations can be anonymous; this creates concern that persons named by a whistle-blower aren’t told of the complaint and don’t have a chance to prove their innocence. Across Europe there are concerns about personal data and data protection. However, Xerox has an ethics help line in every country in which it operates, including Germany and France. The difference is that it is a *help* line, not a hot line, where people can ask general questions about policies. Xerox has had its code of conduct approved in every country where it applies.^{ix} It is not only the hot lines that are under pressure in other countries; in Germany a labor court ruled that parts of Wal-Mart Stores Inc.’s ethics code, including a ban on relationships between employees, violate German law. The same court also ruled against a proposed hot line for employees to report on colleagues’ violations of the code of conduct. Labor representatives from the ninety-one German Wal-Mart stores sued the retail giant over the code after it was introduced without their prior approval. Under German law, employee–management councils must sign off on a wide range of workplace conditions.^x Writing a code of conduct for a global work force can be challenging. Table 2.3 provides a framework for writing an effective global code of conduct.

^{viii} Jim Carlton, “Stymied in Alaska, Oil Producers Flock to a New Frontier,” *Wall Street Journal*, September 4, 2002, A1, A15.

^{ix} “Blow the Whistle—No Wait: Ethics Hotlines May Be Illegal in Europe,” *Business Ethics* (Fall 2005): 10.

^x “Court Rules Parts of Wal-Mart Code Violate German Law,” *Wall Street Journal online*, June 16, 2005, www.wsj.com.

As with most philosophies, cultural relativists fall along a continuum. Some profess the belief that only one culture defines ethical behavior for the whole globe, without exceptions. For the business relativist, for example, there may be no relevant ethical standards but the one of the culture in which his or her current transaction is taking place. Such individuals may adjust to the ethics of a particular foreign culture or use their own culture as a defense against something unethical as perceived in the foreign country. The disadvantage is that they may be in conflict with their own individual moral standards and perhaps with their own culture's values and legal system. Figure 2.1 shows a two-by-two matrix that relativists might use to make multicultural decisions. As business becomes more global and multinational corporations proliferate, the chances of ethical conflict increase.

Table 2-3

Writing an Effective Global Code of Conduct

1. *Form an international advisory group.* The group needs to provide content expertise and become local “champions” for the code. It should be a functionally diverse group that is geographically representative of the target markets as well as the company and management structure.
2. *Set clear objectives for the code.* It is important to establish some clear and realistic objectives for the document. Some of the most common objectives for codes of conduct are compliance, corporate social responsibility, suppliers, and partners or a values-based code. Companies need to make sure that they can follow through with enforcing a code once it is in place. If this does not occur, employees may become very cynical.
3. *Draft content.* This stage includes determining the issues, developing standards, and reviewing the preliminary draft of the code. There are four key components that should be included in each major standard: provide a rationale to explain the need for the standard, provide a clear definition of the issue, provide clear guidance (through examples, questions and answers, and the like), and discuss additional resources for information.
4. *Have knowledge about graphic design.* Cultural sensitivity plays a key role in graphic design and is required especially for the following areas: (1) the use of color—companies should be aware that color can have different meanings in different cultures; (2) use of symbols—the document should not rely on country-specific symbols such as the dollar symbol to represent currency; (3) use of photos—it is important to ensure that the photos represent the international character of the company and not one or two particular geographies.
5. *Hold focus groups and finalize content.* It is best to conduct focus groups in the native language and if possible with a translated code of conduct. Companies can use internal personnel or external personnel to conduct the focus group, but when using internal personnel, it is important to avoid using a member of management, which could stifle discussion and dissent.
6. *Translate the code.* It is important that companies understand when to translate the code and how to select translators. When there are fewer than twenty-five employees, it is best to provide a translation, but it is not necessary to reprint the code with graphics or in color. With more than one hundred employees, it is important to invest in translation and color reprinting of the code.

SOURCE: From Lori Tansey Martens, “Writing an Effective Code of Conduct,” *International Business Ethics Review*, Vol. 8, No. 1, Spring/Summer 2005, pp. 1, 9–14. Reprinted with permission.

		<i>Home Country Perceptions</i>	
		Ethical	Unethical
<i>Foreign Country Perceptions</i>	Ethical	Ethical	Ethical
	Unethical	Ethical	Unethical

FIGURE 2–1 Matrix for global relativists when making cross-cultural ethics decisions. Quadrants relate to the perceived ethicalness for global relativists doing business abroad.

AFTER YOU READ

What did you learn about the importance of ethical perception in international business? How does this affect how you think about being a consumer in a global economy? About working in a global economy? And how important do you think learning about other cultures will be to you in the future?

Reading 2: Life After College

This reading is included to invite you to ponder one of the many opportunities in the world of business. It also provides an interesting follow-up to our discussions of cheating in college, showing that a similar issue continues to be important in the workplace. While not all of you may be interested in accounting, you will find this article extremely relevant in light of the many corporate scandals in the news over the last few years. Think about your own sense of ethics as you read this article and look to the future as both an employee and a consumer. Do you like numbers? Do you like solving puzzles? If you do, you might not only find this article interesting, but also discover a whole new career possibility.

BEFORE YOU READ

When you think of the term *forensics*, what do you think of? Do you have any idea what a forensic accountant might do? Write down your ideas in the following space.

Text not available due to copyright restrictions

Text not available due to copyright restrictions

Text not available due to copyright restrictions

AFTER YOU READ

Is this the first time you heard about the field of forensic accounting? If not, how do you know about it? Do you agree with the author's contention that forensic accounting is more glamorous than accounting itself? Why or why not? How do you feel about the need for growth

in this profession? What does this say about businesses today? Are you interested in such a field? Why or why not?

Here are some other careers related to business for you to investigate:

- Logistics specialist
- Investment banker
- Retail sales manager
- Market research analyst
- Quality control auditor
- Marketing representative
- Fundraiser
- Pharmaceutical sales representative
- Nonprofit organization manager
- Actuary
- Corporate accountant
- Systems analyst
- Hotel / restaurant manager
- Personnel manager
- And there are many more!

Compounding Your Interest: Further Readings

Advertising Age

www.adage.com

American Institute of Certified Public Accountants

www.aicpa.org

American Management Association

www.amanet.org

International Association of Business Communicators

www.iabc.com

Kotler, P. (2005). *According to Kotler: The World's Foremost Authority on Marketing Answers Your Questions*. New York: AMACOM.

Liu, Y. (2002). *The Harvard Business School Guide to Careers in Finance*. Boston: Harvard Business School Press.

Segal, N., & Kocher, E. (2003). *International Jobs: Where They Are and How to Get Them*, 6th ed. New York: Basic Books.

Small Business Administration (SBA)

sbaonline.sba.gov

Stair, L. B., & Stair, L. (2005). *Careers in Business*, 5th ed. New York: McGraw-Hill.

3 Earning the Grade by Reading and Note Taking at the College Level



This chapter will cover the following topics:

- ▶ Previewing Your Textbooks
- ▶ Using Guide Questions
- ▶ To Highlight or Not to Highlight
- ▶ Annotating Your Textbooks
- ▶ Outlining
- ▶ Summarizing What You Have Read
- ▶ Assessing a Professor's Lecture Style—and What It Means for You
- ▶ Quick and Dirty Note-Taking Strategies
- ▶ Reviewing Your Notes
- ▶ Combining Textbook and Lecture Notes for the Best Study Guide Ever
- ▶ The Role of Physical Sciences in Our Lives: Connections and Careers

If this is not your first day at college and you have been to a few classes, you have already become aware of another important fact about college: you have to read and take notes on a regular basis, and more than you did when you were in high school. There is no escaping this reality, and most of the classes you take in college will require extensive reading and note taking.

The sheer amount of reading assigned at the college level can be overwhelming, especially when you have other responsibilities outside of class. In fact, you may regularly be expected to read as many as three chapters between one class meeting on, say, Monday and the next on Wednesday. If you carry at least fifteen credits, you could have five professors asking you to do the same amount of work. And this doesn't even take into account the fact that much of this reading consists of difficult

Think About It



Answer the following questions in the space provided.

What approach do you take now when you read a chapter in a textbook? Is it an effective strategy? Why or why not? How can you determine what strategies are right for you? _____

material about which you have very little prior knowledge. You are not alone. Whether you love or hate a subject, whether you had it in high school or not, whether the text is boring or exciting, the sheer amount of words and the content you need to grasp and remember may never seem greater than when you first come to college. To be successful, you need to learn some “tricks of the trade.”

As far as notes are concerned, many of your classes will be primarily lecture. Some professors, in fact, rely more on their lecture notes than on the textbook when it comes to exams. Even if you are an efficient reader, you cannot let your note-taking abilities slide. Reading and note taking go hand in hand. Needless to say, then, going to class is a very good idea. So is being prepared to take good notes while still paying attention. Finding a balance is the key.

Now that you recognize the importance of reading and note taking at the college level, you have certain options in how you approach it: Don't do it; avoid it until the last minute and get very little out of your effort; set out with no plans or strategies and let it consume all of your time; or build a reserve of tips and strategies to get the job done well, efficiently, and with time to spare. This chapter will help you choose and use the last option. Likewise, in this chapter, you will learn tips and strategies for reading textbooks in the physical sciences. There is a strong connection between note taking and textbook reading and the physical sciences. The physical sciences, and reading and writing, are hands-on. You cannot conduct a biology experiment, for example, by watching from the sidelines; you also cannot read effectively while thinking about other things or skimming the surface of the page. When reading, as well as when taking notes, you need to be an active participant, deciding which strategies will work best for you, trying them out, and seeing what the results are. The strategies themselves, however, involve very precise, active steps, very similar to steps a scientist may take in designing, implementing, and then collecting and analyzing the data from an experiment. These strategies lead to an outcome, and, in the case of your note taking and textbook reading, the hope is that the outcome will be positive.

FIRST THINGS FIRST

Before embarking on a reading and note-taking journey, you need to know a few things. First, what are you supposed to be reading? What are you supposed to be taking notes about? What will the tests cover? Are there supplemental materials you need to read in order to be prepared for tests? All these questions should be answered on your professor's syllabus. If they are not, ask! All your effort will be a waste of time if you are reading or taking notes on the wrong content. Second, know what kind of time you have to read and how much time you will have to review your notes before each exam. Managing your reading and note-reviewing time is a very important part of the learning process, especially if you are working full- or part-time, have family obligations, or are involved in time-consuming campus activities. A little planning goes a long way to avoid last-minute panic.

Previewing Your Textbooks

Think about this for a moment: Would you rent a movie without reading the back of the DVD case? Chances are you read the preview on the back either to remember what the story was about from when you saw it in the movie theater, or to decide whether you will enjoy it. Likewise, the preview on the back tells you something about the main characters, the plot, and the setting. If you have ever started watching a movie without knowing anything about it, chances are you had a lot of questions or were at least a bit confused. Plunging right into reading a textbook chapter without previewing it is a lot like this. And who wants to get about five pages into a difficult chapter due the next day, only to have to go back and reread it? Previewing works.

Here's how to preview a textbook chapter:

1. Read the **title** and **introduction** to the chapter.
2. Read all the **headings** printed in boldface type.
3. Look at all the **graphs, charts, illustrations, and photos**. This will let you know what the textbook author(s) considered important enough to enhance with graphics. Moreover, graphics are often easier to understand than text at first glance.
4. Read the **conclusion** or chapter summary. (This is not like a novel. When you study, you don't want to be surprised at the end!)
5. Read the **review questions** at the end of the chapter and skim the **vocabulary words** that may appear at the end. These are the terms you want to watch out for while you are reading the chapter.
6. You are almost ready to begin reading—after you write some guide questions.

Using Guide Questions

Guide questions give you something to *look for* as you are reading. Furthermore, writing your own guide questions and reading to find the answers is an active learning activity. Reading alone can be very passive, but the more active we make it, the better our comprehension and memory of what we have read. This technique, then, also becomes a time saver. Far too many students who don't read actively end up having to read all over again before the test. And that just doesn't make any sense. When you set up questions and read to find the answers, you have a better chance of remaining focused on the task at hand. Also, you actually see whether you are making progress and comprehending what you are reading. Can you answer the questions? If so, you are on the right track. The key, however, is to answer the questions *in your own words*. Simply writing down the exact words from the textbook is just another passive activity. And transferring them from the text to your notebook doesn't mean you understand them. Explaining in your own words does.

Here are some tips for writing guide questions:

- ▶ Turn the boldface, or bold, chapter headings into questions.
- ▶ Turn the bold terms that appear throughout the chapter into questions.
- ▶ Create “main idea” questions about the whole chapter.

- ▶ Take a shortcut and use the study questions at the end of the chapter. Read them, write them down, and then read the text to find the answers as you go along.
- ▶ For readings without headings, take a cue from the title. What do you think the reading will be about? Read the introductory paragraph. From the title and introductory paragraph, develop some questions you hope the rest of the reading will answer.

Below you will find a brief excerpt from a chapter in the textbook *An Introduction to Chemistry* by Mark Bishop. Skim the passage, but do not read it. Next, note the guide questions that follow the passage. With the guide questions in mind, go back and read the passage. Then try to answer the questions.

When you encounter a textbook section like this one, skim the text and then try to form guide questions like the ones created above. These questions will focus your reading and help you know what information to gather. Also, being able to answer them will determine whether you understand what you have read.

To Highlight or Not to Highlight

That is a good question. And one with a clear answer—most of the time. Sometimes nothing is more inviting than a shiny new yellow highlighter waiting to be slid across a pristine white page. Doing so can even convince you that you are

Accuracy and Precision

Precision describes how closely a series of measurements of the same object resemble each other. The closer the measurements are to each other, the more precise they are. The precision of a measurement is not necessarily equal to its accuracy. **Accuracy** describes how closely a measured value approaches the true value of the property.

To get a better understanding of these terms, let's imagine a penny that has a true mass of 2.525 g. If the penny is weighed by five different students, each using the same balance, the masses they report are likely to be slightly different. For example, the reported masses might be 2.680 g, 2.681 g, 2.680 g, 2.679 g, and 2.680 g. Because the range of values is ± 0.001 g, of 2.680 g, the precision of the balance used to weigh them is said to be ± 0.001 g, but notice that none of the measured values is very accurate. Although the precision of our measurement is ± 0.001 g, our measurement is inaccurate by 0.155 g ($2.680 - 2.525 = 0.155$). Scientists recognize that even very precise measurements are not necessarily accurate.

Guide Questions

1. What is precision?
2. What is accuracy?
3. What is the difference between the two?
4. What is an example of each?

Mark Bishop, "Accuracy and Precision." In *An Introduction to Chemistry* (San Francisco: Benjamin Cummings, 2002), p. 20. Reprinted with permission of the author.

What I Know Now

Lea • Criminal Justice Major • Age 19 • Memphis, TN

“When I was in high school, I always did fine by listening in class and studying at the last minute. I didn’t bother taking textbooks home,” lamented Lea as she looked back on her habits coming into college last semester. “I actually always got good grades and never thought anything of it. College, however, was a different story.” Lea was able to be philosophical about it later: “My first semester, I took a few difficult courses—biology, psychology, and economics. I had textbooks, but thought I could get by just going to class and taking good notes.” Lea realized later how wrong she was. “I got very involved during my first semester—cheerleading, pledging a sorority, going to parties . . . I didn’t think I had the time to read the books. After my first psychology test (I got a 42), I knew I needed to read the book and read it well. So I read every chapter assigned for the next test. I was ready. When I got the test back, however, I only got a 64. What I was doing wrong was not reading right. I didn’t take notes or look for the important information while I read. I was forgetting everything, so I went to the Academic Skills Center on our campus and sat down with a graduate student. She showed me how to annotate my texts. The next test, I got an 80. I was on the way up!” Best of all, Lea realized that she did have time to read. Annotating allowed her to read in small chunks and check her comprehension as she went along. Then she just studied her notes when it came time for the test. “What I know now is that annotating may seem like extra work, but it was actually a great time saver.”

really reading something. But you may be deceived. Most of the time, the answer to the question of whether or not to highlight is *don't*. Think about it. What do you do when you highlight? What are you really doing when you take that nice thick marker to the crisp new page of your textbook? You are simply changing the color of your text from black to yellow or green or blue. Have you really done anything else? Sure, you have decided something looks important enough to highlight. That in itself is a good step. But all too often, many things look important, and pretty soon the whole page is yellow. Then you are back to where you started. If your ratio of yellow text to black text is very high, you haven't accomplished the aim of highlighters in the first place. That is why, in most cases, using them is just not a good idea. Highlighters are meant to separate information out from a sea of text—to help us focus on main ideas, important terms, and so on. Yet all too often, plain and simple, too much gets highlighted. And this highlighting, then, also becomes a passive activity. How active does your brain have to be to run a yellow marker over some black type? Instead, get out the same pen you used to write some guide questions and start thinking about having a conversation with your text. Force yourself to write something in your own words (see the next section, Annotating Your Textbooks). Then, when you have done that, you may want to

go back and use the highlighter—sparingly—when you know what really is important. You can also highlight key words when you are trying to formulate your guide questions. It works.

Annotating Your Textbooks

There is very little mystery to reading for understanding and long-term memory. In order to accomplish these things, you must make your reading an active pursuit. It has to be more than opening the book to the assigned pages, moving your eyes across the text, and putting in the time until you get to the end of the chapter. One of the best ways to turn reading at the college level into an active pursuit is to learn how to annotate your textbook. If you give annotation a try, you may never go back to other ways of reading your texts. It is highly efficient and pretty painless once you get used to it.

Some students may cringe at the thought of having to take notes while reading, which is exactly what annotating is. However, those same students may be the ones who don't remember what they have read and always have to go back

and do it over again. Annotating enables you to read something once and read it well. This is because you have a conversation with your text. You read short sections of information at a time, decide what information is most important from that short section, express it in your own words, and write those words right in the margin of the text, thus reducing the text to what is most important. Think of it as “clearing the clutter.” While you are doing this, you may even underline or circle important words or terms with the same pen you are writing with—no highlighter required.



In this photo, the student on the left is reading a textbook with a pen in her hand. Using this pen, how can she make her reading an active learning experience? Be specific.

Five Easy Annotation Steps

1. Throw away the highlighters and pick up a paper and pen or pencil instead.
2. Preview what you are about to read.
3. Begin reading in “chunks.” That is, take the information in small sections or paragraphs. When you have finished reading a small section or paragraph, go back and underline the most important points.

4. Then summarize the information in your own brief words and phrases—not sentences (that takes too long and defeats the purpose!). This will help you check your understanding of that section and distill the text down to what is most important. Do not tell yourself you will do it all after you finish reading the chapter; chances are you won't, and you won't remember each paragraph anyway. Take the time to write summaries after each section. Have an ongoing conversation with yourself. Talk out loud if it helps, asking yourself, "What did I learn here?" or "What is the gist of this section?" Then use abbreviations or numbers to speed the process along.
5. Repeat step 4 until you have finished the reading assignment.

Two Bonus Steps (for even better results)

6. Go back and transfer your marginal notes to **index cards**, again rewording and reducing to get one point or idea on each card. These cards can be set up as question and answer cards as well.
7. Finally, *live with the cards*. Cards don't help the night before a test. Create some after each reading assignment and review a few of them daily, in your spare moments (while waiting in line at the grocery store, while waiting for class to start, or even during the commercials when you watch TV). Also, carrying a few cards beats carrying a few heavy textbooks, which you probably won't do. You can take index cards anywhere: to work, to the dining hall, to your child's soccer game, to the coffee shop, or to the park. If you live with and review the cards, you will be amazed at how much you remember at test time and how little rereading you will have to do. Your memory works best when given time, and you will always remember best what you say in your own words. A little review over a long period of time goes a long way! You will never again waste time when reading for a test.

Remember: It may seem to take more time to get reading done when you first use this strategy, but stick with it. Always abbreviate and summarize concisely in your own words. And realize that you will be making up the time on the other end—when it matters most—right before tests and finals. You will come to like this strategy, and the more you use it, the easier it will get. You will never pick up a highlighter again.

Read the passage titled "Classification of Matter" on page 71 from Bishop's textbook *An Introduction to Chemistry*, and see how the reader annotated it.

Try it yourself: Read the passage titled "Equal and Unequal Sharing of Electrons" on page 72 and then annotate using the steps given in this section.

How do your marginal notes look?

How do your marginal notes compare to the ones on the previous passage?

Outlining

Outlining is another note-taking strategy you may want to try with certain textbooks. Outlining works best with very linear texts (biology, chemistry, and history, to name a few). The best type of outline, and the one that you are most likely to stick with, is the informal outline. Unlike a formal outline, which uses

Classification of Matter

Compound: Contains 2 or more elements. Atoms in elements combine in same # ratio

Water = H_2O
 Sugar = $C_{12}H_{22}O_{11}$

Chemical Formula = parts of compound
 Elements in symbol # of atoms in subscripts

Pure substance = constant composition
 Mixtures = or more pure substances (composition variable)

Before getting started on your chemistry homework, you go into the kitchen to make some pasta for your six-year-old nephew. You run water into a pan, adding a few shakes of salt, and while you're waiting for it to boil, you pour a cup of coffee. Then you add some sugar to your coffee.

Pure water, the sucrose in white sugar, and the sodium chloride in table salt are all examples of chemical compounds. A **compound** is a substance that contains two or more elements, the atoms of those elements always combining in the same whole-number ratio. There are relatively few chemical elements, but there are millions of chemical compounds. The compounds in our food fuel our bodies, and the compounds in gasoline fuel our cars. They can alter our moods and cure our diseases.

Water is composed of molecules that contain 2 atoms of hydrogen and 1 atom of oxygen. We describe the composition of water with the chemical formula H_2O . White sugar is a highly purified form of sucrose, whose chemical formula is $C_{12}H_{22}O_{11}$. Its molecules are composed of 12 carbon atoms, 22 hydrogen atoms, and 11 oxygen atoms. Sodium and chlorine atoms combine in a 1:1 ratio to form sodium chloride, $NaCl$, which is the primary ingredient of table salt.

Note that a **chemical formula** is a concise written description of the components of a chemical compound. It identifies the elements in the compound by their symbols and indicates the relative number of atoms of each element with subscripts. If an element symbol in a formula is not accompanied by a subscript, the relative number of atoms of that element is assumed to be 1.

Pure water, sodium chloride, and sucrose always have the composition described in their chemical formulas. In other words, their composition is constant. Elements, too, have a constant composition described by a chemical formula. (We have seen that the formula for hydrogen is H_2 .) When a substance has a constant composition—when it can be described by a chemical formula—it must by definition be either an element or a compound, and it is considered a **pure substance**. For example, the symbol Na refers to pure sodium. The formula Na_2CO_3 refers to pure sodium carbonate and tells us that this compound is always composed of sodium, carbon, and oxygen in a constant atom ratio of 2:1:3.

Mark Bishop, "Classification of Matter." In *An Introduction to Chemistry* (San Francisco: Benjamin Cummings, 2002), pp. 96–97. Reprinted with permission of the author.

Roman numerals, an informal outline uses just bullets and dashes. With this type of outline, you identify main topics and then list the subtopics under each main topic. It is generally easy to pick out the main topics and subtopics when reading a textbook. The best way to find them is to use the previewing strategy discussed earlier in this chapter. Look for boldface section headings, definitions, and terms. In some cases, the authors have already outlined the chapter for you. If so, use this outline as a starting point, filling in more details as you read the chapter. The illustration below shows the topics in this chapter so far; now you fill in the subtopics.

Other fields within the physical sciences play a role in solving crimes. One area that may come as a surprise to you is botany. Following you will find a passage from an article profiling the botanist Jane Bock, who has been called upon many times to use her knowledge of plants to help investigators. After you read this passage, write a brief summary of your own.

Equal and Unequal Sharing of Electrons

Let's first consider the compound hydrogen chloride, HCl. When HCl is dissolved in water, the resulting mixture is called hydrochloric acid. Not only is this mixture a very common laboratory agent, but it is also used in food processing and to treat the water in swimming pools.

[Earlier], we learned about the bond between hydrogen atoms in H_2 molecules. We saw that the 2 electrons in the H_2 molecule are shared equally between the atoms and can be viewed as an electron-charge cloud surrounding the hydrogen nuclei. This sharing creates a covalent bond that holds the atoms together. There is also a covalent bond between the hydrogen atom and the chlorine atom in each molecule of HCl. It is very similar to the covalent bond in hydrogen molecules, with one important exception.

The difference between the H-Cl bond and the H-H bond is that the hydrogen and chlorine atoms in HCl do not share the electrons in the bond equally. In the hydrogen-chlorine bond, the two electrons are attracted more strongly to the chlorine atom than to the hydrogen atom. The negatively charged electrons in the bond shift toward the chlorine atom, giving it a partial negative charge, δ^- , and giving the hydrogen atom a partial positive charge, δ^+ . The lower case Greek delta, δ , is a symbol that represents *partial* or *fractional*.

When the electrons of a covalent bond are shared unequally, the bond is called a **polar covalent bond**. As a result of the unequal sharing of the electrons in the bond, a polar covalent bond has 1 atom with a partial positive charge, δ^+ , and 1 atom with a partial negative charge, δ^- .

Mark Bishop, "Equal and Unequal Sharing of Electrons." In *An Introduction to Chemistry* (San Francisco: Benjamin Cummings, 2002), p. 100. Reprinted with permission of the author.



DIY: Do-It-Yourself Activity

Make it a goal to read at least part of a newspaper every day. For one thing, reading daily will help you read more rapidly. As a runner gets faster by taking training runs, so does a reader become a faster and better reader by reading. Also, you will keep up with current events, which will help you to be a more critical participant in class and in the world around you. If you don't wish to purchase a newspaper, the library has many daily newspapers that you can read while you are there or online. Make it a habit!

Summarizing What You Have Read

During college, you are going to be asked to write summaries. And even if you are not asked, you may want to write them because summarizing is a good way to assess whether you fully understand information you have read. Writing a summary is a skill that should be learned early and used often.

What is a summary? Think of it as a shortened version of what you have just read. It should include the author's thesis (main idea) and the author's major supporting points. A summary should not be encumbered by details (supplying details is what the original is for), nor should it be an exact replica of the original (why write it then?). A summary should be expressed in your own words, but it should not include your opinions. Let's say you just saw a new movie and a friend

asked you what it was about. If you were to respond with every memorable detail, your friend might be pretty annoyed, and also, there would be no reason for her to see the movie. Most likely, you would summarize the main plot and add some information about the setting and characters. If you were asked for your opinion, you could give it, but that would not be a part of what the movie was about. This holds true for summaries. Summaries are going to be critically important to you in college. They are very basic and yet, for many students, very difficult to write. Here are the steps you can take to summarize what you read:

1. Preview what you need to read.
2. Identify the author's thesis (put the reading's main idea into your own words).
3. Annotate and underline the major supporting points.
4. Write a summary by:
 - a. Writing the author's thesis in your own words (this becomes the thesis of your summary)
 - b. Writing, in your own words, the author's supporting points

• Previewing Your Textbooks

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• Using Guide Questions

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• To Highlight or Not to Highlight

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• Annotating Your Textbook

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Of Murder and Microscopes

A few miles west of Longmont, Colorado, a narrow, granite-sided gorge called Left Hand Canyon threads its way up into the foothills of the Rocky Mountains. In 1999, just a couple of miles below the quiet mountain hamlet of Jamestown, police discovered a grisly scene: the decapitated body of a young wife and mother named Natalie Mirabal.

Not long after the body was found, Bock's phone rang once again. Could she use scraps of plants from a suspect's car to determine his recent whereabouts? The police had combed the Toyota belonging to Mirabal's husband, Matthew, and collected fresh plant material from the carpet, pedals, windshield wipers, and wheel wells. Bock visited the crime scene in Left Hand Canyon, where she skirted the still-visible gore to collect samples of plants from the surrounding forest. Back at the university, she identified both sets of samples, looking for common species.

Matthew Mirabal said that on the night of the murder, Natalie left their house in Longmont to go shopping, while he and their baby daughter stayed home. The plant material on his car suggested otherwise: At least one of the species Bock identified was not found in Longmont, but only at higher elevations, such as the site where the body was discovered. It was only circumstantial evidence, but it showed that Matthew wasn't telling the whole truth; when combined with other findings and testimony, the information led to his conviction.

Forensic botany remains a tiny and little-known field. "There's certainly no full-time work as a forensic botanist," says [David] Norris, who teaches an undergraduate elective course that covers the subject. (For one recent assignment, students were required to watch two episodes of *CSI* and critique the characters' forensic practices.)

But a few other botanists now use the cell-identification techniques developed by Bock and Norris, and the professors plan to produce another edition of their reference guidebook. Both speak frequently about what they call their "life of crime," and Norris has given presentations as far away as New Zealand and Australia. Along with Jack Swanburg and other crime solvers, they have started a nonprofit group, NecroSearch International, to find clandestine graves around the country and beyond. "People disappear all the time," Norris says. "Finding the body is the only way you have of proving that a crime has occurred."

Summary

SOURCE: © 2007 by Michelle Nijhuis. First published in *Sierra* magazine.

Remember that a summary should be brief. A summary of a one-page article, for example, should be a single short paragraph. Also, the best way to focus on what should be in a summary (and what should be left out) is to *think of an umbrella*. The umbrella itself is the author's thesis, and the other sentences you write should express only what is covered by that thesis. What is not covered by the thesis should not be in the summary (the raindrops that fall around you, hitting the ground

away from the umbrella, would include your personal opinions on the author's thesis or supporting points). Be brief. Be concise. You are not rewriting or editorializing; rather, you are highlighting the "gist" of what was said. It is that simple.

Read the passage titled "Chemistry Gets the Bad Guys," which is an excerpt reprinted in Bishop's *An Introduction to Chemistry*, and then examine the summary that immediately follows here. Take note of the format of the summary in order to see how a good summary is organized. Look for the thesis and supporting points. Also, does it fit with the "umbrella" concept?

Summary of "Chemistry Gets the Bad Guys"

Forensic scientists have improved the use of fingerprints in solving crime through new discoveries. First of all, they have identified three different types of fingerprints: plastic (prints left on soft material), visible (prints left with easily detectible materials like blood or ink), and latent (prints made with materials like oils or perspiration that cannot be seen until made visible by the addition of a substance). They have also discovered a difference between the prints of adults and the prints of children. They have found that adults have a higher concentration of molecules called esters, which

Chemistry Gets the Bad Guys

We've all seen it on TV and in the movies . . . the detective arrives at the crime scene and stalks into the room wearing a trench coat. The area is taped off, and the experts from the crime lab are already "dusting for prints." In the movies, this usually means spreading black powder that will stick to the fingerprints, but in the real world, forensic scientists have developed new and better ways to make fingerprints visible and help identify "the perp."

There are three types of fingerprints. If the people investigating a crime are lucky, the fingerprints will be either *plastic* (impressions left in soft material such as wax or paint) or *visible* (imprints made by blood, dirt, ink or grease). Usually, however, the fingerprints are *latent* (invisible patterns that must be made visible before they can be of use). Latent fingerprints are composed of perspiration, oils, amino acids, proteins, inorganic salts (such as sodium and potassium chloride), and many other substances. In order to make latent fingerprints visible, the investigator covers the area with a substance that either sticks to them more than to the surfaces they're sitting on or, in some cases, reacts chemically with the fingerprint components.

A 1993 kidnapping case provided forensic chemists with a puzzling problem. An 8-year-old was kidnapped in Knoxville, Tennessee, but fortunately, she was able to escape and identify the car used in the kidnapping. When the car was checked for fingerprints, the investigators found many latent fingerprints of the car's owner, but they could not find any fingerprints of the kidnapped girl. Knowing that this would raise doubts in the minds of the jury, they began to study differences between the fingerprints of children and adults in hopes of finding an explanation. They found that an adult's fingerprints contain a relatively high concentration of molecules called esters that are produced by the oil glands on a grown person's face and then transferred to the fingers when they touch the face. These esters are not produced until after puberty, so they are not found in a

(continued)

child's fingerprints. The ester molecules are very large, with strong attractions that lead to low rates of evaporation. This discovery, which explained why the owner's fingerprints could be found even after the child's prints had evaporated, helped convince the jury that the car's owner was guilty.

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cause strong attraction and low evaporation, making adults' prints linger longer at crime scenes. These discoveries have led to a greater rate of crime solving and conviction.

Assessing a Professor's Lecture Style—and What It Means for You

Time Out Tip



If you are having trouble catching all the information a professor is giving in lectures, ask him or her whether you can record the lecture.

Many professors (when asked) will allow students to tape lectures with a small, portable digital or tape recorder. **But don't use the recorder as an excuse not to pay attention in class.*

Replaying every lecture is time-consuming. Use the recording to "fill in the blanks" in your notes and confirm main ideas. If you are an auditory learner, listen to the recording again while walking to class, driving to campus, or making dinner.

Rosario has five different classes this semester. Her writing and biology professors are both great. They are lively and entertaining and assign lots of hands-on and group activities. Her speech professor, on the other hand, acts as though he's giving a speech—the most boring speech in the world. He never looks up, speaks in a monotone voice, and reads directly from his notes. Her psychology professor lectures, too, and shows a lot of things on PowerPoint. Because of this, the professor turns the lights down, which makes it hard for Rosario to stay awake. Finally, her political science professor cracks a lot of jokes, sometimes teasing students in a good-natured way. Rosario finds this really helpful in keeping her attention.

Anthony has five classes too, but he sees things a little differently. He doesn't like group activities much because he feels he ends up doing all of the work. His writing and biology professors "waste time," in his opinion, with all of these activities. He likes speech because he's a good note taker, and the professor speaks clearly and has a lot of good material in his notes. He loves psychology because the professor shows everything on PowerPoint, making it really easy to follow. Also, with the lights turned down, Anthony finds it easier to concentrate. He hates political science, though, because the professor gets off track making dumb jokes. Worst of all, Anthony hates to be embarrassed, and the professor sometimes makes fun of him.

Get the picture? Rosario and Anthony are in the same five classes, with the same professors, of course. Why the different perceptions? Because Rosario and Anthony are different people, and they like different things in their teachers. Rosario is a little more outgoing and likes to be active in her class. Anthony prefers a quieter class, with more direct instruction from his professors. Yet they both want—and need—the same things from their classes: to learn and to get good grades. If it is not possible for them to change to sections with other professors, does that mean they're out of luck? No. But first, note that sometimes you can change professors. How? If you do some research ahead of time—and you should do research by talking to friends and your academic advisor—you might be able to avoid some professors who just don't match your style. Naturally, your friends are going to have different perceptions than an academic advisor. But make sure the friends you consult about this matter



Looking at this photo, can you identify how the instructor might be teaching to students with different learning styles? Be specific. How would you adapt how you best learn to the way this instructor is presenting material?

respond to the same teaching approach that you do. After all, if Anthony relied on Rosario's advice about whose course to take, he'd probably end up with the exact opposite of what he was seeking. And academic advisors are probably going to be reluctant to criticize other faculty members, who are, after all, colleagues. In that case, read between the lines and think carefully about what your advisor is saying. For example, say you ask, "Should I take marine biology with Roth?" If his response is, "You might really enjoy Corgan," you might want to avoid Roth. In some cases, of course, you won't be able to avoid a particular professor, especially in your first year when you are often assigned most of your courses. What can you do to succeed in a situation like that?

First of all, to be certain what teaching styles you work best with, you need to know your own learning style, as we noted in Chapter 2. A visual learner is going to learn better with someone who uses overheads or

the board. An auditory learner will learn best with the lecture style. And a kinesthetic learner? Hands-on activities. But just because you're strongest in one area doesn't mean you're unable to learn from other styles.

Second, you need to be aware of a few archetypes, or standard teaching styles, you're likely to encounter among your professors. No one can say one style is better than another, and you could have good and bad professors within any one of these styles. But understanding the styles is a first step toward understanding how to do well in any professor's class.

Here, then, are the three major teaching styles you are likely to encounter in college:

Traditional lecture style. This professor gives information to you through lectures and expects you to take notes. There are variations within this type. For example, some lecturers ask a lot of questions and expect, even demand, responses. Others simply read their notes and expect little, if any, participation from members of the class. Another variation within this category is that some lecturers focus primarily on the facts, whereas others expect students to form opinions about the information being disseminated.

Collaborative style. This professor uses a lot of group work and discussion and generally expects a lot of participation from students. Such a professor is more likely than others to notice an individual student—including one who is not participating.

Dialectic style. This professor uses a form of teaching known as the Socratic Method. Here the professor asks questions and expects students

to generate knowledge by becoming engaged in the question and answer process. Again, individual participation is going to be very important in a class like this.

Often, the nature of the class determines which style a professor uses. The professor who lectures to the 200 students in her Introduction to Chemistry class might be very collaborative in her 12-student senior seminar. Also, many times a professor will use a combination of styles even within the same course, depending on the material covered and the response of the students. No one style is necessarily better than another; it is probable that you, much like Rosario and Anthony, will find one style more to your liking than another. What can you do to adapt to other styles when necessary? Try these tips by tracing down from your professor's style along the top to your style in the left-hand column. At the place where they intersect, you find a learning tip that is right for you.

If your professor's style is ⇒	Lecture	Collaborative	Dialectic
And your preferred style is ↓	Lecture	<ul style="list-style-type: none"> ▶ Actively participate in the group. ▶ Force yourself to take leadership roles. ▶ If you don't want to be a presenter, volunteer to play an active role by taking notes, putting together a poster, etc. 	<ul style="list-style-type: none"> ▶ Ask questions when you get a chance. ▶ Meet with the professor during office hours. ▶ Seek out a tutor with whom you can go over class notes and get hints on how you might be tested.
	Collaborative	<ul style="list-style-type: none"> ▶ Sit near the front so you can focus. ▶ Meet with the professor during office hours. ▶ Record with permission. ▶ Form a study group with other students in the class. 	<ul style="list-style-type: none"> ▶ Get involved in the question and answer; don't wait for questions to be directed to you.
	Dialectic	<ul style="list-style-type: none"> ▶ Sign up for a tutor with whom you can discuss the material. 	<ul style="list-style-type: none"> ▶ Form discussion groups within group activities.

Quick and Dirty Note-Taking Strategies

Note taking is at the heart of the college experience. You bring a notebook to class, you take notes, and then you study for your test by—you guessed it!—reading your notes. Although most students know how to take notes—after all, you just scribble things down, right?—the real issue, and a far more important one, is whether they know how to take *effective* notes. How can you make the most of the time and effort you put into note taking? First of all, you can avoid some common mistakes:

Don't try to write down everything the professor says. If you're frantically trying to write everything down, you may fall behind and miss important information. If you have read the assigned chapters *before* class, listen for the information from the textbook that the professor also emphasizes in the lecture. Write this information down. If no reading is assigned, write down information that is not only mentioned but also presented on the board, on the overhead, or on PowerPoint. Otherwise, try to pick out cues such as repeated information, and of course write down any information that the professor comes right out and says is important. Don't worry about not picking up this skill right away. You will develop it over time (and many lectures!).

Teamwork Activity

The object of this activity is to practice your note-taking and evaluation skills. Gather three or four students from your class. Take turns being the lecturer and being note takers. Have the lecturer "give a lecture" using material provided to you by your instructor or from another class. The lecturer should read the material at a moderate pace, and the note takers should take notes. After the lecture is over, the lecturer will "grade" the notes for completeness and organization. Switch roles.

"Grading" Tips

- ▶ An "A" set of notes:
 - ▷ Main ideas with supporting ideas clearly marked
 - ▷ Examples set apart with "ex."
 - ▷ Clear, consistent system of organization
- ▶ A "B" set of notes:
 - ▷ Main ideas but may have a few missing supporting details or examples
 - ▷ Examples noted but not marked
 - ▷ Inconsistent system of organization
- ▶ A "C" set of notes:
 - ▷ Some main ideas and supporting details missing
 - ▷ Some examples missing
 - ▷ No system of organization
- ▶ An "F" set of notes
 - ▷ None of the above! Don't let that happen!

Don't ignore the professor's opinions. If you do, you may miss out on some important clues to what will show up on the test. The professor's opinions can be especially important to know when it comes to essay questions. Although you certainly shouldn't be expected always to agree with the professor's opinions, you should know what they are so that if you disagree, you can make a strong case.

Abbreviations can be very helpful, but avoid using too many. In your hurry to take notes, how many times have you used an abbreviation—certain that you'd remember what it stood for—only to look over your notes later and have no clue? Although “Goodt” may make a lot of sense in class, it can be easy to forget that the professor was talking about the “German occupation of Dutch territory” and not some German general you're supposed to remember.

Reviewing Your Notes

Now that you've taken all of these notes, what are you going to *do* with them? Some students take the notes and barely, if ever, look at them again. Other students wait to look them over until right before the exam, when they “read” them again. Neither of these strategies is very effective. What's the problem? The problem in the first case, obviously, is that the student is assuming that just taking the notes is enough. It isn't. If you never look at your notes again, the whole exercise is pointless. In the second case, the student is waiting far too long between taking the notes and actually becoming engaged with them again. After all, if your course starts in early September and your first test comes in mid-October, by test time you won't have looked at the earliest material in more than a month. Some of the notes may be almost meaningless because you've lost the “context” of the material. Notes work best when you can put them in the context in which they were taken: You wrote them down while your professor was speaking, so they'll make the most sense when you can still recall your professor speaking. The best way to put them into context immediately is to read them over at least twice between the class in which you took them and the next class; this is known as the **After and Before Method**:

- ▶ Review your notes once immediately *after* the class, or at least sometime later that day.
- ▶ Review your notes a second time right *before* the next class meeting.

The first reading is important because the material is still fresh in your mind. You will still remember any unusual abbreviations; a sloppily written word will still make sense. The phenomenon that led you to write the notes—the class itself, that is—took place recently enough that you will be able to fill in any blanks in your notes. The second reading is important not only because it will help you learn the material fast but also because it will get you focused for the note taking you are about to do in *that* class. The best way to do this is to show up for class

Lifeline



If you are having trouble taking good notes in your lecture classes, ask another student or students in your class to get together for note review sessions. Such sessions really work because each of you may have gotten something the others missed. Likewise, you can confirm what each of you heard in the lecture and answer each other's questions. If you have a learning disability, register with your campus ADA office. Through this office, if it is an appropriate accommodation for you, you can often get a copy (confidentially) of the notes of a hired note taker, another student in the same class who takes good notes.

ten minutes early, take out your notebook, and see what your professor was talking about during the last class. Many professors start their lectures without any review or discussion of what they covered in the last class. While many students will spend the first few minutes of the lecture figuring out where they are, you will already have everything in context.

An added benefit of this approach is that it reduces your overall study time and enables you to avoid painful and ineffective last-minute cramming. Numerous studies have shown that learning material in small chunks over a long period of time is much more effective than trying to learn a large chunk of material in a short period of time. Another bonus is that because you are reviewing and learning your material as you go along, you will more readily grasp the context of the lectures as they progress in the course. If you put the “After and Before Method” to work, you will quickly find that you are having an easier time learning the material.

Combining Textbook and Lecture Notes for the Best Study Guide Ever

Putting it all together—that’s the final goal here. In this chapter, you’ve learned about annotating textbooks, and you’ve learned about taking better notes in class. Now, how do you combine this knowledge to study more effectively and efficiently and, ultimately, to get better grades in your classes?

Studying for a test can be frustrating. Sometimes, of course, if you didn’t go to class—or you did go but didn’t pay attention—it’s frustrating because you don’t have anything to study. But it can be equally frustrating if you find yourself with *too much* stuff: piles of notes from class, scribbles in the margins of your textbook, index cards that you made while annotating your textbook. How do you organize all of this material?

Some of the preparation should be done ahead of time, as you’re doing the work in the first place. For example, when you’re taking notes in class, always write down the date for each session. This gives you an automatic organizer, and it will help you in a couple of ways: (1) It helps you remember when material was presented, and (2) if you need to see your professor with a question, it will help your professor figure out when he or she presented it.

One of the best ways to prepare as you go through your class and text notes is to try to predict what kinds of questions your professor is going to ask on the test. To this end, be sure to attend any review sessions your professor holds. Usually, professors will tell you the format of the test (that is, the combination of multiple choice, true/false, fill-in-the-blank, short answer, and/or essay questions). Sometimes, professors will provide copies of old tests, which will give you an excellent idea of the types of questions they might ask. Another effective technique is to brainstorm potential questions with a study group.

The next step is to figure out what material is covered. Did the professor’s lectures come straight from the book, or did they consist of new material? This is

an important question. Some professors lecture and test almost directly from the book, whereas others consider the book as supplementary material. Sometimes, for better or worse, you'll have a professor whose lectures—and tests—have nothing to do with the book. (This understandably leads students to ask themselves, "Why did I have to buy this book?" One answer is that many professors feel students must expand their knowledge beyond what's covered in class.) The best way to find out what material is on the test is to talk to the professor.

Once you've gathered your material, there are a few things to look for in your notes:

- ▶ Recurring topics
- ▶ Key names and dates
- ▶ Both facts and opinions

This information can appear in either your text and/or the professor's lecture notes. And of course, when you notice information that appeared in *both*, you can feel pretty confident that you've identified material that is likely to appear on the test.

What do you do with this recurring information? One smart thing to do is to make one set of study notes to "clear the clutter" and really get you focused on what seems most likely to be on the test. If you prefer index cards, put the information that appears in both sets of notes on them, one point at a time. Putting too much information on any one note card defeats the purpose of using a note card (remember that they are flash cards). If you prefer outlines, take out sheets of lined paper and make one study outline from both sets of notes. You get the picture. Your objective is to put away the books, put away the disorganized lecture notes and miscellaneous scraps of information, and make one personalized study guide that you are very confident is the best study guide ever.

Finally, remember that your professors often make up tests the same way you study for them. That is, they look over what they've covered (in their lectures and in assigned readings) and then make up questions based on that material. A study guide is only as good as the questions it helps you answer. Practice making up questions and then practice answering them. Put yourself in your professor's shoes, and you'll take a giant step toward improving your results on tests.

The Role of Physical Sciences in Our Lives: Connections and Careers

Even if we are not always consciously aware of it, we are connected to the wonders of science in our everyday lives. From the food we eat, to the health care we depend on, to the energy we use, our lives are connected to the scientists and their discoveries, which make possible many things we take for granted. Scientists are studying global warming and ways to reduce it. Scientists are looking at alternative energy sources, and possible cures and vaccines in the fight against cancer and other diseases. Scientists study weather patterns to better understand the power of nature in light of hurricanes, cyclones, and earthquakes. It is important that

we understand as much as we can about science as we make our own decisions in terms of our health, the cars we drive, the food we eat, or even the way we vote. No matter what we do or what career path we may follow, we need to understand and use the scientific method. Knowing this allows us to better investigate, study, and solve problems we may encounter in any aspect of our lives. The study of the physical sciences can also make us more appreciative of the world around us. It can help us to really be aware of nature, of creatures other than ourselves, and of the how and why of what happens around us.

Beyond gaining an understanding of and appreciation for science, those of you who really love the subject will find that there are many career opportunities in government, private industry, medical research, and academia, to name a few. Find out what types of careers are connected to your specific scientific interests. Get to know your interests through the various courses you take in college, research opportunities you can take advantage of, and internships or volunteer opportunities that allow you to work hands-on in a particular field. You may be interested in pharmaceutical research, bioengineering, zoology, or ecology. You may want to be outside working in animals' natural habitats, you may love being out on the ocean, or you may love being in a laboratory and conducting experiments or diagnosing diseases. If you love science, you will find your place. Just put your investigative skills to work.

Increasing Your Yield

Readings for Practical Application

This chapter has covered reading and note taking at the college level. You have learned how to preview your textbooks, how to use guide questions, how to highlight, how to outline, how to annotate, and how to summarize to get the most out of your textbooks. Of course, college is not just about reading; it is also about going to lectures, so this chapter has helped you to assess your professors' lecture styles, how to take effective notes in lectures, how to review those notes, and, finally, how to pull your textbook and lecture notes together to be as prepared as possible for tests and exams. The practical strategies presented here have been widely studied and have been proved to work through experimentation, just as scientists experiment to find answers to the many questions about the world around us.

Those of you who like practical, research-based activities such as the ones presented in this chapter will probably do well in science courses that take a very linear approach to understanding the world around us. The readings that follow give you an opportunity to explore the physical sciences more closely—not only to apply the textbook reading strategies but also to consider whether a career in the physical sciences may be for you.

The Textbook Case reading in this chapter is about genetically modified organisms. Taken from a chemistry textbook, this reading focuses on the use of biotechnology to create genetically modified crops, something you as a consumer will benefit from understanding. This textbook reading illustrates the profound connection between science and our everyday lives, whether or not we choose to enter a science field.

As you read this textbook excerpt, apply the strategies you have learned for better comprehending textbooks in the physical sciences.

The Life After College reading gives you a look at one area of science, the field of marine ecology. If you are not sure just what a marine ecologist does, you will find this interview very interesting. Think about your own concerns regarding the environment as you read about one scientist's passion for his career and his fears and hopes for the future of our planet.

Reading and Study Tips: Physical Sciences

Unique Features and Comprehension Strategies

Unique Feature of Textbooks in the Physical Sciences

Physical sciences textbooks feature short sentences with to-the-point information.

These texts feature special vocabulary in each chapter.

Strategies for Comprehension

- Read each sentence, identify the key words and definitions in context, then read the sentences again.
- Make note cards to reinforce your understanding of the key words and concepts.
- Keep up with new vocabulary by making note cards.
- Put the word on one side of the card and the definition and an example on the other side.
- Make use of free minutes throughout your day to review your note cards.
- Make the cards early and look at them often.

Unique Features and Comprehension Strategies *(continued)*

Unique Feature of Textbooks in the Physical Sciences Strategies for Comprehension

These texts have two different approaches: traditional (teaches terms and concepts in the abstract) and issue-based (puts concepts in the context of real-world events).

Concepts build sequentially in physical sciences textbooks.

Physical sciences textbooks require quantitative reasoning skills.

- Be prepared for objective tests for the traditional text.
- Be prepared to apply the concepts and theories to real-life examples of your own.

- Outline the readings and compare your outline to your lecture notes.
- Review your outlines often to keep the information fresh in your mind.

- Take math courses before science courses that require math applications (such as physics and chemistry).

Reading 1: A Textbook Case

The following textbook excerpt is included here because this chapter discussed specific strategies for improving your reading and note-taking skills. Using specific strategies, scientists also seek to solve problems in the most direct way. In this reading, you will learn how scientists use biotechnology to solve problems with the food supply, looking to improve flavor, nutritional value, and the hardiness of crops in order to make them virus- and pest-resistant. While you will learn from specific examples in this reading, you will also learn that the use of biotechnology is not without controversy. The more you know, the more informed you will be about such issues that affect your daily life. Nearly all college students will take at least one physical science course, and if you decide to major in science, you will have many textbooks similar to the one from which this reading is taken. As you read this selection, underline, annotate, and, most important, outline (as explained earlier) to best organize the material for yourself.

BEFORE YOU READ

What do you think of when you think of genetically modified food? Provide some examples. Do you feel genetically modified food has positive or negative implications? Why?

Genetically Modified Organisms

J. Millard

The introduction of new genes into higher plants and animals through recombinant DNA techniques leads to genetically modified (GM) organisms. The use of biotechnology to create GM crops has profound implications for agriculture,

where the goal is to create improved food products and livestock. Genetic engineering has been used to enhance flavor, nutritional value, and hardiness, as well as to make crops herbicide-resistant, virus-resistant, and pest-resistant.

An example of the power of biotechnology is “golden rice,” engineered to produce beta-carotene, which could meet the vitamin A requirements of millions of children in developing countries worldwide. Genes are considered to be food additives in the United States and consequently fall under the regulation of the FDA, which has generally been accepting of biotechnology. However, the introduction of GM organisms into the global economy has not been without controversy, as we explore in this section.

Improved Flavor

The first widely available transgenic food product was the *Flavr Savr* tomato developed by the small startup company Calgene in response to the lack of consumer satisfaction with the often-tasteless supermarket tomato. Tomatoes are commonly picked when green so that they can withstand shipping and then are treated with ethylene, the natural ripening hormone of plants (Figure 3.1).

Calgene scientists created a genetically modified tomato that allows ripening on the vine, where flavor develops. Their strategy was to introduce a “backwards” (*antisense*) version of the gene that codes for the softening enzyme polygalacturonase (PG; Figure 3.2). Inactivation of PG results in a firmer tomato that can be shipped after ripening without bruising.

Calgene began marketing the tomato under the brand name MacGregor’s in 1994 after obtaining approval from the FDA, which ruled that it was “as safe as a conventional tomato” (many food plants, including tomatoes, contain low levels of toxic compounds). Calgene invested \$25 million in product development and marketing but was unable to recoup this expense. The low yields of the parent variety and problems with shipping ripe fruit were difficult to overcome. The MacGregor’s tomato was soon withdrawn from the market, and Calgene was acquired by the giant corporation Monsanto in 1995.

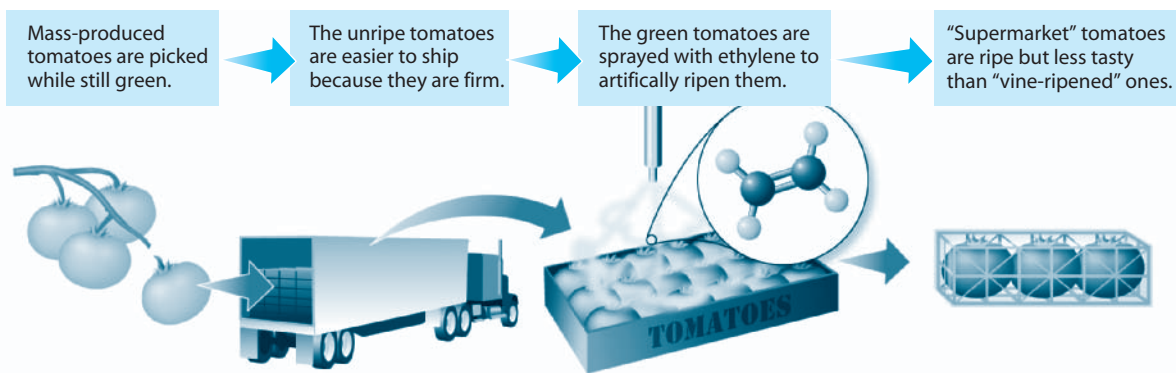


FIGURE 3-1 Premature picking of tomatoes and ripening with ethylene do not allow maximum flavor to develop. This accounts for the sometimes disappointing taste of supermarket tomatoes.

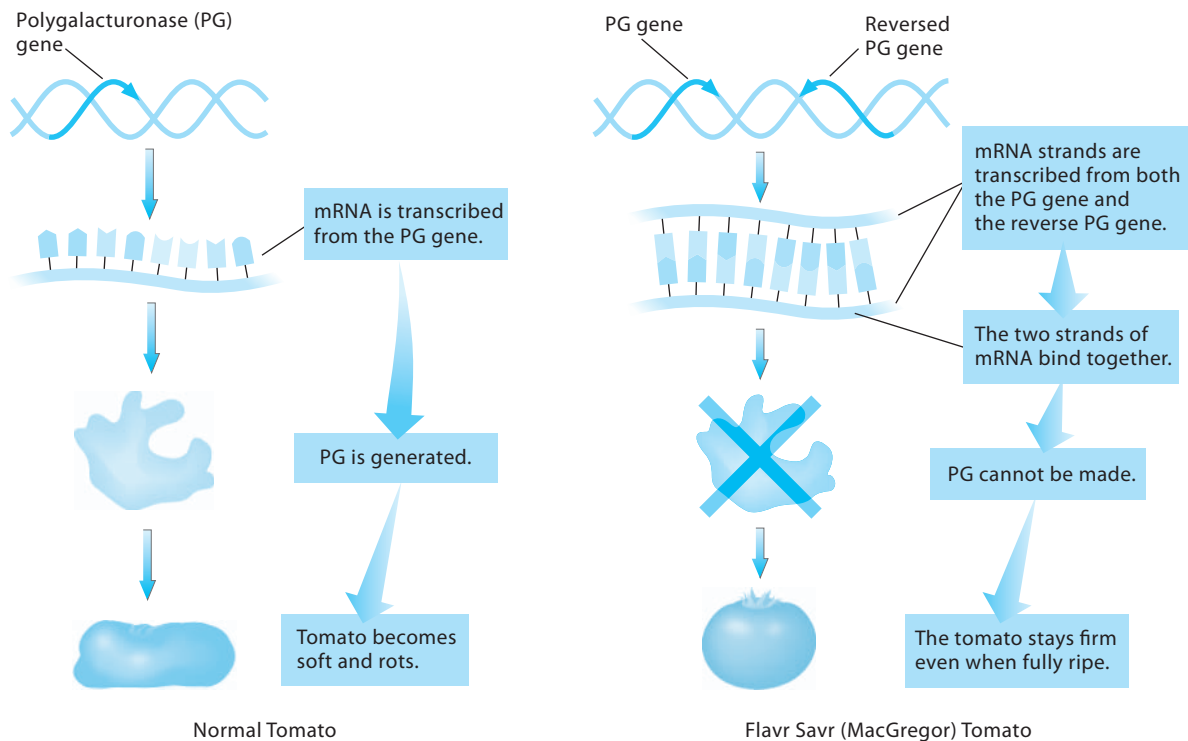


FIGURE 3–2 The enzyme polygalacturonase (PG) leads to softening and eventual rotting of normal tomatoes. The Flavr Savr was engineered to contain the PG gene “in reverse” so that its mRNA would be complementary to the PG mRNA. Binding the two mRNAs shuts down the softening process, leading to a more robust fruit.

Pest Resistance

The bacterium *Bacillus thuringiensis* (Bt) produces a protein that acts as a natural pesticide. In the 1980s, scientists began to envision incorporating the bacterial insecticide gene into plants that could then poison the pests that assault them. Eventually, the bacterial gene was incorporated into the genomes of corn, potatoes, cotton, and other crops. These “Bt plants” are inherently insect resistant, allowing farmers to use fewer pesticides. A potential drawback is the effect on desirable insects, such as the caterpillar that metamorphoses into the popular monarch butterfly.

Indeed, a report by a Cornell University research team in 1991 was a serious public relations blow both to Bt corn and GM crops in general. Investigators found that nearly half of laboratory monarch caterpillars fed milkweed leaves dusted with Bt corn pollen died, and many of the survivors ate less, thereby growing more slowly. However, further studies under field conditions have found little evidence that Bt corn poses a significant threat to butterflies in nature. By one estimate, 500 of a million caterpillars might die from eating corn pollen deposited on milkweed growing near cornfields. Many who are in favor of biotechnology argue that such

an effect would lead to a negligible impact on monarch populations compared to other hazards, such as loss of habitat, extremely long annual migrations to Mexico, hungry insects, and insecticides. Many opposed to biotechnology argue that Bt corn is just another human-made nail in the coffin of the monarchs, bringing them closer to the brink of extinction.

GM crops received more negative publicity when a variety of Bt corn called StarLink not approved for human consumption turned up in the supermarket. Laboratory testing had indicated that StarLink's Bt protein was resistant to digestion, suggesting that it might trigger an allergic response in some individuals. Based on these findings, the Environmental Protection Agency (EPA) approved it only for animal consumption. However, in September 2000, an activist group found traces of StarLink in a number of snack-food products, sparking a nationwide recall of more than 300 different food items. While there is no real evidence that StarLink poses any kind of public health threat, it proved to be a public-relations nightmare for the manufacturer, Aventis CropScience. Class-action lawsuits were filed against Aventis by consumers, farmers, corn processors, and food manufacturers. Sales of StarLink seeds were voluntarily suspended thereafter.

Public Response to GM Food

Whatever the ultimate fate of the monarch butterflies, it is likely that there will continue to be controversy surrounding GM organisms for quite some time. Consumers across the globe are varied in their reactions to genetically modified crops and food, with Europeans generally opposed, Americans generally accepting of the new technology, and the rest of the world somewhere in between. Most American consumers consider GM foods to be equivalent to conventional products. Indeed, an estimated 80% of processed foods, including such staples as pizza, chips, and soda, contain some genetically engineered food components (Table 3.1). In contrast, European consumers, perhaps still wary of their food following the outbreak of mad cow disease in Great Britain, are suspicious of GM crops. The European Union is moving toward strict labeling requirements that would identify all genetically modified foods and products derived from them.

Antibiotechnology activists have been vocal and unreserved in their actions, even destroying many test fields of genetically engineered plants worldwide. A chief complaint remains the lack of labeling of GM foods. Current FDA requirements are largely voluntary, with companies submitting documentation that they have performed adequate safety testing on their products. FDA product-labeling requirements apply only when the food product is "materially altered," that is, when the

Table 3-1

Examples of GM Foods Commonly Found in American Supermarkets

Whole Foods

Potatoes, tomatoes, soybeans, tofu, corn, squash, strawberries

Processed Food Ingredients

Corn starch, high-fructose corn syrup, canola oil, soybean oil, soy flour, lecithin, cottonseed oil

tomato is no longer a tomato. The lack of labeling requirements means that consumers with specific dietary restrictions because of allergies, religious beliefs, or choice of lifestyle may be eating fruits and vegetables that contain unexpected genes and additives. The potential dangers to allergic individuals were demonstrated by a 1996 study showing that soybeans genetically modified to be more nutritious would be likely to cause a reaction in people sensitive to Brazil nuts, the source of the gene additive. Hidden allergens in food could be fatal to highly allergic individuals who have no way of being vigilant against such an invisible threat.

Promoters of biotechnology argue that humans have been creating genetically modified crops and domesticated animals for thousands of years by traditional cross-breeding, which results in exchange of fairly large sections of DNA among individuals (Figure 3.3). Genetic engineering is simply a more precise and faster method of gene insertion. However, some scientists believe that the insertion of traits without respect to species boundaries is risky. Certainly, laboratory manipulations include many that could never happen in nature. Indeed, a recent report described the genetic modification of pigs to contain spinach genes. This “green ham” represents the first successful production of mammals with plant genes, an unlikely event in nature.

AFTER YOU READ

What are your thoughts on the use of biotechnology on crops now that you have read this textbook passage? What have you learned that you did not know before? How has this passage improved your understanding, and what specific examples helped you to better understand genetically modified organisms? Why is this knowledge important whether or not you enter a science field?



FIGURE 3-3 Selective breeding is slower than genetic engineering for inducing genetic changes in a species. Domestication of wild dogs (left) led to the selection of characteristics appealing to humans, and breeds (right) that look very different from their ancestors.

Reading 2: Life After College

Science, although it is an academic discipline with an abstract dimension, also has many practical applications. It is one thing to enjoy science and science courses, but it is another thing to make a career out of science. Do you know all the possibilities for careers that involve science? The following article highlights an interview with a marine ecologist. His love of water and the outdoors influenced what he does today in his own field of science.

BEFORE YOU READ

What do you think a marine ecologist does? How are studying marine life and ecology related? How does studying oceans help us better understand our planet and how to care for it?

Careers in Science: Shawn Robinson, Marine Ecologist

How did you choose your present profession?

I have always had a deep and abiding interest in marine biology and ecology for as long as I can remember. I enjoy finding out how things work. In my youth, I spent many formative hours exploring the intertidal zones of the Canadian Maritimes and once I learned to dive, I spent a lot of time underwater exploring the wonders there. My summer jobs, throughout my undergraduate work, focused on marine biology and as a result, led me to graduate work in marine fields. I didn't so much choose my present profession, but rather, my interests and a bit of luck along the way allowed me to evolve into it.



departments in Prince Edward Island and Nova Scotia. The range of work I was involved in showed me that I could do something that I loved and actually get paid. All I needed was the right credentials and a break here and there to make it happen.

There have been a number of people that have inspired me, probably too many to mention here. However, some authors would be H.G. Wells, Jules Verne, Sir Thomas More, Jared Diamond, Ronald Wright, Stephen Hawking, Carl Sagan and Isaac Asimov. On

television, I have been motivated by the educational styles of Jacques Cousteau, Joe McGinnis and David Attenborough.

What were your biggest motivators?

I think some of the biggest motivators that allowed me to choose my present profession were my early summer jobs working for government science-based

Who are your greatest mentors or heroes?

Throughout my academic career, I've had a number of significant mentors such as Sherman Bleakney from Acadia University, Brian Hartwick from Simon

SOURCE: Excerpt from "Careers in Science: Shawn Robinson, Marine Ecologist," *National Geographic's Strange Days on Planet Earth* (2008). Retrieved 5/15/08, www.pbs.org/strangedays/educators/qa_robinson.html. Reprinted by permission of Sea Studios.

Fraser University, Tim Parsons from the University of British Columbia as well as Norm Sloan and Dan Ware from the Department of Fisheries and Oceans. I owe a debt of gratitude to these gentlemen for taking me under their wing.

Was there a pivotal event in your life that helped you decide on your career path?

Two events stand out particularly in my mind that helped shape the path of my research career. One was the first time I went scuba diving and got a chance to see the floor and the sea life living on the bottom of the ocean. The dive was in the middle of the winter in Prince Edward Island, and despite the cold and the relative inactivity of the animals, I could not have been more enchanted with the new world I was seeing. The second pivotal moment was the first time I was down in a submarine off the coast of southern Vancouver Island in British Columbia. We dove in a fjord to a depth of several hundred meters to do a prawn survey. The biological structure and layers within the water column you could see from the window of the submarine firmly convinced me that you really need to see what you are working on if you are to truly understand it.

What has been the biggest surprise in your life as a scientist?

I think one of the biggest surprises in my life as a scientist is that there is an understandable level of pattern in the natural world that we are capable of discovering and understanding. This goes beyond the basic survey level of understanding, such as distribution and abundance of organisms, to the actual processes and species interactions on the way ecosystems work. While we may never be able to fully understand the entire complexity of the marine systems we are linked with, we may very well be able to understand enough of them so that we can coexist within them for the long-term.

What would you recommend for students wanting to pursue a similar career?

Go into this type of career with passion and commitment. Marine ecology is partly a lifestyle choice rather than a job you endure to try and generate

enough money to retire on as quickly and lavishly as possible. Work on your science courses and do not be scared of math. Math is simply a tool that needs to be learned and can be useful at whatever level of proficiency you achieve. The arts and sciences have several things in common, most notably the creative process in which a model of a particular structure or process is envisioned. Do not ignore the development of your creative side. Many of the major advances in science have come from ideas that came from “out of the blue.”

What do you like best about your profession?

I like the diversity that exists within my job the best. I make a living that involves working on boats out on the ocean and in shore-based laboratories, studying organisms and ecosystems that few people really get to know. This work involves collaborations between colleagues, industry partners and a number of graduate students from local universities. Our team gets to use relatively high-tech equipment in both the field and the lab and each day brings new discoveries. There is also a travel component to the work. Much of our research is reported at scientific conferences that are held throughout the world, often in very pleasant destinations.

What would you say has been your greatest achievement?

I would say that one of our greatest achievements, as a team, has been successfully bringing more advanced ecological concepts to the aquaculture food production industry. Our research, to date, has shown that ecological recycling principles can be adopted into industrial practices so that a win-win situation can exist for both the environment and business. This is important in a society where short-term bottom lines for business often set social policies. While we are still far away from setting up a perfect aquaculture site, we have at least started to provide a potential solution that industry can use now and evolve from. This approach is now starting to be further spread by the graduate students that have come through the Integrated Multi-Trophic Aquaculture (IMTA) program from various sites around the world.

Are you optimistic for the future of the planet and if so why?

My degree of optimism tends to fluctuate. There are times when I feel that human society is making significant progress in becoming more benign in relation to the various ecosystems with which we coexist on this planet. There are many brilliant people working to understand how these ecosystems work and problems are now being recognized by several different levels of society. Efforts are being mounted to either solve or remediate those issues that have been identified. There are a number of organizations throughout the world that are looking at ways to adapt and evolve man's method of habitation on this planet through many ingenious approaches. This type of proactive approach is encouraging to me and one on which our team is working.

What are your greatest fears for the future of the planet?

However, there are other times when it would appear that large-scale business interests, which ultimately stem from our need to supply goods and services to our large urban developments on Earth, are driving agendas that will ultimately degrade the environment to a point where large-scale economic and ecological collapse will occur. Many people within our societies have dissociated themselves from the workings of the natural environment to the point where they do not understand or care to understand many of the natural processes that are happening. In the past, these processes were once apparent to those people that lived closer to the land. Today, we are depending on someone else to look after our interests through either declining government science or scattered centers of academia at a time of further tax cuts and reduced public spending on knowledge generation. This self-induced apathy about how our planet works, combined with the very real need to understand its workings during a time of massive industrial expansion, is a real issue. When human society feels it's reasonable to invest more economic wealth in cell phone features or music videos than it is to understand how to sustainably exist within their environment, it has all the makings for an ecological global crisis. While there are many groups doing good work towards averting this calamity,

I feel that at some time in the future we will reach the tipping point. If we do not have solutions in place, it may be too late and human society may collapse to a vestige of its former self. This is what often happens to natural populations that swell to abnormally high densities and grow beyond their carrying capacity. While it may be normal in nature, the transition to a lower state of development in human society will be extremely painful and messy.

What's the one message you would like the next generation of scientists to hear?

You are sorely needed, but you need to be relevant. Keep in mind that the professional scientist is in the business of producing information. This is no different than any other business venture in several aspects. You need to produce a product that society needs both now and in the future. You have to be able to successfully advertise and market that product so that those who are purchasing it know that it exists and why they should have it. You also need to do follow-up market research to ensure that the product you are producing is the best that it can be and fitting the needs of society. While this may seem crass in today's academic circles, it is this "ivory tower" mentality and lack of relevance to the ordinary person that has alienated much of society from understanding and appreciating science. Many are neutral at best on seeing how it can benefit them aside from producing products that enhance their creature comforts. If we cannot convince society that we need to understand how to live sustainably on this planet before we run into that "brick wall," it will be too late to develop that understanding at the 11th hour and we will not have fulfilled our responsibility as scientists.

What Web sites, books, articles and other layperson references would you recommend for viewers interested in your work featured in Strange Days on Planet Earth?**Web sites**

Integrated Multi-Trophic Aquaculture: http://en.wikipedia.org/wiki/Integrated_Multi-trophic_Aquaculture

Government of Canada, Fisheries and Oceans Aquaculture site: www.dfo-mpo.gc.ca/Aquaculture/

Articles

Ridler, N., M. Wowchuk, K. Barrington, T. Chopin, S. Robinson, F. Page, and K. Haya. 2007. Integrated multi-trophic aquaculture (IMTA): A potential strategic choice for farmers. *Aqua. Econ. Manag.* 11(1):99–110.

Ridler, N., K. Barrington, B. Robinson, M. Wowchuk, T. Chopin, S. Robinson, F. Page, G. Reid, M. Szemerda, J. Sewuster, and S. Boyne-Travis. 2007. Integrated multitrophic aquaculture—Canadian project combines salmon, mussels, kelps. *Global Aquaculture Advocate* 10(2):52–55.

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Chopin, T., S.M.C. Robinson, M. Sawhney, S. Bastarache, E. Belyea, R. Shea, W. Armstrong,

I. Stewart, and P. Fitzgerald. 2004. The AquaNet integrated multi-trophic aquaculture project: Rationale of the project and development of kelp cultivation as the inorganic extractive component of the system. *Bull Aquacult. Assoc. Canada* 104-3:11–18.

Robinson, S.M.C., and T. Chopin. 2004. Defining the appropriate regulatory and policy framework for the development of integrated multi-trophic aquaculture practices: Summary of the workshop and issues for the future. *Bull Aquacult. Assoc. Canada* 104-3:73–82.

Books

A Short History of Progress by Ronald Wright

Guns Germs and Steel by Jared Diamond

Collapse: How Societies Choose to Fail or Succeed by Jared Diamond

The Omnivore's Dilemma: A Natural History of Four Meals by Michael Pollan

AFTER YOU READ

Robinson believes that scientists are needed but that they also need to be relevant. How do you think science can be made more relevant? What other careers in science are being made relevant by what is going on today?

Here are some other careers related to physical sciences for you to investigate:

- Zoologist
- Forensic scientist
- Technical writer
- Agricultural scientist
- Biochemist
- Forest ranger
- Hydrologist

- Crime lab analyst
- Entomologist
- Scientific photographer
- Science writer
- Physician
- Toxicologist
- Astronomer
- Nuclear physicist

And there are many more!

Compounding Your Interest: Further Readings

The American Academy of Forensic Sciences

www.aafs.org

American Chemical Society

www.acs.org

Balbes, L. (2006). *Nontraditional Careers for Chemists: New Formulas in Chemistry*.

New York: Oxford University Press.

Camenson, B. (2003). *Great Jobs for Biology Majors*. 2nd ed. New York: McGraw-Hill.

Rowh, M. (2005). *Great Jobs for Chemistry Majors*. 2nd ed. New York: McGraw-Hill.

Science Careers Forum

www.ScienceCareers.com

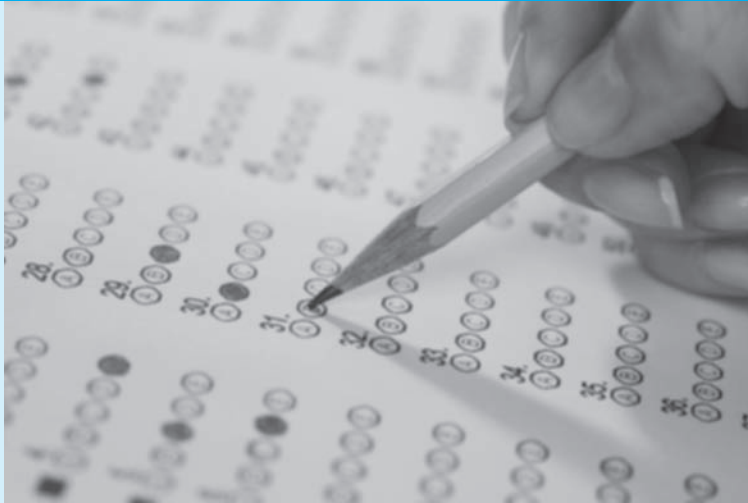
Sloan Career Cornerstone Center for science, technology, engineering, mathematics, computing, and healthcare career planning.

www.careercornerstone.org

Wilson, B. (2007). *Totally Amazing Careers in Environmental Sciences*. San Diego:

Sally Ride Science.

4 Earning the Grade on Tests



This chapter will cover the following topics:

- ▶ Objective Tests
- ▶ Subjective Tests
- ▶ Other Types of Tests
- ▶ Memorization
- ▶ Cramming
- ▶ Test Anxiety
- ▶ The Role of Psychology in Our Lives: Connections and Careers

Sooner or later, no matter how hard you try to avoid them, you will be faced with what many find to be one of the most dreaded aspects of the college experience: tests. Multiple-choice tests. Essay tests. Open-book tests. Take-home tests. The number and type can make your head spin. Like it or not, they are an inevitable part of the college experience.

You've taken tests before, of course, in high school, grade school, and even when applying for a job or promotion. You've taken many different kinds of tests, from spelling and math tests to the SAT or ACT tests that were part of your college admissions process. You may be someone who enjoys taking tests because you do well on them and you really feel they show your abilities, or you may be someone who dreads tests because you "freeze up" on them and forget answers that you are certain you know. If you're in the first category, there are some strategies you can

Think About It



Answer the following questions in the space provided.

What test-taking strategies have worked for you in the past? Which ones have not worked? Why? _____

add to your repertoire that will improve your already strong abilities. If you're in the second category, there are numerous strategies you can employ that will build your confidence and increase your success on tests. You can earn the grade you want by employing a combination of hard work and strategizing for both studying and test taking.

An initial investment in good test-taking strategies at the beginning of your college career will pay off in college and beyond. Tests may also become not-so-dreaded after all. As so often happens in life, the more you put into preparing for tests, the more you will get out of them. There is no mystery to this. There are no short cuts either. There are, however, plenty of good strategies. That's the point of this chapter, and also the reason why psychology as a discipline is emphasized in this chapter. The study of psychology is the study of human behavior. It is also the study of mental processes. In other words, psychologists look at any form of behavior, such as studying or socializing, as well as mental processes such as perceptions and beliefs. The study of psychology is directly related to the study of how we learn, and the study of how we learn helps us understand how we best remember and understand information for tests, the focus of this chapter. The more you know about yourself and how you best learn, the better prepared you will be for tests and other challenges you will face in college and beyond.

FIRST THINGS FIRST

Before studying for any test, you need to know what you are in for, so ask. That's right: If you don't know, ask. If the type of test and what will be on it are not a part of the syllabus, your professor should let you know. If you are not sure, however, you need to find out. Will the test be on the notes, the text, or both? Will it be essay or multiple-choice? Will it be comprehensive or not?

Next, you need to think about what professors want from tests. Some professors want to see that you've been paying attention to the facts and details presented in the readings and the lectures. Others are more interested in applied knowledge. One professor might be interested in your writing ability on an essay, whereas another might be more interested in seeing that you covered the main points.

The bottom line is that you need to be prepared. There is no point in studying unless you know what you are studying and how you should be studying. Once this is clear, the rest of this chapter will be much more useful.

Objective Tests

The type of test that you will encounter most often is the objective test. This is the black and white test, the right or wrong test. You either love them or hate them. Some students say, "Give me an essay test any day. I can write my way around any answer." Other students say, "Give me multiple-choice. The answer is already there." If you are more like the first group of students, it is time to learn your way around an objective test.

Multiple-Choice Tests

Multiple-choice tests present you with a question or statement, followed by a choice of four or five answers, some of which can be similar or confusing. Some multiple-choice questions are strictly related to definitions or to your ability to recognize facts or identify people:

The type of test that provides the test taker with more than one answer to choose from is called:

- a) a take-home test
- b) a comprehensive test
- c) a multiple-choice test
- d) a headache-inducing test

Others, however, call for the application of material, ideas, or understandings. They are not always as straightforward as they might seem:

Which of the following is the best example of responsible student behavior when it comes to preparing for a biology test?

- a) The student asks around to see what other students know about what will be on the biology test.
- b) The student checks the syllabus. If the information about the biology test is not on there, he assumes the professor does not want the students to know.
- c) The student visits the professor during office hours. He asks what types of questions will be on the test and what he should focus on in his studying.
- d) The student goes to see a tutor, hoping the tutor will tell him what will be on the test.

The best way to prepare for a multiple-choice test is to practice *taking* a multiple-choice test. What does this mean? If your textbook has practice tests at the end of each chapter or on a CD packaged with the text, you are in luck. Even if your professor doesn't assign them, take them! You will get used to seeing the course content in the multiple-choice format. Seeing answers next to other possible answers, and having to distinguish among them, is a lot different from staring at a straightforward set of notes. Think about it. Your notes don't have four or five possible choices. There is only one. But when you take a multiple-choice test, you have to pick that answer out from a list of several alternatives. This could get confusing, especially if two answers are very similar or if one of the answers is indeed a correct answer—but to another question! Think of it as being in a forest and having to find one particular variety of maple tree among other types of trees or even among similar, but not identical, maples. If you have only looked at maples, and have never looked at birch trees or willow trees, you are

going to have a tough time. That's why taking practice multiple-choice tests is the best way to prepare. If your textbook does not include practice tests, talk to your professor. Sometimes he or she can provide supplementary texts that offer them. Some professors also keep old tests on file, either in the office or in the library. Taking these tests as practice enables you to "get into the head" of the test maker.

Here are the steps to follow when taking multiple-choice tests:

1. Read the question carefully and then read every possible answer.
2. Practice the process of elimination. Remember that good test takers look for the wrong answers and eliminate them. The right answer remains. This works especially well for questions with two very similar answers.
3. Once you have made a decision, re-read the question, following it with your chosen answer. Does it make sense? Is it grammatically correct?

*A special tip for students who **really** hate multiple-choice tests:* Turn the questions into fill-in-the-blank or short-answer questions. Do this by covering up all the choices. Then read the question and write an answer down on the paper. When you have done that, look at the choices to see whether your answer is there. (This tip is helpful for students who experience anxiety when they look at the choices before deciding on an answer.)

True/False Tests

As a student, you have one distinct advantage with true/false tests: You have a 50/50 chance of getting each question right. Nevertheless, true/false questions can be very tricky, and you need to keep in mind the following tips.

- ▶ Watch out for questions that contain negatives, especially if they contain a double negative.
- ▶ Watch for key words in each statement.
- ▶ Pay attention to words that may indicate that a statement is true (these include *some, few, many, and often*).
- ▶ Pay attention to words that may indicate that a statement is false (such as *never, all, every, and only*).
- ▶ Remember that if any part of a statement is false, the entire statement is false.

Fill-in-the-Blank Tests

Although you see these kinds of tests less frequently in college than in high school, you will still come across them occasionally. Here are some tips:

- ▶ Read the entire statement carefully so that you are clear about what should go in the blanks.
- ▶ Give the same number of answers as there are blanks.
- ▶ Never assume that the length of the blank has anything to do with the length of the answer.
- ▶ Pay attention to the word that precedes the blank.
- ▶ Look for key words in the sentence that may trigger a response.

Matching Tests

The positive thing about matching questions is that all of your answers are right in front of you. The challenge is getting them all in the right place. Here are some tips:

- ▶ Read each column before you answer.
- ▶ Determine whether there are the same number of items in each column. If there are more answers than questions, then you will have some answer choices left over.
- ▶ Determine whether you may use an answer only once or more than once.
- ▶ Match what you know first.
- ▶ If you are not going to be using any answer more than once, cross off answers that have already been used.
- ▶ Use the process of elimination for answers you might know.
- ▶ Look for logical clues.
- ▶ Use the longer statement as a question; use the shorter statement as an answer.

Subjective Tests

Some students love subjective tests, and others dread them. What makes them different from objective tests? First of all, the answer isn't somewhere on the test. It is in your head, waiting to be formulated. Also, these types of tests aren't "black and white." Although an answer can certainly be wrong, no answer will look the same on every test taker's paper. Some students see this as license to write everything they know, but it is unwise, and wasteful of time, to cover the paper with irrelevant information. The key to success on subjective tests is to understand the questions and to provide brief, direct, and well-supported answers. That's all, you ask? It is not as bad as you think.

Every different test you take requires a different plan of attack for studying. The best thing you can do is to study by doing the very thing you will be doing on the test. This makes sense. Can you imagine being on a football team whose practice sessions consist only of watching videos of people playing football? Can you imagine practicing for a piano recital by looking over the notes on the sheet of music and hearing the tune in your head? Hardly. The football team that watches people play but never hits the field is doomed to be trampled. The piano player who never tickles the keys will end up quite embarrassed at the recital. In these cases, it makes sense to practice by doing. Why, then, do many students ignore this principle when studying for tests? Does the following lament sound familiar? "I don't know why I flunked the sociology test. I studied for five hours last night. I looked over my notes at least five times." This student put some time into studying, but it was time not well spent. Like our hapless football player and piano player, this student did not prepare by doing. What did she not do? She did not *write*. If you are taking a test that requires writing, you need to prepare by writing. Here are some tips on how to do that:

- ▶ Review your text and class notes. (See Chapter 3 for ways to make them great!)

- ▶ Turn your notes into specific questions.
 - ▷ Think about what the professor stressed during lectures.
 - ▷ Look for main ideas in your notes.
 - ▷ Become your professor. What questions would he or she ask?
 - ▷ Come up both with questions that could be tackled in a few sentences and questions that would require a brief essay.
 - ▷ Meet with your professor during his or her office hours to get feedback on your questions. You want to make sure you are on the right track.
- ▶ Put each question on a separate index card.
- ▶ After a sufficient amount of review time, take out the question cards and answer them on a separate piece of paper.
- ▶ Time yourself. Remember that you have only a limited time to take a test. Get used to working under a time constraint.
- ▶ Check your answers against your notes.
- ▶ Check your answers again.
- ▶ If possible, find a good student or two from your class. Form a study group. Have each person make up test questions, and then exchange them. You never know what another student will come up with that you may have missed. There is strength in numbers!



DIY: Do-It-Yourself Activity

Find out what the top professional journals are in your field of study. Write down a few of the titles:

Make a habit of reading at least a couple of articles a month from those journals. This will help you learn what “conversations” are going on in that field and will familiarize you with its special vocabulary, or jargon.

Short-Answer Tests

Short-answer tests consist of questions that can be answered in no more than a few sentences. Sometimes, you don’t even have to write a complete sentence, just the key words. Make sure you know before you start whether this is permissible, and if you’re not sure, ask your professor.

Here are two examples of short-answer question formats that you are likely to encounter:

1. Identify two physical characteristics of the American goldfinch that aid in its survival. Be sure to name the characteristic *and* identify the benefit.
2. Define the term “homeopathic” and provide an example.

Easy enough? Well, you have to remember that since you have only a sentence or two, no word can be wasted. What is the key to a winning answer on a short-answer test? Be direct. Look at the question. Formulate a brief answer. Check your grammar and punctuation. If you have prepared for a short-answer test by writing, this should be no problem.

Essay Tests

Essay tests are an expanded version of short-answer tests. The questions are more complex. The answers are a little longer. The problem that an essay test presents, then, is that students often write “around” the answer before getting to the point or, worse, never really get there at all. How do you avoid this? Think of this analogy: An essay answer is a *sandwich*, not a *pot of soup*.

What can go into a pot of soup? Just about anything. And everything gets mixed together. To make chicken soup, for example, you boil the chicken, make the stock, add vegetables and noodles, and simmer it all together. The final result is good, but the flavors blend into a whole. To find one taste or one ingredient, you have to dig through the others. Now compare this to an essay answer formulated like a pot of soup. Let’s say you have just written down everything you remember or everything you think might be related to the question. The professor has to try to find the answer in the soup. More often than not, however, the professor will give very little credit (if any at all) to an answer that did not directly answer the question.

The better alternative in answering an essay question is to build a sandwich. When you make a sandwich, you begin with the bread. When you answer an essay question, the first piece of bread is the direct answer to the essay question. It is the foundation for the rest of your answer. Once you have given a one-sentence answer to the question, you have to support that answer—through examples, discussion, definitions, and the like. Think of these main ingredients as the turkey, the ham, the cheese, the lettuce, the tomato. Smaller, more specific points (salt and pepper?) may also be layered in a precise order on the bread. The sandwich is then finished off with the second piece of bread, which functions as your conclusion. Your conclusion should sum up what you said; it should reflect the answer you stated in the beginning. Thus the opening sentence and the conclusion frame your answer, just as the two pieces of bread hold the sandwich together.

Following is a sample essay question:

1. Identify and discuss three techniques a good student would use to prepare for a test in a new course.

Note two very different responses to this question:

Weak Answer

I hardly ever studied for tests in high school. I just went in and tried to see what I could get away with. However, I can’t do that in college because the tests are too hard. So I have had to learn a lot of stuff. I have to use note cards when I study and go over them all the time. My roommate always asks his friends if they had the class and tries to get information from them. He is also a good basketball player so he knows a lot of people. But I have to really study for my tests. I sometimes get people to quiz me.

Lifeline



If you think you might need help studying for an essay test, there is help on your campus. Most campuses have tutoring centers or offices where students can sign up for peer tutors. You can find a tutor for the subject and go over possible test questions. After you practice writing out essay answers, request help from a writing tutor to see whether you understand how to organize a good essay answer. Arming yourself with a few writing tips can help you go from just “getting something down on paper” to writing a winning answer. It works!

In conclusion, taking tests in college is really hard. Students really need to prepare for them more than in high school.

The foregoing essay is weak for a number of reasons. If you recall the soup analogy, you can see that this student has merely thrown in a number of items without explicitly connecting them. In addition, the student has added irrelevant information, such as the fact that his roommate is a good basketball player. This student has not clearly answered the question by making the three items that are requested “jump out” at the reader. Now let’s look at a stronger essay.

Strong Answer

There are three major things that good students would do in preparing for a test in a new course. First, they would find out what kind of test to expect. Second, they would meet with the professor to discuss strategies. Finally, they would come up with practice questions and take practice tests.

Finding out what kind of test to expect is a key part of being successful. It is important to know what kind of test it is so a student can prepare accordingly. This information is often on the syllabus; if not, students need to find out from the professor. Preparing for an objective test is much different from preparing for a subjective one.

Meeting with the professor is a good idea for many reasons, but it is particularly important when preparing for a test. Often, the professor will provide you helpful tips. As an added benefit, the professor will appreciate the effort.

Making up practice questions and answering them is a great way to prepare for a test. For one thing, it involves active learning. Furthermore, students can often predict what is actually going to be on the test so that it is familiar when they see it. Also, you are practicing what you will be doing—writing—whereas if you are just reading over your notes, there is no guarantee that you will be prepared.

If applied, these strategies will help students do well on their tests. Finding out what to expect, meeting with the professor, and practicing taking tests will all pay off. Tests in college are hard but do not have to be impossible.

This essay is strong because it is like a sandwich. The student introduces the question first as the foundation (the first piece of bread). The sandwich (essay) is next filled with strong supporting ingredients in an orderly fashion. The sandwich is then completed with the conclusion (the other piece of bread). When an essay question is answered in this way, the professor does not have to search for the answer.

How do you write a strong essay answer yourself? You can follow some very easy steps when you first get the questions, even before you start to write. You can also take definite steps to stay on track when you write the answer. These steps are explained in the following list.

Before you start to write:

1. Read the question carefully at least two times. Make sure you understand every part of the question.
2. Note the key words that tell what kind of answer to write.

- a. *Compare and contrast* means to explain similarities and differences between two or more things. (Example: Compare and contrast the presidencies of Kennedy and Reagan.)
 - b. *Discuss* means to present a reason or argument. (Example: Discuss the effects of school uniforms on the behavior of public elementary school students.)
 - c. *Trace* means to show the steps in a process. (Example: Trace the development of an “A” answer on an essay exam.)
 - d. *Define* means to explain the meaning of a word or idea. (Example: Define the term “subjective” in the context of types of tests.)
 - e. *Explain* means to tell how or why. (Example: Explain the change from lecture to web-based instruction for college writing courses.)
3. Make an outline or concept map before you start to write. (*Note:* This does not waste time; it actually saves you time because you won’t lose track of where you want to go. Also, if you run out of time, some professors may give you some points for the information in your outline.)

When you start to write:

1. Answer the question in the first sentence of your essay. (Don’t make the professor hunt for the answer!)
2. Use the rest of the essay to prove what you said in the first sentence. Use your outline to stay on track with your first point, second point, third point, and so on.

After you write:

1. Check your answer against your outline or concept map to be sure you didn’t omit anything you really wanted to include.
2. Read the answer as one complete unit to make sure it flows well and would make sense to your professor. You can add any transitions you think would be necessary.

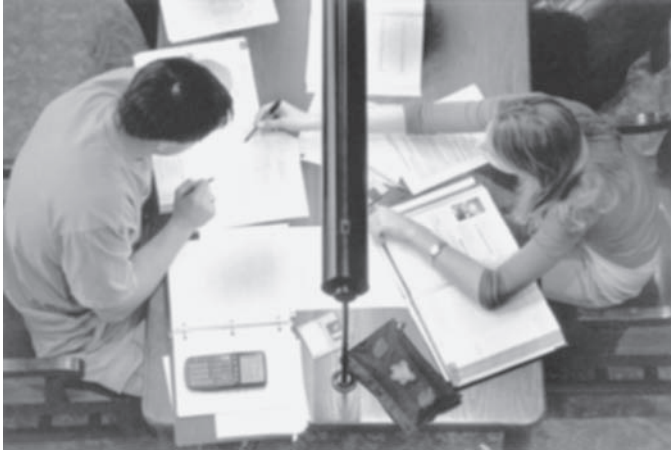
Other Types of Tests

Take-Home Tests

The professor says the test is a take-home. Sounds easy, right? Not so fast. Although a take-home test means you will have access to all of your materials and a lot of time to complete the test, the challenge comes from two areas: (1) Your professor is going to expect a much more detailed answer, often with citations, and (2) you have to structure your time carefully so that you will give the test your very best effort.

The steps to success on a take-home test are as follows:

1. Find out exactly what your professors’ expectations are. Do they want three pages or ten pages? Do they expect to have formal citations or can you use informal references? Do they think you’ll need 2 hours or 12 hours? How do you find this out? Ask.
2. Organize your material. Take-home tests require you to use all of the material you’ve used in class plus supplemental material. That’s a lot. Before you even start the writing process, you need to figure what you’re going to need and then



The students in this photo are studying at their campus library. How does working together help them better prepare for a test? Provide specific examples. What are the negatives associated with studying with another person or in a group? What courses are better suited to group study? Why?

gather it all in one place. That will make the actual time you are taking the test much more productive.

3. Structure your time. If you have a weekend to do the test, schedule the time you will work on it just as you would schedule, say, an appointment with the dentist (though we hope the test-taking experience will be more pleasurable!). Figure out when you're going to do it, and put it on your schedule.
4. Do it. Just putting it on your schedule is not enough. Follow through by doing what you promised yourself.

The good news is that take home-tests are less artificial in that they give you a little more breathing room to allow you to show what you know. Students who suffer from test anxiety in the traditional exam setting will find that take-home tests help them avoid those feelings of anxiety. The key to doing well is to get organized from the beginning. That is, develop a plan and then follow through on it.

Open-Book Tests

The good old open-book test. Open-book tests, much like take home-tests, often sound easier than they really are. More often than not, professors make open-book tests much more difficult than closed-book tests. And for good reason. The answers are right in front of you. But like a dollar bill misplaced on a messy desk with papers piled up all over it, the information in a book may not be so easy to find when the time comes. Many students do poorly on open-book tests because, although the material is there in front of them, they aren't able to access it in the time allotted because their notes are simply too messy. But there is a way to deal with this problem. It is to organize your book and your notes. Here's how:

- ▶ Buy some sticky notes in various colors. Mark important sections of each chapter with them, writing the topic on each sticky note. Use particular colors for particular types of information—for example, green for definitions, pink for formulas, yellow for important people, and so on.
- ▶ Highlight, underline, and annotate your text and notes. As you learned in Chapter 3, you need to *do something* with your text, not just read it. This is never more important than in a class with open-book tests.
- ▶ Anticipate test questions. Write them down. Have a "Table of Contents" for these questions. In other words, write down the page number that corresponds to the answer to each question.

Speaking and Listening Tests

Speaking and listening tests, though not as common as, say, multiple-choice tests, shouldn't catch you off guard. These tests are often given in language classes such as Spanish or French or in music courses. For example, such a test may require you to listen to a selection from a larger work by a particular composer. You may be asked to identify the work, the composer, or certain characteristics of the music. In a language course, you may be asked to answer a professor's question out loud in the language, or you may listen to a recording and have to answer questions about it. Speaking and listening tests may also be administered in other courses. Some professors give tests individually and ask you to speak about a certain topic. Their goal, as in any other test, is to see how much of the material you've learned.

Here are some important steps to follow for success on speaking tests:

1. Prepare for such a test as vigorously as for any other test. Don't think you can just wing it because you don't have to write anything down.
2. *Listen!* This may sound obvious, but you must carefully listen to the material. Pay attention. Often, the material will be read aloud or played only once. If you miss it, it's gone.
3. Organize your answers in your head just like an outline. Don't be afraid to think about the question before answering it. Your professor would appreciate the fact that you're giving serious thought to your answer.
4. If it is permitted, take notes while the material is being played or read. This will give you a reference point.
5. Don't get frustrated if you miss something. Doing so may cause you to miss the next set of material that is being read or played. Stay focused.
6. Don't get off the topic. Blathering on and on about irrelevant material is just wasting your professor's time. Don't think she or he is not going to see through it.

Teamwork Activity

The object of this activity is to predict potential test questions. Gather three or four students from your class to form a study group. Using your knowledge of the professor's testing style and the format to be used (often your professor will tell you the format of the test), have each member of the group write down several potential test questions, then write the best ones below:

For example, if the test format is all multiple-choice, write down as many multiple-choice questions as you can think of at a time. If it is a short-answer and essay test, write down questions in that format. You will be surprised how many of the questions you can predict. Naturally, you will also find that it's much easier to recognize the answer if it's "your own" question.

Comprehensive Exams

If you don't know already, you will soon learn that some courses and some degree programs have something waiting for you at the end of the line: the dreaded comprehensive exam. These exams, although they seem overwhelming in the scope of information they cover, don't have to be the end of the world. With the right preparation, you can do well. Comprehensive exams come in two types:

1. Exams that cover material learned in one course throughout the entire semester (such an exam may be called a final)
2. Exams you take in your major in order to graduate

If you need to take a comprehensive exam at the end of one course, you may find that it is a combination of many of the tests we have described: multiple-choice, true/false, matching, and essay. The difference between a regular test and a comprehensive one in a course is that you need to remember everything from the beginning of the semester. Here are some steps for doing well on comprehensive exams in a course:

1. Keep good notes from the very first day of class.
2. Don't miss class, or at least limit your absences.
3. Make note cards throughout the semester for frequent and periodic review.
4. Save all your other tests if your professor returns them. You can use these to review.
5. Meet with your professor after exams to see where you went wrong if you did not do as well as you had hoped. Such a conversation will help you discover how to do better on the next test.
6. Study in groups. Each group member can come up with questions to ask the other group members. Also, the group members may be able to fill in gaps you may have in your notes.
7. Make up practice tests, and practice taking them!

A comprehensive exam at the end of your college career can be very intimidating. Obviously, you have a lot riding on it because you are about to graduate, and that adds to the stress level. But don't become overwhelmed. Here are some steps for success on a comprehensive test that is a requirement in your major:

1. First, speak with your advisor about what the main topics or questions will be. This information can really narrow the focus of your studying. You will not have to remember everything. Also, find out what format the test will be in. Most likely, this test will consist of essay or short-answer questions, because you will be applying and synthesizing information.
2. Once you have the general topics and format, form a study group with other students in your major. Each group member can be assigned to research and review a different major topic and then report to the rest of the group. This will save a lot of time.
3. Have the group members ask each other questions.
4. Practice writing out answers to possible questions.

Memorization

To memorize or not to memorize? This is a difficult question. It is often better to really understand information, to be able to apply it, to have it become a part of your everyday life. Sometimes, however, memorization really is necessary. Definitions. Vocabulary in a foreign language. Parts of the body for an anatomy course. But the more meaning you can give to what you need to remember, the better. Anyone can learn to remember information better. It is a matter of knowing a few tricks of the trade.

Here are some tips to improve your memory skills:

- ▶ **Pay attention!** We remember better that which we focus on in the first place. Don't just take notes in a lecture. Really listen. Note the emphasis the professor places on certain points. Note good examples that the professor gives of concepts.
- ▶ **Mnemonic devices.** A mnemonic device is a way of remembering material through the use of unrelated words and phrases. They can be silly and even nonsensical, but they are a very effective way of remembering information. For example, if you were to have a test on this chapter and had to remember all the types of tests discussed, you could make up a mnemonic device like this: **M**y teacher forgot **m**y sandwich **e**ven though **o**ther students **c**alled. The first letter of each word would remind you of each type of test: **m**ultiple-choice, **t**ru e/false, **f**ill-in-the-blank, **m**atching, **s**hort-answer, **e**ssay, **t**ake-home, **o**pen-book, **s**peaking and listening, and **c**omprehensive. You probably still remember some mnemonic devices you've used in the past.
- ▶ **Make memorable associations.** One student had to remember the name Lemieux. It was unfamiliar to him, but he remembered it by associating it with the cartoon character Pepe LePew.
- ▶ **Try to make a mental picture of something you are trying to remember.** For example, you could remember that Augusta is the capital of Maine by picturing a gust of wind knocking over the mainsail on a ship. You say to yourself, "The Maine problem was Augusta wind."
- ▶ **Repeat, repeat, repeat.**
- ▶ **Use a multisensory approach.** Use different senses: Write it down, read it, have someone tell it to you, and see it on a flash card or picture you've drawn.
- ▶ **Use flash cards.** Write down important information and test yourself. Bring a few cards along with you every day. When you have a few free minutes while waiting for class to start or waiting in line at the bank, grab a card and review it. This strategy really works.
- ▶ **Study often for short periods of time rather than cramming right before a test.**

Cramming

The best advice about cramming? Don't do it! As we have already seen, in college it is often necessary to retain information well beyond the test itself. It may show up again in a later test in that class, or the information might be the foundation for



The student in this photo is cramming for a test in the morning. What problems do you think she is encountering? When have you crammed? How can you avoid cramming and why is it better not to cram?

something you're expected to know in a future class. This is particularly true if the course serves as a prerequisite for another course.

Cramming is best avoided, but in a pinch, it's better to cram than to do nothing. If you're faced with this situation, you have to realize that you're not going to be able to learn it all, so you need to decide what's most important. Review the most important information first. Recite it until you're out of time. Write down important information over and over. Try to relax; anxiety just gets in the way. Try to get a good night's sleep. Pulling an all-nighter may be a college tradition, but it's not a very effective one. Too often, students who pull all-nighters crash just before the exam.

Test Anxiety

Although anxiety is a natural part of test taking, some students have so much anxiety that it interferes with their ability to take the test. In some cases, a student may even have a clinical case of anxiety. If you think that might be you, your best bet is to seek help from a counselor. In certain cases, you might be legally entitled to accommodations through the Americans with Disabilities Act (ADA). If you have severe anxiety and want more information, seek help from the ADA coordinator on your campus.

Some general tips for test anxiety, particularly milder cases, are the following:

- ▶ Do some relaxation exercises—deep breathing, for example—right before the test.
- ▶ Visualize yourself taking the test and being successful.
- ▶ Be fully prepared. If you've done everything you can to prepare for the test, you'll be more confident and more relaxed.

With these new test-taking tools at your disposal, you'll be at your best the next time you have to take any type of exam.

The Role of Psychology in Our Lives: Connections and Careers

Just as learning how to do better on the many types of tests you will encounter in college helps play a role in your success, so does learning more about yourself and those around you play a role in how you adjust to college life, how you develop friendships, and how you make the most of the next few years of your life. Some of you

What I Know Now

Alex • Psychology Major • Age 20 • Madison, WI

Now that I am back again after leaving school a year ago, I know I will not study more.” Alex, a 20-year-old sophomore psychology major was discussing his plans with a few friends in the cafeteria. They stared at him in disbelief. How could someone who got a .83 GPA at the end of freshman year say he was not going to study more? They thought he was headed for trouble again . . . until Alex explained. “I am not going to just study more. I am going to study smarter.” What Alex had learned the hard way was that just looking at notes, just looking at the book, doesn’t get anyone anywhere. He knew, first hand, that he had to take an active role in his studying. He recalled, between gulps of soda and bites of pizza, how, in his general psychology class his first semester, he thought he had everything under control. “I went to class. I took notes. I read my book. But it pretty much ended there. Right before a test, I would take out my notes and my book and skim through them again. Sure I remembered all the stuff. It was right there in front of me! I looked at my notes for a few hours before each test. What I also did was listen to music, watch television, and check out the action below my window. What I didn’t do was practice taking tests.” Alex learned the hard way how not to study. “I went to my psychology tests and froze. Nothing looked familiar anymore. Nothing had really sunk in. The same thing happened in all my classes.” Looking back now, Alex learned a valuable lesson. “Finally, at the end of the year, with a lousy .83 GPA, I left college thinking I would go work. I got a job at a grocery store near my house. After a few weeks, I noticed a woman studying in the break room. She told me she was going to the community college for business. After I sat down to eat my lunch, I noticed she was taking what looked like a test, but it turns out that she had made up her own test from her notes and flash cards. She wanted to see if she really knew it. After that, I also enrolled in the general psychology course at the community college and got her to help me study. I ended up with a B. The difference that time was I took an active role in my studying. I wrote information on note cards, I made up practice tests, I had her quiz me. I even talked to the professor about what would be on the test. What I know now is that taking tests is not that hard—once you learn to do it the right way.”

may have taken a psychology course in high school, but whether or not you have any background in the field of psychology, you will no doubt be exposed to the discipline in college. Through a course in introductory psychology, you will learn concepts and applications that will help you in other courses as you grow and learn more about yourself and what you want to do. Likewise, the field of psychology deals with mental health issues, and, with the many transitions you make as a college student, your emotional health is just as important as your physical health. Psychologists, psychiatrists, and counselors are trained to help people deal with anxiety, depression, grief, addiction, and a myriad of other psychological conditions and mental health issues. Understanding more about psychology helps you to understand the importance of mental and emotional health and about what people in this profession can do for you while you are in college or during any stage of your life.

For those of you interested in pursuing psychology as a major, there are many career options. The careers with which most people are familiar when they think of psychology are psychologist, psychiatrist, and counselor. If you are interested in psychology and want to enter a helping profession, opportunities exist, although it is important to know that graduate study is often required. Psychologists, psychiatrists, and counselors work in hospitals, schools, government agencies, and private practice. Learning as much as you can about the many options you have will help you decide which direction you may want to take. But many other options abound for those who are interested in and trained in human behavior. Think about how people who work in human resources, sales, or marketing, for instance, can benefit from a background in psychology through their understanding of why people may do what they do, what motivations they may have, and how people might react to new products or programs. Those with a background in psychology understand how to conduct research as well, and combining an understanding of research and people can lead to opportunities in conducting market research, solving crimes or working with criminals, or assisting in political campaigns or in other government projects. There are many possibilities for those who understand who they are and where they know psychology can take them.

Increasing Your Yield

Readings for Practical Application

In this chapter, we have covered one of the most critical elements of your college education: taking tests. From objective and subjective tests to career and professional tests, the chances are that, like it or not, you are going to be taking quite a few tests in your college career. We also talked about test anxiety—what it is and how to deal with it. Learning the art of test taking will make you even more effective in navigating this experience.

A lot of what we know about how to do well on tests is based on research from the field of psychology. This chapter's Textbook Case reading, for example, deals with one of the key elements of good test taking: memory. This passage deals specifically with one theory about why we sometimes do not remember.

As you read this textbook excerpt, apply the strategies you have learned for better comprehending textbooks in psychology.

In the Life After College reading, you will learn about the many career opportunities available to psychology majors, and not just the obvious ones. You will learn that because psychology is the study of human behavior, it relates to many different fields. Whether or not you choose to seek a career in the field of psychology, however, you will see that understanding more about the subject will make you more successful at dealing with and helping people in any profession you choose.

Reading and Study Tips: Psychology

Unique Features and Comprehension Strategies

Unique Feature of Textbooks in Psychology

Strategies for Comprehension

Psychology textbooks feature discipline-specific vocabulary.

- Internalize the vocabulary.
- When you come across a new vocabulary word, look it up in the glossary or a dictionary; then try to use the word in context in a different sentence to help the word become part of your own vocabulary.

Much of what is covered in psychology textbooks is research-based.

- Look up the primary research.
- Primary sources can help you understand how a theory was developed.
- Primary sources can also help you better understand studies to which your text may refer.
- Use the list of references in your textbook to locate the sources.

Psychology textbooks provide examples of the application of concepts.

- Think of your own applications for the theories, concepts, and definitions presented.
- Be prepared to apply the concepts and theories to real-life examples of your own.

Unique Features and Comprehension Strategies *(continued)*

Unique Feature of Textbooks in Psychology

Psychology texts often provide chapter outlines.

Material in psychology textbooks is not always presented in a linear fashion.

Strategies for Comprehension

- Read chapter outlines and summaries before reading the chapter to help you better comprehend new material.
- Use the chapter outline as the basis of a more detailed study outline you make after you read the chapter.
- Annotate to help you understand the “big picture.”
- Use your annotations for quick review when you return to the text the next time.

Reading 1: A Textbook Case

This excerpt from a chapter in a psychology textbook is included here because of the connection between learning and studying and psychology. In many cases, knowing why certain study techniques work (or don't work) for you can be as important as knowing what they are. Why? Because in college you will be called on to adapt your study skills in new ways in order to meet the challenges posed by college-level classes. Applying the *exact same* study strategy that you used in high school may prove unsuccessful. But if you understand how the strategy works, you will be able to adapt it to new modes of learning. The following selection examines memory, one of the basic building blocks of studying. Much of what we learn in college we need to remember at one point or another, but many factors determine what, how long, and how well we remember. Forgetting things, of course, is the opposite of what we want to do. This passage looks at interference theory, one of several theories of forgetting, which asserts that forgetting results from the interference of memories with each other. As you read, think about examples you can draw on from your own life.

BEFORE YOU READ

Do you remember what you had for breakfast two days ago? If so, why, and if not, why not? What do you think helps you remember some things, and what do you think causes you to forget other things?

Interference Theory: When Learning More Leads to Remembering Less

J. Nevid

Chances are you have forgotten what you ate for dinner a week ago Wednesday. The reason for your forgetfulness, according to interference theory, is interference from memories of dinners that preceded and followed that particular dinner. On the other hand, you are unlikely to forget your wedding day because it is so unlike any other day in your life (except for those, perhaps, who have taken many walks down the aisle). Interference theory helps explain why some events may be easily forgotten while others remain vivid for a lifetime. The greater the similarity between events, the greater the risk of interference. There are two general kinds of interference, *retroactive interference* and *proactive interference*.

Interference occurring after material is learned but before it is recalled is called retroactive interference. Perhaps you have found that material you learned in your 9:00 A.M. class, which seemed so clear when you left the classroom, quickly began to fade once you started soaking in information in the next class. In effect, new memories retroactively interfere with unstable earlier memories that are still undergoing the process of memory consolidation (Wixted, 2004).

Proactive interference is caused by the influence of previously learned material. Because of proactive interference, you may have difficulty remembering a new area code (you keep dialing the old one by mistake). Or you may forget to advance the year when writing checks early in a new year. Figure 4–1 illustrates retroactive and proactive interference.

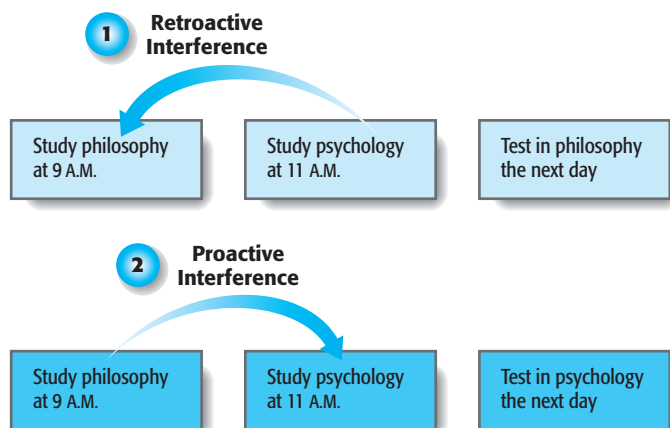


FIGURE 4–1 Retroactive and Proactive Interference. In retroactive interference, new learning (psychology in the first example) interferes with recall of previously learned material (philosophy). In proactive interference, previously learned material (philosophy in the second example) interferes with recall of the new material (psychology).

Though some interference is unavoidable, we can take steps to minimize its disruptive effects.

- ▶ *Sleep on it.* Want to improve your recall of newly learned material? Sleep on it. Investigators believe that sleep enhances learning and memory by helping to convert fragile new memories into lasting ones (Gómez, Bootzin, & Nadel, 2006). Learning material and then sleeping on it may help you retain more of what you learn.
- ▶ *Rehearse fresh memories.* New long-term memories are fragile. Practicing or rehearsing fresh memories aloud or silently can strengthen them, making them more resistant to the effects of interference. Repeated practice beyond the point necessary to reproduce

material without error is called overlearning. Apply the principle of overlearning to help ensure retention by rehearsing newly learned material at least two times beyond the point of minimal competence.

- ▶ *Give yourself a break.* Try not to schedule one class directly after another. Give your recent memories time to consolidate in your brain.
- ▶ *Avoid sequential study of similar material.* Try not to study material that is similar in content in back-to-back fashion—for example, avoid scheduling a French class right after a Spanish one.

Interference may help explain the serial position effect, the tendency to recall the first and last items in a list, such as a shopping list, better than those in the middle of the list. The unfortunate items in the middle are often forgotten. In a study in which people were asked to name the last seven U.S. presidents in order, they were more likely to make mistakes in the middle of the list than at either the beginning or the end (Storandt, Kaskie, & Von Dras, 1998). Serial position effects influence both short-term and long-term memory.

Interference is the likely culprit in serial position effects. Items compete with one another in memory, and interference is greatest in the middle of a list than at either end of the list. For example, in a list of seven items, the fourth item may interfere with the item that it follows and the item that it precedes. But interference is least for the first and last items in the list—the first, because no other item precedes it; the last, because no other item follows it. The tendency to recall items better when they are learned first is called the primacy effect (Davelaar et al., 2005). The tendency to recall items better when they are learned last is called the recency effect. As the delay between a study period and a test period increases, primacy effects become stronger whereas recency effects become weaker (Knoedler, Hellwig, & Neath, 1999). This recency-primacy shift means that as time passes after you committed a list to memory, it becomes easier to remember the early items but harder to remember than later-appearing items in the list.

In sum, evidence shows that both the passage of time and interference contribute to forgetting. But neither decay theory nor interference theory can determine whether forgotten material becomes lost to memory or just more difficult to retrieve. Some forgotten material can be recovered if subjects are given retrieval cues to jog their memory, such as exposure to stimuli associated with the original situations in which the memories were formed. This brings us to a third model of forgetting, retrieval theory.

AFTER YOU READ

After reading this passage, identify some specific steps you can take or are already taking to minimize interference. When have you experienced the primacy and recency effects? Be specific. How can learning more about memory through psychology help you to become a better student?

Reading 2: Life After College

What types of careers do you think of when asked what you might be able to do with an undergraduate or advanced degree in psychology? Psychologist, psychiatrist, and school counselor may come to mind, to name a few. While these are very good career options in psychology, there are many more, based on the fact that psychology deals with human behavior. It may be difficult to come up with a career that is not in some way related to human behavior or does not require us to interact with other people. The following article makes a strong case for expanded career connections, while also illustrating just how important the study of psychology can be to all of us, regardless of our chosen career fields.

BEFORE YOU READ

What do you think people do with degrees in psychology? What other possibilities might there be for people with backgrounds in psychology and why?

Psychology's Growth Careers

T. DeAngelis

Psychologists' expertise in human behavior is increasingly welcomed in many nontraditional career settings.

Good news: Despite the country's current economic downturn, experts say it's never been a better time to be a psychologist, thanks largely to the psychology field's breadth and adaptability.

With the help of these experts, the *Monitor* has compiled a list of areas in which psychologists are in demand, either in terms of the number of positions available now, the growth potential of the area or both.

Some areas apply basic psychological training in novel ways or settings—for example, programs that combat unhealthy behaviors. Other areas are tied to the nation's well-being, such as bolstering the mental health of returning veterans, Americans' ability to cope with

terrorist threats or the psychological health of older adults.

Other trends are simply new spins on psychology practice. Although some psychologists fear that independent practice is increasingly a vestige of the past, innovators show it can remain a rewarding way to help people.

Overall, the expanding career market indicates that psychologists' expertise in human behavior is being recognized and embraced by more fields, in more ways, says Claremont Graduate University psychology professor Dale E. Berger, PhD, who closely tracks psychology careers.

"Most of the problems in the world are problems of behavior—how people treat others, how they treat the environment and how they treat themselves," Berger says. "We have an understanding of behavior and the methods to study it that allows us to address all kinds of important issues in a variety of settings."

SOURCE: Tori DeAngelis (April 2008), "Psychology's Growth Careers," *Monitor on Psychology* (39)4 from APA Online. <http://www.apa.org/monitor/2008/04/careers.html> accessed 5/16/08. No further reproduction or distribution is permitted without written permission from the American Psychological Association.

Program evaluation

One particularly hot growth area for psychologists also has the potential to make a major difference in public health: program evaluation. Using psychological research tools, evaluators assess the strengths and weaknesses of programs, policies and organizations to improve their effectiveness, says Stewart I. Donaldson, PhD, who with Berger and Kathy Pezdek, PhD, co-edited *“Applied Psychology: New Frontiers and Rewarding Careers”* (Lawrence Erlbaum, 2006).

Program evaluation is similar to a traditional psychological study, but it’s in the real world, Donaldson says.

“The tools of program evaluation enable psychologists to help prevent and solve some of the world’s most pressing social, community and organizational problems,” he says.

The number of professional evaluation societies worldwide has climbed from five in 1990 to about 50 today, Donaldson notes.

Expertise in program evaluation is critical for such groups as the Bill and Melinda Gates Foundation, which spends millions of dollars to make sure its programs tackling ills such as poverty, poor health care and unemployment are taking effect. Many program evaluators also work in the private sector to ensure the effectiveness of companies’ initiatives on diversity, productivity and quality of life.

The federal government also relies on program evaluators. Donaldson, for example, helped to evaluate the 1980s’ “Just Say No” anti-drug programs, and determined that they actually sent the wrong message—essentially that drug use is the norm, which, ironically, led to greater drug use. From that work sprang today’s more successful programs that ensure teens don’t misperceive the prevalence or “coolness” of drug use, Donaldson says.

Working with older adults

In 2004, Americans 65 and older made up 12 percent of the population. By 2050, they’ll make up 21 percent. These numbers—along with the fact that older adults are increasingly receptive to mental health services—mean that geropsychology is poised to be a major growth area, says APA Committee on Aging

(CONA) Chair Peter Lichtenberg, PhD, director of Wayne State University’s Institute of Gerontology.

“Geropsychologists bring skills—such as superior assessment, intervention and consultation abilities—that are sorely needed by our nation’s older adult population,” he says.

These psychologists work in a variety of capacities, including as service providers, researchers, directors of older adult mental health programs, and as designers of “smart homes” and products that help older adults more easily manage their lives. The work is varied and stimulating, adds Deborah DiGilio, director of APA’s Office on Aging. “Geropsychologists do everything from keeping older adults mentally and physically healthy and vibrant, to working with those who are frail and have cognitive impairments,” she says.

The field itself is maturing. In 2003, APA adopted the Guidelines for Psychological Practice with Older Adults (see www.apa.org/practice/adult.pdf). In 2006, field leaders convened a national training conference where they developed the “Pike’s Peaks” training model, and last year they formed a new organization of training programs that will support training at the competency level and beyond. In addition, CONA is working on projects to infuse geropsychology content into curricula from the high school to the graduate school level. (To find out more, visit www.apa.org/pi/aging/student_fact_sheet.pdf.)

Recognizing psychologists’ growing role in the area, in February, APA’s Council of Representatives adopted Blueprint for Change: Achieving Integrated Health Care for an Aging Population (www.apa.org/pi/aging/blueprint.html), a report developed by the APA Task Force on Integrated Healthcare for an Aging Population. The report highlights the importance of providing integrated, interdisciplinary care to older adults.

Aiding soldiers, veterans and their families

Given the federal push to improve mental health services for those serving in Iraq and Afghanistan, opportunities abound for psychologists in the Department of Defense and the Department of Veterans Affairs (VA).

The VA alone has funded more than 800 new psychology positions since fiscal year ’05, a 36 percent

increase, says Brad Karlin, PhD, of the VA's Office of Mental Health Services. As of December, the VA was still recruiting for 100 of those positions.

Besides providing one-on-one and group therapy to veterans, VA psychologists play a key role in such innovative new programs as national initiatives to integrate psychologists into general primary care, VA nursing homes and home-based primary care, where psychologists are key members of teams that take services to veterans unable to travel to the hospital. There are a small number of psychologists in research and administrative positions as well. (To find out more, visit www.vacareers.va.gov/, or call the VA's national job information line at 800-949-0002.)

Likewise, the DoD has a growing need for psychologists, says Col. Bruce Crow, PhD, clinical psychology consultant to the U.S. Army surgeon general. In the Air Force, Navy and Army, for example, only 82 percent of the 474 career psychologist positions are filled, for reasons ranging from the fact that some slots have only been open for a short time to the fact that a number of psychologists left active duty in 2004 and 2005 at the end of their service obligations. A number of civilian positions are available as well. Besides offering excellent salary and benefits and loan repayment for licensed psychologists entering active duty, the DoD pays for employees' continuing education and board certification. It also offers APA-approved internships with competitive salaries.

Moreover, the DoD offers the chance to work in positions with a high degree of responsibility and leadership potential, Crow says.

For more information, visit www.usajobs.com.

Homeland security

The Department of Homeland Security (DHS) "recognizes that behavioral, social and cognitive research is really important to their mission, so they're ramping up investment in those areas," says APA Executive Director for Science Steven Breckler, PhD.

Two DHS-funded centers in particular rely on psychologists to examine the impact of terrorist threats and events from a social and behavioral science perspective. The first, the National Consortium for the Study of Terrorism and Responses to Terror, or START (www.start.umd.edu), housed at

the University of Maryland, uses social and behavioral science to examine the origins, dynamics, and social and psychological impact of terrorism.

"Terrorism is a quintessentially psychological problem, on both the individual and societal levels," says social psychologist Arie Kruglanski, PhD, who heads the center's working group on terrorist group formation and recruitment. His team examines what motivates people to join terrorist organizations and how those groups elicit such motivations. Others are studying the psychology and sociology of terrorist group operations, as well as community responses to terrorist attacks and how to promote resilience.

The second DHS-funded center, the National Center for Risk and Economic Analysis of Terrorism Events, or CREATE (www.usc.edu/dept/create/), located at the University of Southern California, focuses on risk and economic analysis of terrorism. Social and behavioral scientists there study how people and groups make decisions following threat warnings or terrorism events, in order to better estimate the economic and social consequences of such events.

"So much has been written about the irrationality of terrorists, but they're not irrational at all in their goals and beliefs," says Richard John, PhD, who is helping to create a decision-making model that predicts how terrorist organizations might think about where and how to strike. "It makes more sense to view them as foreign countries or Fortune 500 companies with strategic objectives."

Such information could then be used by DHS to formulate strategies to mitigate risk, including allocating resources in a way that takes into account the risk potential of different locations, he says.

Government service

The federal government is hungry for psychologists, in part because it has created new positions, but also because many senior psychologists are retiring, says Jessica Kohout, PhD, director of APA's Center for Psychology Workforce Analysis and Research.

Psychologists who work in the government hold a number of key posts, for example as program or division directors in such science-centered agencies as the National Institutes of Health (NIH) and the National Science Foundation (NSF). At NIH, many

institutes such as the National Institute of Mental Health, the National Institute of Child Health and Human Development, the National Cancer Institute and the National Institute on Drug Abuse, have active and vibrant behavioral science programs, Breckler notes, while NSF maintains programs in social psychology, human cognition, developmental psychology, cognitive neuroscience, law and social science, and decision science. In addition, various NIH institutes have their own research labs, which employ many lab chiefs, scientists, research assistants and postdocs.

NIH lists positions at www.jobs.nih.gov.

To tap into jobs at any federal agency, visit usajobs.gov. The National Science Foundation posts job openings on its Web site, www.nsf.gov/about/career_opps/.

Other psychologists in government work as legislative aides to members of Congress, including former APA President Pat DeLeon, PhD, who has worked for Sen. Daniel Inouye (D-Hawaii) for 34 years.

His psychological background helped him achieve such coups as establishing a national pediatric-emergency service program and creating postdoc psychology positions at the VA. “Public servants are limited only by their own vision, energy and interpersonal skills,” says DeLeon.

And, of course, a few psychologists have become politicians themselves, including Rep. Brian Baird, PhD (D-Wash.) and Ohio Gov. Ted Strickland (D).

A great way to test these political waters is to apply to APA’s Congressional Fellowship Program, which funds several psychologists each year to work as special legislative advisers to members of Congress. Depending on their expertise, fellows work on issues as diverse as violence and abuse prevention, health disparities, services for people living with HIV/AIDS and mental health care reform. (Visit www.apa.org/ppo/fellows/congressional.html for more information.)

Psychologists are also in demand at the Federal Bureau of Prisons, where they work in clinical services, administration, research and training. The need has never been greater, with one in 100 Americans now behind bars—the highest number in history—according to a new report from the Pew Center on the States.

Philip Magaletta, PhD, clinical training coordinator in the psychology services branch there, estimates that the bureau has about 20 positions open annually; internships are also available.

“There is no greater high-risk, high-need group than inmates, and psychology has barely begun to scratch the surface of the potential it holds for addressing their needs,” he says.

Workplace applications

Industrial-organizational (I/O) psychology has long been a popular and lucrative area, and it’s growing: Membership in the Society for Industrial and Organizational Psychology or SIOP (APA’s Div. 14), for example, has risen 11 percent since 2000, and student membership has gone up 63 percent in the same time period, says SIOP President Lois Tetrick, PhD.

The field takes core areas of the psychological literature—testing, measurement, statistics, social psychology, cognitive psychology, as well as research on attitudes, teams and personality—and applies them to the wide and changing variety of workplace settings, cultures and employees, says Tetrick.

In recent years, technology, communications and globalization have all influenced the way I/O psychologists think about organizations and work design, Tetrick notes. For example, they’re applying the human-factors literature on human-machine interactions and virtual teams in work with companies in these areas. In the international arena, I/O psychologists have paid increasing attention to cross-cultural issues related to communications, attitudes, and organizational culture and climate.

Two areas are particularly popular for psychologists at the moment, says Tetrick: executive coaching and occupational health psychology. Executive coaching, which combines clinical and I/O skills to improve executive performance, is SIOP members’ second most frequently cited primary area of interest after selection and hiring (see <http://gradpsych.apaps.org/nov06/coaching.html> for more).

Meanwhile, occupational health psychology is a burgeoning subfield that focuses on preventing ill health and fostering good health through job design, good leadership and stress reduction. (Tetrick

edits the field's APA journal, *Journal of Occupational Health Psychology*.)

For more information, visit Div. 14 at www.siop.org, which offers links to a range of job and networking opportunities.

Courtroom expertise

For those with the right training, forensic psychology is a booming area, says psychologist Alan M. Goldstein, PhD, a professor at the John Jay College of Criminal Justice and editor of "Forensic Psychology: Emerging Topics and Expanding Roles" (John Wiley & Sons, 2007).

Forensic psychologists conduct psycho-legal evaluations and offer their opinions as expert witnesses in criminal, malpractice and other cases, says Goldstein. The area became an APA-approved specialization in 2001. Since then, "more and more practice areas are emerging," Goldstein says, including assessing and managing workplace and school violence; assessing and evaluating cases of clergy abuse, elder abuse and those involving end-of-life issues; and conducting independent medical evaluations.

Meanwhile, forensic neuropsychologists—who have training both in neuropsychology and forensic psychology—are in greater demand as well, as courts increasingly seek expertise in medical and accident cases.

Practice niches

According to data compiled by APA's Center for Psychology Workforce Analysis and Research, the percentage of psychologists in independent practice climbed from 24.6 percent in 1987 to 38.7 percent in 2006.

That said, experts believe new thinking and strategies are needed to keep the area flourishing. One way to do this is by developing specialty niches focusing on areas that others with less training can't do as effectively. APA Div. 42 (Independent Practice) President-elect Tammy Martin-Causey, PhD, advises psychologists to do a needs-assessment in their communities first, then choose niches from there. So, for example, if you live in an area with a large population of smokers, you may want to develop a practice focused on smoking cessation, she says.

Practices that accommodate clients' busy schedules are also in demand, Martin-Causey says. With the clients in her Phoenix-area practice, for example, she keeps late office hours, holds lengthy couples therapy sessions so people don't have to commute long distances as often, and adds leadership development workshops to her mix of services.

Multidisciplinary applications

Perhaps more than any other scientific discipline, psychology is a "hub" science, one that connects to virtually all of the social, behavioral, mathematical and biological sciences, says APA's Breckler. That means psychologists are particularly well-positioned to take advantage of the trend toward multidisciplinary research and applications.

Funding is following suit: NIH, for instance, has poured millions of dollars into multidisciplinary health and social science projects in such areas as obesity, elder self-neglect, stroke neurorehabilitation and health disparities (see the May 2005 *Monitor* for more).

One \$22 million, NIH-funded effort is the Consortium for Neuropsychiatric Phenomics, based at the University of California, Los Angeles. There, 52 investigators from several institutions are testing a new paradigm for understanding mental illnesses based on basic brain processes, rather than the currently used descriptive diagnostic categories. In particular, the team—including experts in genetics, genomics, molecular biology, psychology, cognitive neuroscience, neuroimaging, clinical psychiatry, animal behavior and other areas—is examining memory mechanisms and response inhibition, two aspects of brain function that span multiple mental disorders. Eventually, findings could be used to tailor treatment in more refined ways.

Meanwhile, David Woods, PhD, professor at Ohio State University's Institute for Ergonomics, says his human factors students are securing fascinating jobs post-graduation, thanks to their multidisciplinary course load. Besides traditional human factors classes, they take courses in digital production,

new media and innovation to learn how to create computerized products and systems with the input of artists and designers.

When they leave the program, they take jobs in areas such as designing devices and systems that center medical care on promoting long-term patient health and creating robots and sensors that extend humans' ability to work in remote or dangerous settings, such as on space missions and search-and-rescue operations.

“When engineers and computer scientists design products, they tend to push technological boundaries, but they may neglect to integrate the product into the context and goals of human activity,” Woods says. “It is critical to blend the psychological perspective into the mix of fields that are reshaping how people interact, work and use their talents through new media.”

The same holds true for myriad other interdisciplinary areas where psychology plays a critical role, others say.

AFTER YOU READ

Based on what you have just read and your own experience, why does psychology lend itself to so many interdisciplinary applications? Provide some additional examples of your own.

Here are some other careers related to psychology for you to investigate:

- Probation officer
- Sales representative
- Crisis intervention counselor
- Market research analyst
- Personnel assistant
- Labor relations specialist
- Human resources administrator
- Art therapist
- Hotel event manager
- Child psychologist
- Alcohol and drug counselor
- Career counselor

And there are many more!

Compounding Your Interest: Further Readings

American Counseling Association

www.counseling.org

American Psychological Association

www.apa.org

American Sociological Association

www.asanet.org

DeGalan, J. (2006). *Great Jobs for Psychology Majors*. 3rd ed. New York: McGraw-Hill.

Human Services Career Network

www.hscareers.com

Marek, R. (2004). *Opportunities in Social Science Careers*. New York:

McGraw-Hill.

Stephens, R. (2003). *Careers in Sociology*. 3rd ed. Upper Saddle River, NJ:

Allyn & Bacon.

Sternberg, R. (2006). *Career Paths in Psychology: Where Your Degree Can Take You*. Washington, DC: American Psychological Association.

5 Critical Thinking Strategies for the Academic Investor



"For there is nothing either good or bad, but thinking makes it so," Hamlet muses in Shakespeare's play of the same name.

In a sense, this is exactly the point of critical thinking. You, the critical thinker, have the ability to determine what you think about issues, about what you've read, and about what you see or hear. You may make an initial judgment on the basis of a first reaction, but it is in looking more closely at something that you can really determine its merit. To be an effective critical thinker, you must base your judgments on sound principles.

As an academic investor, you want to be as aware as possible of potential pitfalls that could put your academic investments (such as time, effort, and reputation) at risk, and you also need to be able to recognize a good investment opportunity when you see one. How do you do this? By

This chapter will cover the following topics:

- ▶ Becoming a Critical Thinker Every Day
- ▶ Fact Versus Opinion
- ▶ Arguments
 - ▶ Making an Effective Argument
 - ▶ Recognizing Bias in Arguments
- ▶ Fallacies
- ▶ Gathering Evidence
- ▶ Solving Problems in the Real World
- ▶ Reading and Watching the News Critically
- ▶ The Role of Speech Communications in Our Lives: Connections and Careers

Think About It



Answer the following questions in the space provided.

Why might a tobacco company be a biased source of information for a research project on second-hand smoke? What are some other examples you can think of in which a company or other organization might be biased? What problems may this cause, and what can you do to be sure you receive as much objective information as possible?

being a critical investor. At the college level, what this really means is being a student who applies critical thinking skills in all aspects of his or her college career.

Critical thinking is “the careful, deliberate determination of whether we should accept, reject, or suspend judgment about a claim, and the degree of confidence with which we accept or reject it” (Moore & Parker, 1997). As a critical thinker, you are called upon to make judgments about many things you encounter in everyday life and in your academic pursuits. You cannot accept everything you read, hear, and see at face value. The mere fact that something is in print does not make it true or valid. Just because someone says something happened does not make it a fact. Likewise, something that is a fact is not an opinion. But you may have an opinion about it. Confused? That may not be a bad thing. Admitting that discerning fact from opinion is a complex—and sometimes confusing—process is often one of the first steps to becoming a critical thinker. This chapter will help you work your way through the confusion so that thinking critically becomes second nature.

FIRST THINGS FIRST

Are you not yet convinced that you need to be a critical thinker? Let’s say you are writing a research paper on the effects of second-hand smoke for your health class. On the basis of the results of some quick searching on the Web, you are arguing that second-hand smoke isn’t really that bad. Sounds okay, right? Hold on. Where did you get your research? If in looking back at the Web pages you visited, you discover that your main source was a major tobacco company, you could have a problem. Not that the results are automatically negated, but you have to be aware of the possibility of bias. Even if you don’t notice it, your audience will, and that can lead them to question your entire argument. Did you think critically about your sources? If not, you may soon find out that your investment of time and effort was ineffective. To avoid this problem in the future, you need to learn how to think more critically.

Becoming a Critical Thinker Every Day

Critical thinking is not just a classroom exercise. You need to be a critical thinker in all aspects of your everyday life, from having conversations with friends, to watching television, to choosing the best major or career. Every day you must make decisions that require you to understand thoroughly what is going on, what your options are, and what the best choice may be. It could be as simple as what to eat for dinner. It could also be as complicated as ending a long-term relationship or transferring to another college. Once you begin to see critical thinking as an



The student in this photo appears to be waiting for a train. If you were alone in a city for the first time and needed to use the train or subway system, what would you do? What steps would you take to be sure you did not get lost? How can you compare this to getting around on campus? What have you done and what can you still do to better navigate the campus in order to make the most of what it has to offer?

everyday activity, it will become second nature. Here are some examples of everyday situations that require good critical thinking skills:

It is almost midterm and you are failing your biology class. The class is required for your major, and you need it now to stay in the proper sequence of courses. You feel like you will never pass it, however, and wonder if you should drop it.

You have gotten in the habit of eating fast food in the cafeteria and have gained weight and feel lethargic. You contemplate a change in your diet and wonder if you should seek professional guidance.

Your friend has all but moved into your room because she doesn't get along with her roommate. You want to help her, but these constant visits are keeping you from getting your work done.

You are having trouble keeping up with your classes because you are in a difficult major. You really want to try out for the lacrosse team, however. You wonder whether or not you can be a good student and a lacrosse player at the same time.

A friend has recently been telling you that he is contemplating suicide. You have spent several sleepless nights helping him and have missed a number of classes as a result. You don't want to abandon your friend, but you also don't want to flunk out of school.

It is almost election time, and you have done little to keep up with the candidates and the issues. One of the candidates visits your campus and says that, if elected, he will provide more financial assistance for college students. You wonder if you should vote for him on the basis of this one statement.

A friend of yours is working an overnight shift at a local warehouse in order to earn enough money for expenses. Lately, though, she has been missing her two morning classes because she's too tired. She told you recently that she is probably going to fail both of those classes.

You recently returned to college after dropping out ten years earlier. Since then you have had two children who are now in elementary school. Although you thought that you would have more time now that your children are older, the opposite is proving to be true. With all of their homework and activities, you barely have enough time to attend to their needs and the needs of your spouse, let alone do enough for the three college classes in which you are enrolled. You are beginning to think that going back to college was a mistake.

At a couple of recent parties, you drank heavily and blacked out for parts of the evening. You were told by friends about some of the embarrassing things that you did. You don't want to get a bad reputation, but you also don't want to stop having fun.

A credit card company has set up a stand in the student union building. The company representatives are offering some great free gifts for signing up. You'd like the gifts, but you are afraid that if you get the card you will overuse it, and you don't even have a job.

At the student union, you and your friends are sitting around talking about a professional athlete who has been charged with sexual assault. One of the friends says, "I know he's guilty. I can see it in his face."

Obviously, you will have many assignments in college in which you will analyze and develop arguments, but it is just as clear that you can't stop thinking critically when you leave the classroom. The preceding scenarios are real-life problems in need of real-life solutions. Later in this chapter, you will be exposed to specific problem-solving strategies that can be applied to these problems, as well as to other problems you will encounter while in college.

Fact Versus Opinion

A dolphin is a mammal. Pearl Harbor was bombed on December 7, 1941. Harvard University was founded in 1636. Everyone needs a college degree in this current employment climate. A Granny Smith is a type of apple. Is there an opinion among these sentences? Which one is it? If you said the opinion is "Everybody needs a college degree in this current employment climate," you are correct. Why? Because an opinion is a belief that needs support. It can be argued about and debated. You, as a college student, may feel one way, and your friend, who joined the army, may feel another way. You can both go out and gather evidence to argue one way or the other. A conclusion may never be reached. Think about it. Your friend may offer as an example someone such as Bill Gates, who never finished college but is one of the wealthiest people in the world. You may be able to find evidence of college graduates being less susceptible to layoffs than those with little or no college. Your friend may counter with statistics on the healthy job climate for plumbers and electricians, both of whom do not need a college degree to work in their field. It can go on and on.

A fact, however, cannot be argued. It can be proved. A statement of fact does not include evaluation or judgment. A fact can be verified by tests, measurements, historical records, or other sources of information. If you indicated that all the other sentences at the beginning of this section were facts, you were correct. Why? You can prove each one. Let's begin with the dolphin. You can prove it is a mammal by citing scientific documents that list the characteristics of a mammal and showing that a dolphin exhibits those characteristics. It would also be very easy to find historical documents indicating the date that Pearl Harbor was bombed. You may even still be able to speak with eyewitnesses. To prove when Harvard University was founded, you could also turn to historical documentation. As far as the Granny Smith is concerned, you can find proof that there is a type of apple called a Granny Smith.

Here are some things to remember about facts and opinions:

- ▶ Words contained in statements of facts and opinions are often very different. Facts contain concrete words referring to specific things, dates, and information that can be proved. Look for words such as *17 pounds*, *1974*, *68 degrees*, *oak tree*. Opinions, on the other hand, contain abstract words that are hard to measure, such as *hot*, *cold*, *hate*, *tall*, *short*, *beautiful*.
- ▶ Statements that show attitudes toward something are opinions because they cannot be proved as absolute fact. For example, when a student says, "College algebra is a waste of time," he or she is expressing a personal opinion. This student, if engaging in a debate about this topic, would need to provide support for this

opinion in the form of examples or reasons why, in his or her particular case, an algebra course is a waste of time. This student may be an art major who feels that more art courses are more important than math; a business major, by contrast, might not have as much support for such an opinion.

- ▶ Students need to be able to distinguish between facts and the interpretation of facts. One of the most widely studied events of the last fifty years is the assassination of President John F. Kennedy. Experts agree that he was killed on November 22, 1963. That is a fact. It was captured on videotape and witnessed by countless numbers of people. It has become a matter of historical record. The interpretation of that event, however, varies widely. Many accept that a single gunman was responsible, whereas others speculate that the assassination was part of a conspiracy. These are opinions—neither has been proved. The *fact* remains, however, that Kennedy was killed on November 22, 1963.
- ▶ Be aware that many little facts do not always add up to one big fact, because that big “fact” may still remain an opinion. Let’s go back to the opinion asserted earlier that everyone needs to go to college in this current employment climate. You may be able to prove that the average starting salary of a software engineer with a bachelor’s degree is higher than the average starting salary of a factory worker at a large automobile plant. You may also be able to prove that the lifetime earnings of people with bachelor’s degrees are a significant percentage higher than those of people with a high school diploma. You may even be able to prove that certain jobs are available only to those who have earned at least a bachelor’s degree. You may have gathered all these facts, but these facts do not make the original assertion that a college degree is necessary in the current employment climate any less of an opinion. Why? Well, what about the facts that your friend will marshal to support the other side of that argument? He or she may show that jobs not requiring a college degree are more plentiful in a certain geographic location. He or she may also show that the cost of college and the income loss while in college will not be made up by the possible higher salary. Both sides offer good arguments. Remember, an opinion is something that can be argued. But all the evidence that can be gathered does not transform the opinion into a fact.

Arguments

What are we talking about when we discuss argument? In this context, we’re not talking about the type of argument two people might have if they are angry at each other. What we are talking about is forming an opinion or making a claim about an issue and using evidence to support it. Still, what does that mean? For you as a college student, making an argument, especially in the context of a college-level paper, is expressing your particular belief about a topic and being able to substantiate that belief. You can have an opinion about computer-based registration procedures, such as “That’s not going to work” or “This is a better way.” In order for that to be an argument, however, you need to back it up with research (in other words, you’ve done some homework on the issue) and proof that your view has support. Therefore, instead of simply “That’s not going to work,” you can

Teamwork Activity

The object of this activity is to help you work together with your classmates in distinguishing facts from opinions. Being able to do this will help you as you take more classes and conduct more research in college. It is one of the most basic skills of a good critical thinker.

Break into groups of three or four. As a group, read and discuss the statements listed in the following table. After you have discussed each one as a group, enter a check mark to indicate whether the statement is a fact or an opinion. Then, in the space provided, enter a brief reason why you answered as you did.

	Fact	Opinion	Why?
Biology is the best major to prepare for medical school.			
Dr. Gramley teaches Bio 101 at 8 a.m. on Tuesdays and Thursdays.			
The turkey wrap in the cafeteria is a healthful alternative to a hamburger.			
The math text for Math 105 was written by a professor at this school.			
Speech is the best course to take as a first-semester freshman.			
How can an activity like this be beneficial as you learn to be a more critical thinker?			

say, “That’s not going to work because there are not enough computer terminals that will have access to the online registration.” This contention would be followed by evidence. (For example, your discovery that there are only 200 computers to serve 5,000 students.)

To review, every argument is about some issue (in the preceding case, computer-based registration). The person making the argument about an issue, then, actually makes a claim, which is his or her own belief about that issue (computer-based registration will not work yet because there are not enough computer terminals on campus that will have access to the registration). The claim, however, is not the end of an argument. You will note that a claim must be accompanied by supporting evidence in order for an argument to be a strong one.

Evidence comes in many forms, and the type of evidence needed to support a claim depends on the type of claim you are making. For example, if someone has claimed that fraternity membership has a negative effect on grades, you should expect to see evidence such as data, which may consist of actual grades of students before and after they joined a fraternity on your campus. You may also see that the person making the claim has researched other studies done on the same topic



The person in this photo is giving a presentation about the benefits of living a vegetarian lifestyle. What does she need to know about her audience? What might she expect their counterarguments to be? What types of information should she be providing to support her case?

and has cited those researchers' results. Anecdotal evidence from personal experience may also be offered (and can be an effective way of persuading), but it would not in itself be enough to support the claim. Thus you can see that evidence can take many forms, but you also need to be aware that evidence should not be biased.

It is important for you to understand the information you have just read about the construction of an argument so that you can better recognize the arguments of others (which is an important skill in college) as well as formulate your own. The ability to do both helps you to be a better critical thinker. Throughout your college career, you will be bombarded with information from many different sources. Much of this information will be in the form of arguments made by others. Your first step in learning to think critically about this information is being able to recognize an argument when you see one. Next you want to be able to recognize a *good* argument when you see one. You also want to be able to "argue the argument"—in other words, to be able to agree or disagree by constructing an argument of your own.

Making an Effective Argument

Of course, just recognizing strong arguments is not enough. You need to be able to construct arguments of your own. How do you do that? You have already tackled the first step, which is to understand what makes a good argument. Your own argument should have a topic (which is a focused issue) and a claim.

A topic for an argument is sometimes assigned to you by a professor. At other times, you will be given a choice. Either way, the topic should be manageable in the amount of time and space you have to make it. If you are writing a two-page paper, for instance, you cannot expect to argue effectively a topic such as genetic modification of foods or nuclear waste disposal (although you may be able to narrow these topics down further for longer papers). A better topic for a two-page paper might be something closer to home, such as life in the residence halls or campus dining.

The claim, however, is not the end of an argument. You have a right to a claim about a particular issue, but you must be prepared to back up that claim. To do that, you need to gather evidence. Support in the form of evidence is vital.

Once you have chosen a manageable topic, you have to be specific in terms of what your focus will really be. Even a focused topic can have many different facets, and you don't necessarily want to address them all. Take the topic of life in the residence halls. What specific aspect of life in the residence halls do you wish to tackle? There are certainly many aspects of residence life, and you can't cover them all in a two-page paper. Through the process of brainstorming, you could identify

one important issue, such as the use of curfews for students in the residence halls. That is much more specific.

Finally, what is your opinion about curfews in the residence halls? There are certainly many opinions about them. What is yours? If you felt that curfews don't improve student safety in the residence halls on your campus, that would be your claim.

What is the next step? Evidence. First, you could gather from the campus safety office data such as crime statistics, which are public information. You could compare the statistics for residence halls that have curfews to the statistics for those without curfews. You could also read studies that have been done on the issue by researchers on other campuses and cite these studies as evidence. Personal experiences could be used, but not as your sole source of evidence. You should also remember that any argument has more than one side. Research the opposing view of your argument, and be prepared to counter the opposite side as well as to accept what valid points are made in support of it. No evidence or argument that you offer should be biased. If it is, it is not going to be very effective in persuading anyone who does not already agree with you.

Let's walk through the building of another argument:

Think of a topic related to your major or possible major.

What specific part of this broader topic is of interest to you?

What about it? What is your opinion?

What evidence can you gather in support of this topic? (List some specific types of evidence you think you will need.)

Recognizing Bias in Arguments

Everyone has a point of view that is based on his or her own experience. People can form a prejudice or attitude toward something, sometimes without even realizing it. These points of view, attitudes, and prejudices form what is known as bias. Bias can play a major role in how an argument is perceived by the audience. Remember that bias is not automatically a negative thing. For example, the director of a foster care program might argue for more funding to help the organization place the increasing number of children in need of foster care. You might expect this person to be biased in favor of more funding, but this bias may also reflect a genuine passion for the work that needs to be done.



DIY: Do-It-Yourself Activity

Choose a topic you believe to be controversial: the health risks of fast food, privacy rights, gun control, or the like. Now find one website related to the topic. In order to determine the legitimacy of using information gleaned from this website in a research project, ask yourself the following questions about the website:

1. What is the main focus of the website?

2. What individual or organization is the primary author or sponsor of the website?

3. Is the website presenting primarily facts or opinions?

4. Does the website contain research findings? Who conducted the research?

5. Do you think the website is biased? Why? Why not?

Let's look at another example that shows how bias works. On a pre-game show for a professional football game, a sports reporter goes up to a fan who is dressed in a New York Giants jersey, with his face painted blue and red. She asks, "Who do you think is going to win this game?" Predictably, he shouts, "Giants!" Later, the reporter asks a respected analyst and former player and coach, who answers, "Based on the performance of the quarterback, the offensive line, and that unstoppable running back, I'd have to go with the Giants." Which respondent are you more likely to believe?

Bias can be everywhere, from a conversation with a friend to a lecture in college. The better you are at detecting it, the better you will be at thinking critically. In dealing with arguments, detecting bias is especially important. When you analyze an argument, you have to be aware of the bias of the speaker or writer. Here are some ways you can try to recognize bias:

- ▶ **Determine the relationship of the speaker to the topic.** For example, if the topic is the health benefits of green tea and the speaker is the president of a tea company, you may expect some bias. On the other hand, if the speaker is a nutritionist who is not employed by a tea company, you may expect more objectivity. Bias can be difficult to spot, so you may have to



Which people watching this play do you think would be most biased in terms of reviewing the quality of the performance? Why?

Time Out Tip



If you have a problem that is causing you to have an emotional reaction, step back and try to treat your problem as an assignment to solve in which you could be totally objective. What would you do if you had an assignment instead of a problem? First, you would do research, ask others what they have done in your particular situation, and learn what their outcomes were. Write a pro/con list for each possible solution, and then, when you've done as much as you can, act on the basis of knowledge rather than emotion.

do some digging. If you were researching the role of consumer lawsuits against the fast-food industry, you might come across the Center for Consumer Freedom. Although this may sound like a consumer group, with a little digging you will discover that it is a restaurant lobbying organization. That doesn't discount what the group says, but it certainly changes one's perspective on its members' comments.

► **Be aware of any stereotyping by the speaker or writer.** For example, if the topic of a town meeting is controlling rowdiness by college students in the town bordering campus, and the speaker gets up and says, "All college students are heavy drinkers," you need to be alert to the possibility that the speaker is biased against college students and is not ready to engage in an objective argument. Although some students may drink heavily, certainly not all of them

do. This would be a hasty and misleading generalization. In fact, some town residents may be heavy drinkers, too, but neither fact directly addresses the problem at hand.

- **Be alert for highly charged, emotional statements or name calling in an argument.** A person who is highly emotional is unlikely to respond to a rational argument at that time. Likewise, an emotional person has a more difficult time being objective. At the same town meeting, another person gets up and says, "Someone told me that a drunken college student rode up on her front lawn and smashed into her garage door. These kids are animals! If she had been in her yard, she could have been killed! College kids should stay on campus and leave us alone!" Such emotionalism often weakens the argument of the speaker in the eyes of the listener. The emotional speaker may get some audience members charged up initially, but the argument itself is weak. You need to be aware of emotional speaking and writing, and you should avoid resorting to biased emotions in creating your own arguments.
- **Determine whether the speaker or writer is using accurate and complete information.** For example, a speaker might tout the benefits of an acne medication on the basis of the results of one study but fail to share the information that four other studies were inconclusive and that, in fact, one study showed harmful effects from the medication. When you present an argument, be sure to research your topic thoroughly, providing perspective on both sides of the issue while arguing for your side.

You should also be aware that many sources of information, as well as many writers and speakers, have biased perspectives that are a part of who they are. For example, a child of divorced parents may, as an adult, argue against marriage because of his or her own negative experience. Being a child of a difficult divorce is a part of who the adult becomes. This may be his or her built-in bias. There is nothing wrong with this bias unless you are not aware of it—and that is your responsibility as a critical thinker. You too may have your own bias, but in building academic arguments, you need to be as objective as possible.

Fallacies

Just as bias can weaken argument, so can a fallacy. What is a fallacy? A fallacy is a deceptive and erroneous argument. In other words, the argument is not valid and won't stand up to the tests of logic. The deception involved is important to understand because fallacies can be deployed to build convincing arguments, and the best way to avoid being taken in is to examine what's going on. The individual statements in the fallacy may be true, but the weak argument that they make does nothing, in the eyes of the informed listener, but damage the credibility of the person presenting the argument. Whether you are writing an argument or evaluating someone else's, you need to be aware of fallacies so that you can both avoid and detect them. Understanding fallacies is another important skill of an effective critical thinker.

Some of the most common fallacies are:

Ad hominem This is an attack on the person without addressing the real problem or issue. For example, a presidential candidate attacks an opponent's defense plan by saying, "You didn't serve in the military so what do you know about defense?" The opponent's defense plan could be very strong regardless of his or her own military record.

Let's take another example. Say a student receives a low grade on a test. Instead of addressing what went wrong on the test, he goes to his professor's department chair and argues that his professor is a poor teacher who doesn't care about the students. The problem, however, may have been the student's lack of preparation or misunderstanding of the questions. Immediately attacking the professor is just a way of avoiding the real issue.

Ad populum This fallacy claims that if the majority of the people support an argument, then it must be valid. For example, if an ad for peanut butter states that four out of five moms choose it, a consumer may think it must be the best. But does just the fact that more people buy it make it the best?

In the student union, you hear a group of engineering majors saying that education is the largest major on campus and therefore it must be the easiest to get into because they'll take anybody. Other engineering students also agree because the majority of the group said it. But the number of students in the major, of course, does not determine its quality and certainly doesn't mean that it's automatically the easiest major to get into or the best major for you.

Appeal to authority Also known as *ad verecundiam*, this common fallacy is often used in advertising and political campaigns. In a political campaign, you might see an ad like this: “These ten Nobel Prize-winning economists support Candidate X’s plan.” It may sound impressive, but Candidate Y might have ten Nobel-prize-winning economists supporting his or her plan, too. Neither one is using a logical argument.

In explaining to all of the business majors program changes that will require many of them to take more courses, the dean of the business college states that this is a great plan because the president of the university supports it. This appeal to authority is a fallacy because, first, the president may not have considered the students’ point of view, and, second, the president could be wrong.

Appeal to tradition This fallacy suggests that just because things have always been done one way, they should continue to be done that way. You might hear something like this: “Back in my day, the men worked, and the women stayed at home and took care of the kids. And everybody was happy with it.” The mere fact that this person had that experience does not mean that it’s the only way or that it takes everyone’s perspectives into account. Perhaps the women wanted to do something different but didn’t have the opportunity.

Let’s look at another example. Luis has returned to college after working for several years as a computer technician because he feels the degree will increase his chances of getting a better job. He and a group of other computer science majors have just completed summer internships in the field. They feel that the curriculum should have more programming courses. When they talk to the department chair, he says that the curriculum has been working well for years and that 90% of the college’s graduates get jobs in their field within six months. What’s missing from the department chair’s argument is that what’s happened in the past may not hold true for the future.

Bandwagon The bandwagon approach implies that something should be done simply because everyone’s doing it. Commercials often use this technique by implying that everyone is using a certain product and, therefore, you should also use it.

In the residence hall, you may hear that “everybody is going to the party, so you should go, too.” Just because everyone is going doesn’t mean it is a good idea. Let’s say the party ends up being raided and the students all get citations for underage drinking. Just because everyone was there didn’t make it the best place to be. This is a form of peer pressure.

Begging the question To beg a question is to accept or assert some assumption as a “given,” or foregone conclusion, without offering any evidence to support it. For example: “The increasing number of SUVs on the road will inevitably lead to greater traffic fatalities because of rollovers.” The statement alone is powerful, but there is no evidence in the statement to support it. As a reader, you are left with more questions than answers.

You might hear, “If you join a sorority, you’re going to become a snob and never hang out with anyone who’s not in your sorority.” Whether that happens or not, there is no evidence in the statement that shows that joining a sorority in itself will make it happen.

Circular reasoning This fallacy occurs when an author or speaker restates a point in such a way as to make it seem that the restatement provides support for the point itself. A stockbroker might say to a client, “You really need to buy some shares of this stock. The telecom industry is a good place to put your money. This is the stock for you to invest in now.” The statement is full of positive words, but the stockbroker has not given any evidence to support an argument for purchasing the stock.

At your college, you might hear an RA say, “We must enforce quiet hours in the residence halls. Quiet hours are important for students living on campus. Noise can be a real problem, and quiet hours are necessary.” Where in this statement is there any support for the claim that quiet hours should be enforced? All three sentences are essentially just repeating the claim that quiet hours are needed without providing any reason why.

Hasty generalization This is the fallacy of drawing a conclusion in the absence of any supporting evidence. Stereotypes are a good example of hasty generalizations. At the checkout counter, you see a grocery store tabloid with a cover story about the relationship between two movie stars. A woman next to you says to her friend, “That will never last. Those Hollywood relationships never do.” Indeed the relationship may not last, but it’s a hasty generalization to say that this particular relationship won’t last simply because the two are movie stars.

Let’s say you are doing poorly in your physics class. There is one older student in the class who has been getting A’s on every test. You hear some other students grumbling that she is messing up the curve and that older students always do better and make it tougher for the other students to do well. They’ve made a hasty generalization based on one person’s grades in one class.

Plain folks This fallacy aims to create the illusion that the speaker is just an ordinary person like his or her audience, when in actuality he or she may not be. Political candidates frequently portray themselves as representatives of the “working man” or the “middle class.” In reality, a large percentage of politicians at the national level are millionaires. By presenting themselves as “one of you,” the politicians aim to persuade you to agree with their views.

Let’s say a student was suspected of throwing a keg party in the residence hall. The hall director has the student in her office for questioning. In order to elicit a confession, the director says, “You can tell me what happened. I know what it’s like in college. We used to have parties, so I can sympathize. Just let me know what happened, and I’ll try to cut you a break.” The director is using a plain folks argument here.

Red herring The approach here is to avoid the main issue by introducing irrelevant material that might sway the intended audience into agreement. A teenager is arguing with her boyfriend, who has told her he can’t go to the movie with her because he has to meet his friends. She says, “You should go to the movie with me like you promised.” He responds, “Come on—I helped you with your math homework yesterday, so give me a break.” He has introduced an entirely unrelated issue that has nothing to do with his promise to go with her to the movies.

Let’s say a professor accuses a student of cheating on a test by looking at another student’s test. The accused student responds by saying, “Everybody was cheating—I saw a student with a cheat sheet on his water bottle.” The student is merely deflecting attention and has not addressed the real issue—his own cheating.

Slippery slope This is a claim that something should be avoided because if it isn’t avoided, something worse is going to happen. The slippery slope fallacy is really a scare tactic. For example: “If you give drug addicts clean needles at a needle exchange, you are encouraging drug use. Next thing you know, there’ll be drug addicts on every corner, and young people will feel free to experiment with drugs all they want.” The statement itself contains no evidence that this would happen.

A parent might say to a student, “I’m giving you this credit card only for emergencies. If you use it for anything else, you’re going to end up sinking into debt, you’re going to have to quit school to pay your bills, you’ll never finish college, and you’ll end up working at minimum wage for your whole life.”

Straw man The approach here is to misrepresent an opponent's argument in such a way that it is unappealing to anybody. Essentially, through this misrepresentation, one is attacking an opinion that a person doesn't really hold. Politician A supports a temporary moratorium on the death penalty until some systemic problems are investigated—including the recent execution of a person who was later determined to be innocent through DNA testing. Her opponent, Politician B, later attacks her for being soft on crime and wanting to let murderers roam the streets.

Two students have received a number of tickets for parking in spots designated for people with disabilities. They appeal the tickets to the student conduct board, which is made up mostly of students. In their appeal, they claim that the campus police ticketed them only because they were parking there to distribute leaflets protesting a campus expansion plan and that the tickets were an attack on free speech.

Fallacies can be tricky to recognize and are often used unknowingly. This is another important reason why you want to be able to recognize and avoid them. If you use one and an opponent recognizes it, it can destroy your audience's overall perception of the validity of what you are saying. Try to recognize fallacies in your own and other's arguments. Can you think of any that you've heard or read recently?

What I Know Now

Reese • Chemistry Major • Age 20 • Cincinnati, OH

By the second semester of her freshman year, Reese, a chemistry major, was ready to change majors. She studied hard, attended all her classes, got help from her professors, and went for tutoring. "Still," she says, thinking back, "I was barely passing some of my courses." Candace, Reese's roommate, said, "Why don't you major in psychology with me? I think it's really fun. Plus, I'm getting mostly A's and B's." If Reese had not been a critical thinker in her everyday life, she might have fallen for that one. (Here are just a few of the questions we would need to answer before we could assess the relevance of Candace's recommendation: Was Candace's major just easy for her? Did she have a good background in it? Were the professors she had taken so far easier graders than others she might encounter later? Did she cheat?) Instead, Reese decided to ask some critical questions and conduct some very important research. First of all, she took a major/minor finder inventory and a career assessment test. "The tests kept telling me I should major in chemistry!" she laughs. She also spent a few hours talking with her advisor, who told her it was not unusual for chemistry majors to do poorly the first year, as they adjust to the rigors of college chemistry, but then to see their grades improve in the sophomore year. And he recommended a few ways to study that she had not tried before. Reese also knew she did not want to deviate from her plan to be a researcher in the pharmaceutical field. Consequently, instead of jumping ship when the going got rough, she thought critically about her major, asked the right questions, and decided to stick it out. Now that she is a junior, she has a 3.1 QPA and is working on a research project with one of her professors. "What I know now is that you have to really look into a major before you choose it or change it. The more you know about yourself, the major, the courses, and career opportunities, the happier you will be! I am very happy I stuck with my major, regardless of how tough it was in the beginning. It was the right choice for me."

Lifeline



If you want to learn more about critical thinking, sign up for a critical thinking course. Many philosophy departments offer such courses, and they may count in your major as a general elective. You will have the opportunity to immerse yourself in this topic and will reap the benefits in your other courses. It may be best to take such a course as early as possible in your college career.

Gathering Evidence

On a dig, an archaeologist will look under the surface of the earth to find artifacts of life from many thousands of years ago. In the process of gathering evidence, he or she will build a case to explain how a certain culture rose and fell or how a particular animal's extinction occurred. The case must be made meticulously. When you prepare an argument, you are digging beneath the surface for evidence that will support your views when you present them to an outside audience. You have a right to a certain view, but in a formal argument you must be able to show why your view is indeed a strong one. After all, the mere fact that you are convinced that you are right will in itself do nothing to convince anyone else that you're right. The ultimate reason for making an argument is to convince an audience. And the most valid way to convince them is with strong evidence.

How do you gather appropriate evidence? The traditional methods you may have used for writing papers in the past are a good starting point. The library is full of resources that can be used to bolster your argument. Newspapers and periodicals, as well as scholarly journals and government documents, all contain material that can be used as evidence. The scholarly journals and government documents will contain results of studies on just about any issue. With these, you can check the primary source of a study that may have been cited in a newspaper or magazine (and you can see whether it was properly referenced). On the Internet, millions of resources are at your fingertips—just be sure to check the source of the information. You can interview an expert in the field. Create your own survey by polling fellow students on an issue. Local agencies (Red Cross, social services, hospitals) are another valuable resource that you can access.

As you build your case, you may come across material that has a different viewpoint. Don't ignore information that doesn't match your view. It is both more forthright and more effective to acknowledge competing information and then explain why you disagree with it.

As you gather this evidence, you should first determine which information is relevant to your argument. You may find that some of what you've dug up just doesn't belong. For example, say you are researching the issue of paying athletes at Division I schools. In the process, you come across an article about how recent high picks in the draft have fared in their first years in the NFL. This is obviously not relevant.

Then you need to check to see whether the evidence you have found is legitimate and complete. Is the information coming from reliable and unbiased sources? Is there more than one relevant study or article on an issue that helps support your view? Have you effectively addressed information that contradicts your viewpoint? When you have gathered the appropriate evidence and cited the appropriate sources, you can feel confident that your argument will stand up to close examination.

Solving Problems in the Real World

Let's face it—in life, you are going to be faced with problems. In college, problems can occur in a number of different situations—academic, social, physical, and otherwise. With the added stress of being in college, problems can sometimes seem

overwhelming. Problems, however, can also be seen as opportunities to grow as a person if you apply your critical thinking skills. Every problem may have more than one solution; it is up to you to find out which solution is best in your particular case. Let's consider the following example:

1. **Identify the Situation:** Markita, a geography major, has been doing well in all of her classes except psychology. After the midterm exam, she realizes that she currently has an F in this course.

2. **Identify Possible Problems:** Initially, you may think that her problem is that Markita has an F in psychology, but her F may just be a symptom of another problem. Certainly, the F is not a good grade, but Markita really needs to understand why she has an F in this particular class when she is doing well in all of her other courses.

3. **Examine Possible Problems:** A critical approach for Markita would be to look at some factors that may be causing her to do poorly.

She decides to examine the following:

- ▶ The professor and his teaching style
- ▶ The number of students in the course: 300
- ▶ The type of exams: multiple-choice
- ▶ Where she sits in class: toward the back because her friends sit there
- ▶ The text itself
- ▶ Her background in psychology
- ▶ The time of the course meeting: 8:00 a.m. MWF

She examines these factors one by one. She realizes that she is okay with the professor and his teaching style. Clearly, in a class this size, he is going to have to lecture, but that is not different from many of her other classes. She also has a biology course with 250 students, and she's getting a B in that class. She doesn't feel like she's just a number; she has participated in spite of the numbers, and the teaching assistant is always available during her office hours. She has always done well on multiple-choice exams, so she decides that's not a factor. Sitting toward the back has not been a problem in any of her other classes, and the professor has a microphone, speaks clearly, and uses PowerPoint presentations that are easy to read. The text seems accessible enough, and for the most part she has kept up with her readings. She took a psychology course in high school, and she did fine. So far, so good.

4. **Identify the Key Problem:** The last factor on her list, she realized, was creating some problems. The psychology class was her only 8:00 class, and she is not a morning person. Also, she had missed a number of Monday morning classes because she would go home on the weekends to see her boyfriend and make the two-hour drive on Monday mornings to get back. Sometimes she ran late and missed psychology. She also stayed up late on weeknights with her friends and would wake up at 7:30 or even later, drag herself to class, and not be very alert or focused.

5. **Examine Possible Solutions:** When Markita realized that her problem was the time of the class, she went to discuss the situation with her advisor. Her advisor

told Markita that she would need to try to do better in the class she had because it was too late in the semester to switch to a psychology class at a different time. Markita had thought that might be an easy solution but realized she needed to investigate some others. Her advisor looked over her syllabus to see how her grades were distributed. As of the middle of the term, only 30% of the grade had been determined because she still had two major tests coming and a final. Her advisor thought she still had time to get a better grade.

6. Implement the Best Solution: One of Markita's friends suggested she get a tutor because she still had time to pull the grade up with those three tests. She also talked to her roommate, and her roommate agreed that they would try to get to bed earlier on the nights before her 8:00 class. Since she was getting more sleep, she was able to get up at 7:00, take a shower, and have breakfast before class started. She was refreshed and focused, and instead of rushing in right at 8:00, she would arrive a few minutes earlier and review her notes. Finally, she realized that if she wanted to go home on the weekends, she would have to start coming back on Sunday nights to ensure that she would not miss any more classes. Markita was able to pull her grade up to a B. The next semester she was able to avoid taking any 8:00 classes because she knew that wasn't the best time of day for her.

How can you incorporate Markita's problem-solving strategy to deal with some of the problems you are facing? Remember the steps:

1. Identify the situation.
2. Identify possible problems.
3. Examine possible problems.
4. Identify the key problem.
5. Examine possible solutions.
6. Implement the best solution.

Practice this problem-solving strategy now so that you will be better prepared when you need it. Here are some possible situations you may be dealing with (feel free to work with your own situations as well):

- ▶ You and your roommate are not getting along.
- ▶ Your team is practicing all the time, and you never seem to get anything else done.
- ▶ You have gained ten pounds in the first two months of school, and you feel awful.
- ▶ You are a commuter and can't seem to make any friends because you don't spend a lot of time on campus.
- ▶ You don't think you are cut out for the major you have chosen.
- ▶ You feel like the only adult student on campus, even though you know there are others. You just don't know where to find them or how to find your place on campus.
- ▶ You are feeling homesick and wish you hadn't chosen a college so far from home.
- ▶ English is your second language and you are having difficulty keeping up with the reading and are not doing well in your writing courses.

- ▶ You can't understand your math professor.
- ▶ You keep getting bad grades on your essays.

If one of these situations sounds familiar, apply the problem-solving strategy as you work through the steps below. Or work through them to address a different situation that you are experiencing now.

1. Identify the situation.

2. Identify possible problems.

3. Examine possible problems.

4. Identify the key problem.

5. Examine possible solutions.

6. Implement the best solution.

Reading and Watching the News Critically

Two hundred years ago, when a new president was elected, it took months for most of the country to get the news. Now, for better or worse, news is transmitted instantaneously. We now get the news every day from many different sources: newspapers, news magazines, the Internet, television, radio. With the push of a button or the click of a mouse, we are inundated with more information than we may even care to have. That is why, now more than ever, we have to read and view the news with a critical eye and ear.

There are more sources of news now than ever. That is why you need to be aware of the fact that not every source is objective and that many have a built-in

bias. Here are some things you can do to be sure that you are reading and watching the news critically:

Read from multiple sources. Watch different networks. If you are trying to keep up with world events, for instance, it would be wise not to get all of your information from one network or one newspaper. Doing so might cause you to have only one view of an event or situation. Your task is analogous to that of a police detective investigating a crime scene—a bank robbery that took place at a busy shopping mall. She would not rely on only one witness to get a view of what happened. She would, instead, interview as many witnesses as possible. Witness A and Witness B may have seen different things, but all of their information is pertinent to the detective’s effort to determine what happened. The same thing is true of understanding the news. You need to consult a number of sources before you can feel confident that you know what happened.

Learn the slant of different sources—some are more liberal, some are more conservative. Different sources usually present the news in slightly different ways. Many news sources have a bias of some kind (even if it’s a slight one), but few will openly say so. Having a bias is not necessarily a bad thing, but as a consumer of the news, you must take it upon yourself to be aware that news stories may be spun in a certain way.

Try to understand the bias of the speaker, presenter, or writer. Often, news sources feature people who are leaders in different areas. Sunday morning talk shows, for example, frequently feature leading politicians. Naturally, leading politicians are going to do their utmost to represent their own viewpoints. Newspapers have an op-ed (opposite the editorial) page where writers express their own viewpoints on a subject. Certain writers almost invariably take a particular slant—be it conservative or liberal. Again, as a reader, you need to be aware of the author’s slant. Often, news sources include both “pro” and “con” essays in the editorial section. Read both so you will know what advocates on both sides of an issue think.

Understand the difference between a news article and an editorial. News articles are generally meant to be at least somewhat objective. Editorials, on the other hand, are specifically meant to convey the author’s views on a subject. It’s important that you know where each is placed in a newspaper; you certainly don’t want to mistake an editorial for a news article when you are citing a source.

Don’t automatically assume that statistics are correct. For some reason, statistics have a ring of authority to them. They sound impressive. You may hear, “Three out of five Americans support the president’s view on taxes.” Sounds okay. But what isn’t clear is what the source is. If it’s a Gallup poll, that would be pretty neutral. If it’s a poll commissioned by the president’s party, it may not be so neutral. After all, the president’s own party is unlikely to publicize a poll that is not favorable. Also, you don’t know what the rest of the poll says. For example, three out of five Americans might have said they support the president’s view on taxes if the deficit is taken care of first. What the speaker said originally, in this case, left out some important information.

Pay attention to retractions. News organizations are made up of people, and people make mistakes. Whereas a big story may appear on the front page or at the beginning of a newscast, retractions—where news sources correct mistakes—are often buried inside the paper or right before a commercial break. Obviously, you are not getting the whole story if you miss the retraction.

The most important thing is to pay attention to what's going on in the world outside of your own environment. As we noted before, becoming a well-informed person will make you a better student overall. However, in doing so, be sure to apply what you have learned in this chapter so that you don't take any news source at face value. Be critical as you are becoming informed.

The Role of Speech Communications in Our Lives: Connections and Careers

You probably know that one of the greatest fears people have is the fear of public speaking. Many first-year students share this fear, but during college, when you have the opportunity to hone your skills in the company of your peers, you can become comfortable with and proficient in public speaking. Most of you will have to take a public speaking class, and all of you will have to make at least one presentation sometime during your college career. Look at these experiences as opportunities to grow and to gain the skills you will need to meet new people, find internship opportunities, interview for jobs, travel to places you have never been, date, teach, sell, win an argument, and accomplish your other goals. Communicating effectively through speaking is a part of everyday life, from greeting friends on campus and having productive conversations with your parents or spouse to speaking to a sales clerk about an item you wish to purchase. When you try to make a point in class, you want to be able to communicate as effectively as possible. If you want to have a leadership position in a club or organization that is very important to you, you need to feel comfortable leading discussions and talking in front of a group. If you want to get a job on campus or when you are home for the summer, you want to be able to present yourself in the best light, and doing so will include speaking effectively. With the prevalence of text messaging (and probably most of you text other people—a lot!), honing your speaking skills becomes even more important. Make it a goal to practice becoming a better communicator every day. Doing so will make a difference in every area of your life.

For those of you who enjoy and seek out opportunities to speak in public, for those of you who love talking in large groups or small, and for those of you who love a great debate or love the challenge of persuading someone, there are careers in speech communications that may be right for you. Many people who study communications and have excellent communication skills gravitate toward such careers as public relations, television or radio broadcasting, advertising, sales, and politics. Find out where the opportunities are. You will be surprised at what people with excellent communication skills can do, and where they can go.

Increasing Your Yield

Readings for Practical Application

This chapter has covered various aspects of critical thinking, one of the key skills you need to develop as a college student. You have learned the key differences between facts and opinions, how to recognize and avoid bias and fallacies, how to make effective arguments, how to gather evidence, how to apply critical thinking skills to solving problems in your own life, and how to think critically in a world with ever-increasing outlets for news coverage. You should now understand the importance of being a critical thinker every day and everywhere—not just in the classroom, but in all aspects of your life.

This chapter has also addressed how to use critical thinking skills when you need to make an argument. *In college, you may be called upon, whether in a speech course or in a course in your major, to give a speech to argue a point instead of writing a paper.*

Accordingly, our Textbook Case reading comes from a public speaking textbook. After examining the strategies for reading a speech communications textbook, you can apply them to the selection.

The Life After College reading in this chapter profiles one person's journey to a career developing reality television programming. While many speech communications majors think of careers as television journalists, the same skills they develop through the major can lead to many different television careers. Through this article, you will learn how a career in the media field can take many different twists and turns. It is interesting reading not only for anyone thinking about a career in television, but also for anyone interested in where the shows we watch on television originate.

Reading and Study Tips: Speech Communications

Unique Features and Comprehension Strategies

Unique Feature of Textbooks in Speech Communications

Speech communications textbooks combine theory with how-to strategies.

Speech communications textbooks are generally broken down into major topics related to developing and presenting an effective speech.

Speech communications texts are usually organized to show that giving speeches is a process much like writing.

Strategies for Comprehension

- Read and understand the theory before jumping into its application.
- The organization of your textbook helps you to understand how to organize your own speeches.
- As soon as you learn the concepts, apply them. Speech textbooks are, first and foremost, how-to books.
- You need to have a clear idea of the purpose of your speech, and you need to know your audience.
- You need to narrow your topic, research your topic, and support your ideas in an organized way.
- Look at the examples your textbook provides to help you through the process.

Unique Features and Comprehension Strategies *(continued)*

Unique Feature of Textbooks in Speech Communications

Speech communications textbooks often provide a chapter outline.

Speech communications textbooks use many real-life examples.

Speech communications textbooks often provide a highlighted list of information to enforce ideas presented in the text.

Strategies for Comprehension

- Read the outline first to prepare for what is to come.
- You will see that the order in which the topics are presented is the order in which you will go through the process of writing and delivering your own speech.
- Make your own outlines from chapter material to practice outlining your own speeches.
- Read all the examples to make the concepts seem more accessible.
- Watch out for good speeches made on television or on your campus to determine what makes them effective based on what you learn in class.
- Review any lists carefully.
- You may want to copy them onto note cards for further review.

Reading 1: A Textbook Case

The following excerpt from a textbook chapter is included here because of the connection between ethical speaking and what you learned in this chapter about avoiding bias and gathering credible and thorough supporting evidence. A good critical thinker is able to find and choose evidence to support his or her argument, while also remaining objective about the subject. Chapter 6 covers writing papers in college, and evaluation of your written papers will be of great importance in your college work. Hence, you will often be called upon to formulate an argument in a paper, but you will also be called upon to prepare an argument when you give a speech or some other oral presentation. How you form that argument and present it to an audience should be based on the critical thinking skills you learned in this chapter. When you speak in front of an audience, you have a responsibility to be truthful and thorough. A critical thinker will be an ethical thinker, who will, in turn, be an ethical speaker.

BEFORE YOU READ

Think of several speakers you have heard (in person, on a news show, or in a class) who you think were biased. What made them biased? How did this bias affect your attitude toward them and their speeches? How is the bias displayed in these speeches tied to ethics in public speaking?

Ethical Speaking

G. L. Grice and J. F. Skinner

Maintaining strong ethical attitudes and standards requires sound decision making at every step in the speech making process. In this section we present seven guidelines to help you with these decisions.

Speak Up About Topics You Consider Important

First, ethical public speakers make careful decisions about whether or not to speak. In many public discussions outside of the classroom, silence is often an option, and if the issue is trivial, sometimes it is the best option. There are times, though, when people have an ethical obligation to convey information or when they feel strongly about an issue or an injustice. *Ethical communicators speak up about topics they consider important.* Our nation's history has been shaped by the voices of Thomas Jefferson, Frederick Douglass, Susan B. Anthony, Martin Luther King, Jr., Cesar Chavez, and other advocates. That shaping continues today in the voices of Jesse Jackson, Marion Wright Edelman, Colin Powell, and Elie Wiesel, among many others. You may not have the impact of those famous speakers, but you do have an opportunity to better the communities of which you are a part. This class provides you with an opportunity to share information your classmates can use to help them get more from their college experience or to help them function better in their careers and personal lives. You also have a chance to educate others about problems you feel need to be confronted. We remember one student who showed special sensitivity in addressing a topic she opposed on ethical grounds.

Pam, a sophomore public relations major, had been an animal welfare advocate for a long time, but she knew from class discussions and conversations before class that a number of her classmates hunted for sport or for food. She realized that if she turned her ten-minute persuasive speech into a general sermon against killing animals she would only make a number of her classmates feel defensive. She wanted to speak on some aspect of animal welfare but knew she had to narrow and focus the topic.

As a volunteer worker for several animal protection agencies, Pam had become aware of the problems associated with the use of steel leg-hold traps. Inside city limits, they posed a threat to pets, children and adults who did not know where they had been set. She also opposed their use in the wilderness because, she said, they inflict pain and suffering and kill non-target animals. Pam delivered a well-documented speech to persuade her listeners that the use of these traps should be outlawed. Her carefully worded thesis was not that killing animals is wrong, but that the use of this particular trap is cruel and inhumane. She even discussed two other types of traps as humane alternatives. The class listened intently to Pam, and toward the end of her speech she was gratified to see that many of her classmates, hunters included, were nodding in agreement with her.

Much of your speaking in this class and later in life may not be on significant social or political issues. Yet this class provides you with the training ground to hone your skills as speaker and listener. Use these skills as you move from involvement in class and campus issues to improvement of your community.

A speech is a solemn responsibility. The man who makes a bad thirty-minute speech to 200 people wastes only half an hour of his own time. But he wastes 100 hours of the audience's time—more than four days—which should be a hanging offense.

—Jenkin Lloyd Jones

Choose Topics That Promote Positive Ethical Values

Second, *ethical speakers choose topics that promote ethical values*. Selecting a topic is one of the first ethical choices you will make as a speaker. Unless you are assigned a topic, you can choose from a wide range of subjects. In a real sense, you give your topic credibility simply by selecting it. As an ethical speaker, your choice should reflect what you think is important for your audience.

In the course we teach, many student speeches have expanded our knowledge or moved us to act on significant issues. But consider this list of informative speech topics:

- How to get a fake I.D.
- How to “walk” (avoid paying) a restaurant check
- How to get a faculty parking permit
- How to beat police radar
- How to get out of a speeding ticket

We have heard speeches on each of these topics. Even though they were informative rather than persuasive speeches, each one of these how-to topics implies that its action is acceptable. We do not know why students chose these topics, but we suggest that all of those speakers disregarded their listeners, failed to consider the values they were promoting, and presented unethical speeches.

Speak to Benefit Your Listeners

Third, *ethical public speakers communicate in order to benefit their listeners*. Speakers and listeners participate in a transactional relationship; both should benefit from their participation. As the Jones quotation [above] suggests, listeners give speakers their time; speakers should provide information that is interesting or useful in return.

You may often speak for personal benefit, and this is not necessarily unethical. You may, for instance, speak to a group, urging them to support you for president of the student body. There is nothing wrong with pursuing such personal goals, but ethical speakers do not try to fulfill personal needs at the expense of their listeners. As one popular book on business ethics states, “There is no right way to do a wrong thing.” Speakers whose objective is to persuade, for example, should do so with the goal of benefiting both the audience and themselves. Even informative speakers have an ethical obligation to benefit their audience. Here’s an example of how this can work in your public speaking class.

Assigned to give an informative speech demonstrating a process or procedure, plant lover Evelyn decided to show how to plant a seed in a pot. Her instructor, who had asked students to write down their topic choices, was privately worried that this subject was something everyone already knew about. Evelyn was, after all, speaking to college students who presumably could read the planting instructions on the back of the seed packet. The instructor did not want to discourage Evelyn but wanted the class to benefit from her speech.

Without saying, “You cannot speak on this topic,” the instructor shared her concerns with Evelyn. She found out that Evelyn had several other plant-related topics in mind. Evelyn agreed that a more unusual topic would be more interesting to the class and more challenging for her to deliver. On the day she was assigned to speak, Evelyn presented an interesting speech demonstrating how to propagate tropical plants by “air layering” them. Evelyn got a chance to demonstrate her green thumb, and her classmates learned something most had never heard of before.

Notice how Evelyn finally paid attention to her audience. At her teacher’s suggestion, she rejected the simple, familiar topic that would probably not have taught her audience anything.

Use Truthful, Accurate Supporting Material

Fourth, *ethical speakers use truthful, accurate supporting materials and valid reasoning*. Listeners have a right to know not only the speaker’s ideas but also the materials supporting those claims. Ethical speakers are well informed and should thus test their ideas for validity and support. They should not knowingly use false information or faulty reasoning. Unlike the commercial cartographers we mentioned at the beginning of this chapter [not included here], they should not deliberately include false information in their speeches. Yet we sometimes witness students presenting incomplete or out-of-date material, as in this example:

Janet presented an informative speech on the detection and treatment of breast cancer. Her discussion of the disease’s detection seemed thorough, but when she got to her second point, she said that the only treatments were radical mastectomy, partial mastectomy, radiation therapy, and chemotherapy. She failed to mention lumpectomy, a popular surgical measure often combined with radiation or chemotherapy. Her bibliography revealed that her research stopped with sources published in the early 1990s, explaining the gap in her speech content.

Janet did not necessarily act unethically; she was simply uninformed and ended up being embarrassed. But what if Janet had known of the lumpectomy procedure and had just not wanted to do further research to find out about it? Then we would question her ethics.

In this case, certain listeners did not notice the factual errors and the lapses in content while others did. Not getting caught in a factual or logical error does not free the speaker of ethical responsibility to present complete, factual information. If you speak on a current topic, you need to use the most recent information you can find and try to be as well informed as possible.

Reveal Your True Motives for Speaking

Fifth, *ethical speakers make their intentions clear to the audience*. In other words, they do not intentionally manipulate the audience. Allan Cohen and David Bradford define manipulation as “actions to achieve influence that would be rendered less effective if the target knew your actual intentions.”

We are familiar with one company whose sales strategy matched that definition of manipulation. This company relied on door-to-door salespersons, especially college students, and instructed new employees to make a list of friends who might be interested in purchasing the product. The employees were told to contact these friends and tell them the good news about their new job. The company also coached employees to say that part of the job involved making presentations to potential customers and to ask if they could practice giving their presentation to the friend in order to get some helpful feedback. In addition, because the company wanted to encourage its workers to succeed, employees offered each volunteer “critic” a gift. However, the company also told their salespeople confidentially that the presentations were actually a test to see if they could sell the product, and that they should take advantage of these sales opportunities.

We consider this strategy manipulative and unethical. The salespersons made the appointments under false pretenses. The company exploited its employees’ friendships; the employees in turn exploited their friends’ willingness to be helpful. These helpful critics might not have participated if they [had known] . . . their friends’ real intent. A public speaker may try to inform, convince, persuade, direct, or even anger an audience. Ethical speakers, however, do not deceive their listeners. They are up-front about their intentions, and those intentions include benefiting the audience.

Consider the Consequences of Your Words and Actions

Sixth, *ethical speakers concern themselves with the consequences of their speaking*. Mary Cunningham observed, “Words are sacred things. They are also like hand grenades; handled casually, they tend to go off.” Ethical speakers have a respect for the power of language and the process of communication.

It is difficult to track, let alone to predict, the impact of any one message. Statements you make are interpreted by your immediate audience and may be communicated by those listeners to others. Individuals may form opinions and behaviors because of what you say or what you fail to say. Incorrect information and misinterpretations may have unintended, and potentially harmful, consequences. If you provide an audience with inaccurate information, you may contaminate the quality of their subsequent decisions. If you persuade someone to act in a particular way, you are, in part, responsible for the impact of the person’s new actions.

Strive to Improve Your Public Speaking

Finally, *ethical speakers strive to improve their public speaking*. Speakers who use the guidelines we have presented accept their obligation to communicate responsibly in the communities of which they are a part. Their ideas have value, are logically supported, and do not deceive their listeners. We would argue, however, that this is not enough.

Ethical speakers are concerned not only with what they speak, but also with how they speak. As a result, they work actively to become more effective communicators. This course provides you with an opportunity to begin mastering public speaking. You will learn how to select, support, evaluate, organize, and deliver your ideas. Your professional and public life beyond the classroom will extend your opportunities to speak publicly. Speakers have “the opportunity to learn to speak well, and to be eloquent [advocates of] truth and justice.” If they fail to develop these abilities, they have not fulfilled their “ethical obligation in a free society.”

Responsibilities of an Ethical Speaker

1. Speak up about topics you consider important.
2. Choose topics that promote positive ethical values.
3. Speak to benefit listeners.
4. Use truthful, accurate supporting material and valid reasoning.
5. Let the audience know your true motives for speaking.
6. Consider the consequences of your words and actions.
7. Strive to improve your public speaking.

AFTER YOU READ

What do you think is the most important responsibility you have to an audience when you give a speech? Why?

Reading 2: Life After College

Have you ever wondered how shows make it onto television? Have you ever dreamed about a job creating television shows? How about reality television shows specifically? The article that follows was chosen not only because it deals with a very popular television trend, but also because the ability to communicate, conduct research thoroughly, and sell an idea can lead to some pretty exciting job possibilities. Indeed, these skills are even more important in life outside the classroom than in class. The world of work demands those skills every day. You might decide to put your communication skills to work in television, which can be a realistic possibility if you get your foot in the right door.

BEFORE YOU READ

How do you feel about reality television? What personality traits and skills do you think a person needs in order to break into a career in television?

Text not available due to copyright restrictions

Text not available due to copyright restrictions

AFTER YOU READ

According to David Goldberg, quoted in this article, “People who do well have their finger on the pulse and can come up with 100 ways to do something and craft it into a pitch and get out there and sell it.” While he was referring to reality television, to what other careers can such skills lead people? Why?

Here are some other careers related to speech communications for you to investigate:

- Public relations specialist
- Advertising / marketing specialist
- Broadcast journalist
- Alumni relations representative
- Human resources manager
- Hotel / resort manager

- Pharmaceutical sales representative
- Development officer / fundraiser
- Speech writer
- Special events coordinator
- Theater manager
- Political consultant
- Radio / television announcer
- Media planner
- Sportscaster

And there are many more!

Compounding Your Interest: Further Readings

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6 Writing and Speaking Effectively in College



This chapter will cover the following topics:

- ▶ Understanding the Assignment
- ▶ Brainstorming
- ▶ Narrowing Your Topic for a Paper or Presentation of Realistic Scope
- ▶ What a Thesis Statement Really Should Be
- ▶ Organizing Your Supporting Paragraphs or Points
- ▶ Internet Research
- ▶ Tricks of the Trade: Refining and Delivering the Product
- ▶ Citing Sources
- ▶ MLA and APA Guidelines: What You Need to Get Started
- ▶ Written and Verbal Communication on the Phone and Online: The Do's and Don'ts
- ▶ The Role of English in Our Lives: Connections and Careers

College isn't just studying; at some point, you have to produce. What this means is that although learning itself is a process, your professors will eventually call on you to deliver a product. This requirement could come in the form of a quiz, a test, or an out-of-class assignment. It also could come in the form of a paper or an oral presentation. Most students have experience with these in high school, but many find out it's a whole new story in college because the expectations are greater and the assignments are more open-ended, requiring more independent thinking. Also, the stakes are often higher. With presentations, you're frequently in front of a larger group that you don't know well. Therefore, these kinds of assignments can lead to a lot of anxiety. However, writing papers and making presentations can go much more smoothly if you prepare yourself for these inevitable college experiences. Writing

Think About It



Answer the following questions in the space provided.

What do you like about writing papers and giving speeches? What do you dislike? Why? Be specific. _____

Share your thoughts with classmates in a small group and discuss strategies that helped you.

and presenting are both forms of communication, and the more effectively you learn to communicate, the more successful you will be in all situations that require you to make arguments, discuss your ideas, or present information, whether in class, in small groups, in a discussion with a professor, or before a campus organization in which you may be involved.

One of the building blocks of effective communication skills is good grammar, and you learn to hone your grammar skills in English courses. Therefore, this chapter will focus on the discipline of English, which includes not only grammar but also literature and writing. All college students need to learn to write and speak well. Writing courses help you to put your ideas on paper and to refine those ideas so that you make your points clearly and effectively. You also learn to organize your thoughts and ideas in order to present them orally when necessary. Beyond helping you succeed in all your courses in college, these skills will help you get a job and then keep and excel in that job. Learning to write and speak effectively is important no matter what path you may follow.

FIRST THINGS FIRST

You wouldn't think of replacing your car stereo without first learning how by either reading the directions or talking to someone who knows how to do it. Likewise, when it comes to writing papers or planning oral presentations in college, you need to know a few things before you begin. First of all, the level of expectations for the finished product has changed now that you are in college. What was acceptable before won't make the grade now. Also, to complicate matters, different professors may have different expectations. An A paper for one professor might be a C paper for another because they are simply looking for different things. You need to find out, before you even begin, what your professor wants. Some professors will provide you with written guidelines and sometimes even a grading rubric that explains how points will be distributed. If this is not the case—and it may not be—it is still your responsibility to find out by asking your professor. As far as oral presentations go, you should be sure to get important information such as how much time you have; whether or not you need sources, visuals, or handouts; and, just as for a writing assignment, who your audience is (your fellow class members or an imaginary audience such as the Senate). The information provided in the rest of this chapter will be genuinely helpful only if you fully understand the assignment.

Understanding the Assignment (for a Paper or Presentation)

The Paper

This seems like a no-brainer, doesn't it? In order to get a good grade on a paper, you must fulfill the requirements of the assignment. In other words, you must do what the professor asks you to do. This doesn't mean that you have to *say*

whatever you think your professor wants you to say, but it does mean you have to follow the professor's instructions carefully. Following directions is an important skill, too. You don't need to be mindless about it, but in the future, when your boss asks you to put something together in a specific way, you will be expected to do so. Surprisingly, many students do poorly on papers not because they aren't good writers or don't have good ideas but because they simply haven't met the professor's requirements. Let's look at the following typical mistakes.

Writing too little. If your professor requires six pages, you should write six pages. If you can only manage three, then you clearly haven't put enough time or effort into the assignment. And don't try stretching three pages into six by using 16-point font, bold type, and three-inch margins. Believe it or not, after reading thousands of papers, your professor probably has a pretty good idea of whether you have the required numbers of words and pages. Incidentally, a good rule of thumb is that a typed page has around 250 words. Thus, if your professor asks for 1000 words, your paper should be about four pages long.

Writing too much. Too much? Yes. If you are asked to write five pages and you write ten, chances are your professor will not be pleased. Guess what? You're not the only student in the class. And that class is probably not the only one your professor teaches. Maybe she gave a five-page assignment because she has forty students in your class and two sections of that course, with all of the papers coming in at the same time. Get the picture? She has four hundred pages of student work to read, critique, and grade. If you really think you have to go significantly over what the professor asked for, check with the professor first. Some will authorize the overrun. Others won't. You just need to know in advance. Another issue to consider is whether you are writing too much because you are having trouble making your points clearly and concisely. Learning to get to the point is very important, not least because it is a crucial skill in the workplace.

Not answering the question. This is one of the biggest mistakes students make. They write a decent paper, but it doesn't answer the question the professor has asked. For example, the professor asks for a paper giving five reasons why the United States became involved in World War II, and the student writes a paper about Pearl Harbor. Yes, the student has written a paper about the war, but it doesn't come anywhere near fulfilling the assignment. If you turn in papers like this, your professors may wonder whether you even took the trouble to read the assignment. Or they might even suspect that you just took an old paper from another class, borrowed a paper from a friend, or bought your paper on the Internet. In any case, failing to answer the professor's question is likely to lead to a failing grade. If you're not sure about the assignment, read the requirements in the syllabus or handout more closely, talk it over with a friend, and always ask the professor for clarification (after all, your friend might have it wrong, too).

Not using enough sources. Sometimes, when asked, "How many sources do we need?" a professor will say, "As many as the paper demands." In other words, if you need two sources, use two. If you need ten, use ten. More often than not, though, you will be given a minimum—at least two, at least four, or the like. Be sure to use

that many and then maybe a couple more. We've talked about plagiarism already, so you know that when you use four sources, you must cite four—even if only two were “required.”

Not using the right kinds of sources. With the explosion of the availability of information on the Internet, more and more professors are giving you specifications not only on how many sources to include but also on what types. You may get instructions that say something like, “A minimum of five credible secondary sources. At least two must be from books, at least one from an academic journal, and a maximum of one from the Internet.” Do not fail to follow these guidelines, which are frequently very important to the professor. Professors want you to use different sources so that you will be exposed to all of them. They want you to read articles in academic journals that are meant for a scholarly audience so that you can see how this style differs from that in a popular magazine. Also, be aware that professors often limit Internet sources because students frequently have a hard time (or don't spend enough time) differentiating between credible sources (such as [cnn.com](#) and [msnbc.com](#)) and not-so-credible sources (such as Joe's Edgar Allan Poe Fan Page).

The Presentation

Many of the problems that students have in preparing effective presentations are similar to the problems they have with papers.

What I Know Now

Brett • Meteorology Major with a Communications Minor • Age 21 • Tampa, FL

Brett is a senior about to graduate with a major in meteorology and a minor in communications. “Yeah, people always joke, ‘So you want to be a weatherman?’” Brett laughs. “I had never thought about it before college. I came in as a geology major and then just became interested in weather. I also had a great communications class—just a gen ed class, really—that got me interested in maybe being on TV. So it's a natural combination.” When Brett decided to pursue his interest in becoming a meteorologist for a TV station, he realized he needed to polish his communication and presentation skills. “Doing the weather, people want to see more than just the temperatures; they want to see your personality, too, so they come back to you every night. I was already working for the campus TV station, but I felt I needed more.” A floor meeting in his residence hall gave him another idea. “They said they were looking for campus tour guides. I knew the campus, and I thought it was a job that would be fun and would help me work on my presentation style. I got the job, and it not only helped me with my skills but was also a great way to learn to speak to a different kind of audience. After all, in class you're just talking to other students. But with this, I was talking to potential students, their parents, brothers, sisters, aunts, uncles. A lot of the parents were alums, too, so I really had to know my stuff. What I know now is that it was my experiences with the campus television station and the admissions office that helped me land a great internship. These experiences really helped me improve my communication skills, and I am looking forward to graduating and working in the field.”



The student in this photo is giving an oral presentation to her class. What does she appear to be doing right?

Length. Obviously, if your professor asks for a five-minute presentation, and you run out of material after a minute and thirty seconds (yes, they often time you), you are going to have a problem. Also, if you prepare a speech and never time yourself, you might be surprised to find that you are way over the limit, which is also a problem. And not just for the professor. By exceeding your allotted time, you are also likely to incur the wrath of other students, particularly those who are waiting to “go on.”

Organization. A presentation is not like a rambling conversation. Like a paper, a presentation must have a clear organizational plan behind it. In some ways, it needs to be even better organized, because your listeners generally do not have an outline in front of them, and they cannot flip back to something they didn’t quite get the first time around—as they could

in a paper. So get your act together before you’re in the spotlight. Many professors give sample outlines for a presentation; if they don’t give you one, ask. There’s no worse feeling than being in front of an audience with nothing to say.

Creating interest for the audience. A presentation makes available many opportunities that a paper doesn’t offer you. For instance, you can create a PowerPoint presentation to enhance your spoken content. You can pass out handouts or use other visual aids (posters, pictures, graphs, charts) that clarify your message for the audience. Remember your audience when you’re speaking. Make it clear why they should be interested in what you’re saying. Connect what you are saying with their interests or with things they need to know.

Following the guidelines. Frequently, professors will give you specific guidelines for presentations. Some requirements, such as length and organization, have already been discussed. Always read these guidelines carefully. Do your professors require you to use two visual aids and one handout? Do they require you to refer to authority figures to substantiate your points? Do they expect you to prepare for a question-and-answer session with your classmates? Many students overlook these secondary requirements because they are so focused on the presentation itself.

Brainstorming

Sometimes, in their hurry to get started, students skip the process of brainstorming, thinking they’ll save time, especially when they have other things to get done, such as other projects or family errands. Many students feel that they are making progress

Lifeline



Having trouble with a paper? Most colleges have a writing lab or tutoring center where trained staff are available to help you. They certainly will not write the paper for you, but they can help you get over the hump—whether it's picking a topic, narrowing one, structuring it, or whatever. Be aware that most writing centers are not editing shops set up to proofread your paper. They will expect you to take an active approach to your writing and to use their assistance to learn to become a better writer.

only when they are putting words on the page. This is a big mistake. The truth is that if you fail to take time to think carefully about what you are doing, you could be *adding* a lot of time to your project while hurting your chances of getting a good grade.

Brainstorming is, after all, merely a form of thinking, and it's hard to have any brilliant ideas if you haven't spent time thinking. Also, your first idea is often not your best. In brainstorming, one idea builds upon another. Often, the fourth or fifth—or even tenth—idea is the one that works best, and it may have little or nothing to do with your first idea.

Take a look at this brainstorming session that several students conducted when given the assignment of *identifying a problem and finding what they thought was the best solution*. The requirement was to respond in the form of a short essay and an oral presentation to the class. At first, many students were overwhelmed by the assignment, primarily because they were choosing topics that were far too broad for the scope of a 2- to 3-page paper and a 3-minute presentation. Some of the topics they first considered were:

- ▶ Paying college athletes
- ▶ Guns in schools
- ▶ Swapping music on the Internet: Is it stealing?
- ▶ Euthanasia
- ▶ Use of dietary supplements

The instructor then told the students to “think smaller” by writing about “what they know.” This led to the following topics:

- ▶ Credit card debt
- ▶ Car insurance rates
- ▶ Student loan debt
- ▶ Failing a course
- ▶ Roommate or family problems
- ▶ Poor cafeteria food
- ▶ Overcrowded dorms

Getting these topics (or complaints!) on paper led the students to some more specific topics:

- ▶ From the overcrowded dorm topic, a student decided to write and speak about having two roommates instead of one and why that is a problem.
- ▶ From the same topic, a student wrote and spoke about parking problems near the dorms—and suggested a solution.
- ▶ From the topic of poor cafeteria food, a student decided to write and speak about the problem of there often being few healthy options and to propose a solution for her own campus.
- ▶ From the topic of debt, a student decided to write about the burden of taking out too many college loans and a way to lighten the load by seeking campus employment, instead, to offset college costs.

The list went on and on—and the students began to see that brainstorming plays an important part in the planning of writing and presenting assignments. In the

rush to get done, many students just start writing. These same students often have to stop and begin again after they realize the topic is just too big. Or worse, they turn in an unwieldy paper and get a poor grade for not meeting the requirements of the assignment. On the other hand, many students who don't brainstorm procrastinate because they don't think they can come up with "anything good" to write about. Brainstorming is a procrastinator's best solution. A few bad ideas will eventually give way to a good one. The point is just to put something down. Next time you have a paper or presentation to plan, brainstorm first.

Narrowing Your Topic for a Paper or Presentation of Realistic Scope

Think big. Have you heard that expression before? Our culture promotes the concept of Big-ness. The bigger the better. Super-sized. Biggie fries. Big Red. Big Mac. The Big Gulp. Perhaps bigger is sometimes better, but in college you're going to be far more successful by thinking small, at least where paper and presentation topics are concerned. Far too many students make the mistake of trying to tackle too comprehensive a topic on too small an assignment. A two-page paper explaining the complete works of William Shakespeare. A three-minute presentation describing the causes of the Civil War. Arguing against the death penalty in two paragraphs. The Complete History of Einstein's Theory of Relativity in Five Minutes or Less. Entire books have been written on topics like these! All of these students would have been far better served by narrowing their topics to sizes appropriate for the assignment. Instead of a paper on the complete works of Shakespeare, how about a discussion of Hamlet's relationship with Ophelia? Instead of a talk on the causes of the Civil War, how about a discussion of the Gettysburg Address? After all, part of what you are trying to do in college is to understand things in detail, to get beneath the surface. If you pick topics that are too big for the assignment, you're going to end up merely skimming the surface, generalizing, giving the watered-down encyclopedia version. Furthermore, you're going to find it much harder to write or speak on over-sized topics because you will have to waste a lot of time and energy trying to figure out *how* to water it down. Why do so many students gravitate to bigger topics? There are several reasons.

- ▶ The big topics are more obvious and therefore easier to think of in the first place.
- ▶ Students think they can avoid the challenge of actually learning anything more about the topic if they keep it vague and confine it to superficial things that they already know.
- ▶ They often think they won't have enough to say if the topic is too small.

The Inverted Triangle Method of Narrowing Your Topic

An effective way of concretely taking a large topic and whittling it down to a manageable size is to put your ideas on paper in the form of an inverted triangle, which has its "base" at the top. This larger end of the triangle is your big topic, the one

Teamwork Activity

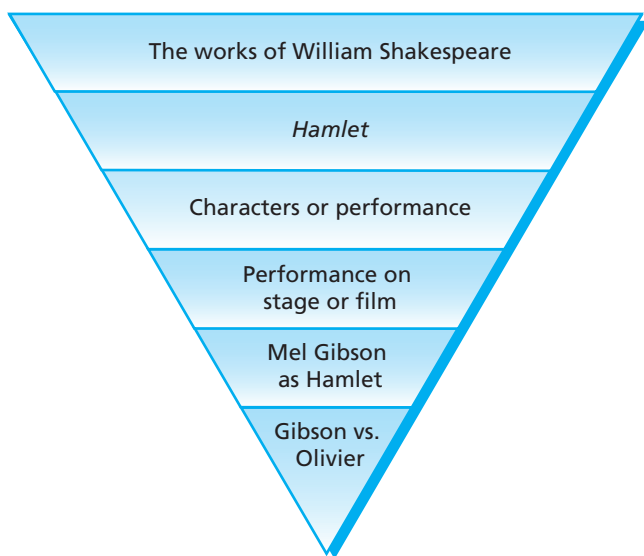
The object of this activity is to practice narrowing topics for papers or presentations. Get together with three or four other students from your class. Take turns choosing a “big” topic (reality television, binge drinking, making more fuel-efficient vehicles). The other students draw an inverted triangle and try to narrow the topic down to manageable size for a paper or presentation.

The person who chose that topic then evaluates how successful the other students were at narrowing it down. If you have a paper or presentation coming up soon, this might be a good way to get some help from your classmates in choosing the topic.

you started out with on the assignment. The middle section breaks it down a little further, separating it into several different aspects of that larger topic. Finally, the point on which the inverted triangle balances, or the smallest part, is the specific aspect that you choose to tackle for the assignment. Start big and work your way down. When you get to the point of the triangle, you should have a topic that is manageable for a short paper or presentation.

Take, for instance, an assignment to write a 3-page paper on any aspect of William Shakespeare’s work. You would *start out* with the complete works of William Shakespeare in the top section of the inverted triangle. It’s a broad topic, so you use the broadest space. From there, you might want to take one specific work that you liked the best—let’s say *Hamlet*. This would go directly below the complete works. Of course, the play *Hamlet* is also too broad a topic for a 3-page paper. So now you ask yourself, “What about *Hamlet* would I like to explore?” Using the brainstorming method discussed earlier, you can think of a number of aspects: characters, setting,

symbols, dialogue, relationships, performance, and so on. Soon you’ve narrowed it to performance on stage or film (which you list as the next entry below on your triangle). Performance includes such categories as staging, history, the play on film, and famous actors. As you ponder these alternatives, you remember being really drawn to the play after seeing Mel Gibson’s performance as Hamlet. Finally, you decide to compare Mel Gibson to Laurence Olivier in the title role. As you begin to outline your thoughts and to write, you may find that you want to narrow your focus even further (comparing, for example, the two actors’ delivery of the soliloquies or the extent to which each introduced comedy into certain passages), but at least you have arrived at a starting point of reasonable scope.





DIY: Do-It-Yourself Activity

If you haven't tried it already, learn how to use PowerPoint or some other type of presentation software. Another student may be able to help you, or you could consult the audiovisual services on your campus. It is fairly easy to learn to use these types of software, and being familiar with them will make you more confident because you will have more tools to draw on in your presentations.

What a Thesis Statement Really Should Be

Just as an umbrella has to cover you in the rain to be effective, a thesis statement has to cover the material in your paper or presentation. In a typical college paper, a thesis statement is one sentence. It is also a statement that needs to be proved. In other words, it's not just a fact, such as "Light travels at 186,000 miles a second." A thesis statement answers a question posed by the assignment. On an essay test, it is usually obvious what the question is because the professor has provided it. But in assigning a paper or presentation for a course, your professor may not ask a specific question. You may receive, instead, only general guidelines from which you need to form a question. When you narrow your topic, you are left with a smaller subject from which you need to form and answer a question. This answer, which becomes your thesis, needs to reveal the subject of the paper or presentation *and* what you are saying about it. (After all, if the thesis were merely a fact, there would be nothing left to say.) What you are saying about the subject of your paper is your *opinion*, one that you need to argue through your supporting paragraphs or points. Keeping these points in mind will enable you to formulate a thesis that will help you organize the rest of the paper.

Begin again with the smallest point of your inverted triangle. What is your narrow topic? What do you want to say about the topic? Look at the topic "Gibson vs. Olivier" in *Hamlet* on film. You have not yet written a thesis. What *about* Gibson vs. Olivier in *Hamlet* on film? If you say simply that "Olivier portrayed Hamlet on film in 1948 and Gibson portrayed Hamlet in 1991," you have written a very poor thesis. This sentence, of course, needs no further discussion. It is simply a matter of fact. If, on the other hand, you say that "Although Olivier and Gibson both credibly portrayed Hamlet, Gibson's version would appeal more to a contemporary audience," you have written an effective thesis. Why? Because it both reveals your subject and says something about the subject. And what you said about it is an opinion that needs to be substantiated through the rest of the paper.

Organizing Your Supporting Paragraphs or Points

If you've ever moved, you know that one of the challenges is organizing all of your possessions. And you know that packing boxes the right way saves you a lot of trouble in the long run. If you label a box "kitchen supplies," for instance, you know that you should put in it only things that belong in the kitchen. You won't



This student is using the Internet to begin research for a final paper in history class. What should this student avoid? What should this student do? What experiences, both positive and negative, have you had using the Internet to do research?

misplace something by packing it in the wrong box, and when you move in, you simply put that box in the kitchen, and you are ready to unpack. Writing an organized essay is a lot like packing boxes. If you plan ahead, separate your ideas into “boxes,” and put sentences in the boxes according to the labels, you will find the job much easier to handle.

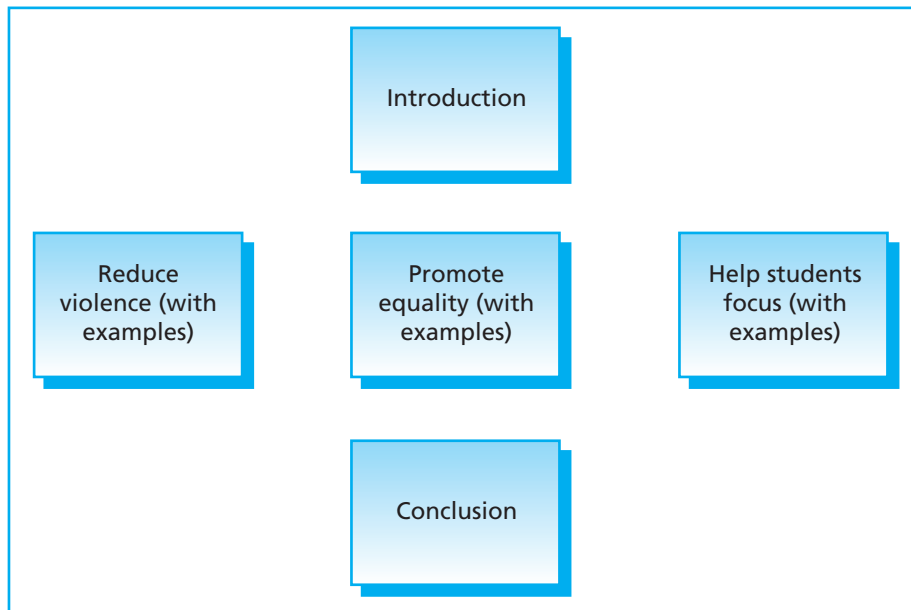
Think of each paragraph in an essay as a box, with each box holding a different idea or concept. Look at the five boxes on page 162, and imagine them as five paragraphs in an organized essay. The first box would be your **introduction**. The middle three would be the **body paragraphs**, in which you explain the points mentioned in your introduction. Finally, the fifth box would be your **conclusion**. Clearly, you might be assigned longer or shorter essays, but we’ll use this as a standard starting point. Thinking in terms of boxes can be very useful because students often have difficulty deciding where points or ideas go in an essay. If you think about putting those points in

separate boxes, you keep your paragraphs focused and avoid letting any of them become long, rambling, or unclear. Also, when you think in terms of boxes, you are free to move the boxes (or paragraphs) around until you get it right. Moreover, if you draw a few boxes before you start to write, you can create a very quick and painless outline to use as a guide. Let’s say you have been assigned to write an argumentative essay advocating uniforms in public schools (sometimes professors ask you to take a certain position whether you agree with it or not—they may want you to demonstrate that you can work on it from any angle). Your thesis statement is “School uniforms reduce violence, promote equality among students, and help students focus on academics.” The thesis statement belongs in the introduction.

The drawing on the next page showing the five boxes illustrates how using boxes to organize your essay writing will help you stay on track. This concept applies to presentations as well. When you put together a presentation, you must stay focused, too. Whether you use index cards or an outline for a speech, the key is to be organized.

Internet Research

If you have just recently graduated from high school, chances are you probably never had to change a typewriter ribbon or make a carbon copy. Even if you don’t have a cell phone, you’ve certainly seen someone using one. Some of you



Time Out Tip



Giving a speech can be nerve-racking.

There's no doubt about it. If you're feeling especially nervous right before a speech, try a technique known as diaphragmatic breathing. You can actually do this while sitting in your seat, and no one will even know you're doing it. Deep breathing sends oxygen to the brain and muscles and can help you relax. Start by sitting up straight with your palms resting on your thighs. Take a few slow breaths deep into your diaphragm (the muscle beneath your lungs that stretches across your torso), and wait a few seconds before releasing it. Doing this for thirty seconds can help you feel much more relaxed and focused.

may never even have gone to a photo shop because you use a digital camera and print out pictures on your computer. Technology has affected nearly every facet of life, and the process of doing research is one of the things that has been profoundly changed through technology. Before you jump right into doing research on the computer, remember that books still exist, and sometimes books are better. Not everything is on the Internet, and it's not always easier to find information on the Internet than in a library. Never discount the idea of just wandering around the library and doing traditional research. When you do decide to use the computer in your research, the following tips will make your research go more smoothly:

- ▶ Go to your college library's homepage to find out what resources are available online. Many research tools are available only to subscribers, and colleges often subscribe in a way that covers all of their students. Some of the subscriber-only features that you may find on your library homepage are search engines such as EbscoHost and Lexis-Nexis. These can provide not only article titles but also, in many cases, full-text versions of these articles that you can print out right from your computer. You can also search by subject area for such fields as premed, education, and literature, among others.
- ▶ For Internet searches, be sure to know how credible your source is. As mentioned earlier in this chapter, some sources are better than others. You need to know who has written the material and must use your critical thinking skills to assess the credibility of the information.

You, as the receiver of information, need to be able to distinguish legitimate sites from sites that may not be providing the most accurate information. Ask yourself questions such as these:

- ▶ Who is the author?
- ▶ With what organization is the author affiliated?
- ▶ Does the source acknowledge any affiliation? Failure to do so is often a sign that the source is shaky.
- ▶ Does the source seem to be independent, or is it supported by outside money that may influence its content? (Much information—but less objectivity—may be offered by a politician’s website, a lobbying group’s website, or a study on the health benefits of eating potatoes that is sponsored by the potato growers association.)
- ▶ Does the site refer to any other authoritative sources for its information?

The bottom line is that there are a lot of sources out there for any subject you could possibly think of researching. The key is to find the best, most reliable sources for your work. If you have any doubt in your mind about whether a source is reliable, check with your professor or with your college’s reference librarian.

Tricks of the Trade: Refining and Delivering the Product

Gathering your information—whether it’s for a research paper or a presentation—is a key part of success, but it’s only the first part. To be truly successful, you need to refine that information into a finished product for your professor.

For papers:

- ▶ Always proofread your work at least twice. This means you should read each word carefully, checking for errors in grammar, punctuation, and spelling. In addition, it is helpful to have someone else look at your paper; after a while, you can miss mistakes just because you’ve looked at the same words over and over.
- ▶ Follow any guidelines given to you by your professor. If he or she wants a cover sheet, put on a cover sheet. And we have already discussed the issue of length. Make sure that you are also aware of any guidelines related to formatting style and that you follow through completely. If you have been asked to use MLA style, use it not only for the citations but also for headers, page numbers, spacing, and margins.
- ▶ Make sure that the ink in your printer is not running low, that your paper isn’t wrinkled, and that you haven’t spilled coffee on it. Appearance is important.

For presentations:

- ▶ Practice. Many students fail to prepare adequately for presentations. The dynamics of speaking in front of an audience can affect you; you must practice thoroughly. Simulate that environment by speaking in front of a couple of friends. You should also speak in front of a mirror or videotape yourself to get an idea of how you look.

- ▶ Just as you'd want your paper to look good, you should dress neatly for a presentation. This doesn't necessarily mean that you must wear a suit (unless you are specifically asked to do so), but don't pull a grungy T-shirt out of the laundry pile, either.
- ▶ Eye contact is important. So are volume and speed. Some students—especially those who are not thoroughly prepared—look at the floor and talk quietly and quickly. Not surprisingly, they don't do well and feel even more nervous the next time out.
- ▶ Visual aids give your presentation a little extra punch. Enhancing your presentation in this way shows that you have put in the time and effort, it appears more polished, and it gives your audience something else to look at during your presentation. (An added benefit is that it can be a relief to know that not everyone's eyes are riveted on you at every moment.)
- ▶ Be prepared on the day of the presentation. Don't forget your material (note cards, overheads, handouts); you don't want to appear as though you don't want to give your speech or as though you aren't ready.

Keeping these things in mind will help you take your papers and presentations one step further. You will have the polish that will separate your work from that of students who didn't put in as much effort. At the end of the day, these hints won't save a paper or presentation that lacks substance (or just isn't very good). But they will help a good paper or presentation shine in the best possible light, and that light will reflect favorably on you.

Citing Sources

When it comes to writing papers or giving presentations, if you use an idea that is not your own, you must always cite the original source. *Always. Always.* It is that simple. Sometimes students think that if they change the wording, they do not have to cite the source. Remember, however, that you are citing the idea. Thus you have a responsibility to make the reader or the audience aware of the fact that you did not come up with the idea yourself. If you keep this basic rule for citing sources in mind, you will avoid plagiarizing in a paper or presentation.

Here are some basic tips for citing sources:

- ▶ When you quote from a source directly, cite that source according to the format you have been told to use (MLA, APA, or the like). (In all cases, when you quote directly you must put the text in quotation marks, except for longer passages that you indent.)
- ▶ When you paraphrase a section of a source, cite it according to the format you have been told to use. Remember that paraphrasing is taking a piece of text and putting it in your own words. If you find yourself writing three or more words in a row that are the exact words used in the original source, you need to go back and either reword your paraphrase or quote directly instead. Furthermore, it's not enough simply to change words to synonyms (as when the author says "larger" and you change it to "bigger"); this, too, is a form of plagiarism. If it's that close, simply quote it.

- ▶ When you cite a source in the body of your paper, remember to include bibliographical information on that source in your “Works Cited” section or on your “References” page. If it is in your paper, it must appear on this page as well.
- ▶ If you have lost track of a source but still want to use the information, do not make up a source. This is another form of plagiarism. Either find the original source again or use a different source.
- ▶ Keep track of page numbers as well. If you quote directly in MLA format, for example, you need to provide the page on which that quote appeared. This is one reason why it is important to keep track of all of your sources and of what information you took from each source.
- ▶ Always cite your sources in accordance with a format you have been told to use. If your professor does not assign a particular format, choose the one you are most familiar with and stick to it. Always be consistent. In the next section, you will find a basic overview of MLA style and APA style—two of the most common formats for writing research papers. Become familiar with these formats. Keep handbooks on hand. Using such a format is not difficult. You just have to resolve to *do* it.

MLA and APA Guidelines: What You Need to Get Started

Different disciplines require different formatting styles. The two styles you are most likely to come across in college are APA (American Psychological Association) style and MLA (Modern Language Association) style. Usually, your professor will specify which format you should use. But if he or she doesn't, here are some general guidelines about which one you should use. In the liberal arts (English, history, philosophy, etc.), you are usually going to use MLA style. In the social sciences (education, sociology, psychology, etc.) and the hard sciences (biology, physics, etc.), you are probably going to use APA. You will frequently cover the basics of these styles in your composition class, but nobody expects you to memorize all of the rules. Most professors don't even know all the rules. What they *do* know, and what *you* need to know, is where to find the information. Most writing handbooks contain a fairly detailed summary of the rules regarding both of these formats. Here are some of the things they will give you:

- ▶ Format for citing sources—including complex rules for Internet sources—both in the text of your paper and in your bibliography at the end.
- ▶ Format for headers, footers, page numbers, cover pages, margins, charts, graphs, photos, and the like.
- ▶ Guidelines for using outside sources properly. An outside source is any source that provides information you did not write or create. For example, outside sources include books, magazines, journal articles, and websites.

As a college student, you would be well advised to keep some kind of writing handbook by your side as you write your papers (in many first-year composition classes,

you will be required to purchase such a handbook as one of your textbooks). If you have particularly detailed questions about formatting, go to the original source:

- ▶ American Psychological Association. (2001). *Publication Manual of the American Psychological Association*. Washington, DC: American Psychological Association.
- ▶ Gibaldi, J. (2003). *MLA Handbook for Writers of Research Papers*. New York: Modern Language Association.

Alternatively, you can consult the respective websites: www.apa.org and www.mla.org.

Written and Verbal Communication on the Phone and Online: The Do's and Don'ts

What do callers hear if they want to leave a message for you on your cell phone? Write your message here:

Is your message one that you would be embarrassed to have a teacher or an employer hear? Does your message reflect how you want the world to see you? Might someone be offended by the message? If you answered “yes” to any of these questions, it may be time to record a new one. Loud music or jokes may seem to be a fun way to communicate with your friends, but you need to remember that your cell phone number will also be used by your professors, by various offices on campus, and by potential employers. Consider the student who had this message on her cell phone: “Leave a message; I’ll call you back if I feel like it.” A professor who is calling a student because she missed class is not going to be amused by such a message. Likewise, the student who plays a minute of loud music before identifying himself is not going to please the person waiting to leave a message. Just as a speech, in-class presentation, or conversation is an opportunity to present yourself in a positive way, so is your cell phone message. If you have any concerns about your current message, it is best to simply provide your name and ask that the caller leave a message.

Similarly, any conversation you have on the phone is an opportunity to present yourself well. If you feel uncomfortable speaking on the phone to people other than your friends, now is a good time to practice. When you call a business, a professor, a campus office, or anyone you may not have met, you should state your name and the reason why you are calling. You also want to think about how you sound when you receive a call. If you grunt into the phone and it turns out that the person was calling to offer you a job, you may not be given another chance to make a good impression. Good phone skills are still important in this age of Facebook, MySpace, and instant messaging. In fact, these skills are even more important to practice because you probably find yourself texting or leaving messages on your social networking site much more often than actually talking to people on the phone.

Speaking of social networking sites, how you present yourself on them also is important to your present and future. While you may think you are communicating only with your friends, other people can see what you have posted. When you send something out into cyberspace, it is there for all to see. A potential employer, for instance, may see your Facebook profile and find photographs not meant for anyone but your closest friends to see. A potential employer may read a posting meant for a select few and be offended by the language. It is important to realize that how you present yourself on your social networking site should reflect who you really are. You should be proud of what your site says about you and be comfortable with other people viewing it. With today's technology, you cannot escape the possibility of your public and private worlds colliding. Remember that your site is a window into who you are.

The Role of English in Our Lives: Connections and Careers

It is hard to separate any endeavor, be it academic, social, professional, or athletic, from the verbal and written word. Your professors call on you in class and you respond; your coach gives you feedback on your swing or your stroke; your friend asks you for advice about where to work during summer vacation; or you write a letter of application for a job you hope to land. If we can't write and speak well, our ability to communicate suffers, and we run the risk of being misunderstood. Learning to write and speak well will benefit you in class and out, with peers and professionals, and in the world of work, no matter what profession you pursue. Beyond the practical application of effective verbal skills, words themselves also hold a special place in many people's hearts. Plays would not exist without playwrights; novels we cannot put down would not exist without novelists; and our favorite songs would be simply melodies without lyricists. Words are as much a necessity as an art. Enjoy and embrace your English classes for the skills they will teach you and the ideas to which you will be exposed, making your own life that much richer.

English not only plays an important part in our lives, it can also lead to a career. While you may associate English with the struggling writer trying to become the next great American novelist, the journalist who lands a dream job at a famous magazine, or a scriptwriter who contributes to a popular television series, the fact is that many other careers exist for those who love the language, who love to write, and who love to communicate with others. This is not to say that you cannot write that best-selling novel or land a job on a popular sitcom, but if you only think of these possibilities, you are shutting yourself out of the much larger world of the spoken and written word. Be informed. Be proactive. Find opportunities that will provide you with hands-on experience. Find out how your favorite English professor became a professor. Find out how you might be able to combine a love of science and a love of writing. What do you know about technical writing? What about writing for websites? In what ways are people who enjoy writing involved in politics or publishing? Words will open many doors. Read, listen, talk, and research. You will soon find many possibilities you never knew existed.

Increasing Your Yield

Readings for Practical Application

This chapter covered what you need to know about writing a paper and giving presentations, two things you do a lot of in college. You have recognized the importance of understanding the assignment you are given before you start to plan and write, you have mastered the art of brainstorming, you have learned how to narrow your topic, and you have discovered what a good thesis statement really is. Once these preparatory steps are taken, it is time to write the paper or prepare the presentation. This chapter covered the organization of your paper into paragraphs, the use of technology to help you write and research better, the tricks of the trade for making a good delivery, and citing sources correctly.

One of the fields of study you will encounter in college is literature. Literature courses require you to do a lot of reading and, in turn, to write about what you have read. Even if you are not or do not plan to be an English major, you may have to take at least one literature course as part of your education. In these courses, as well as in writing courses, you are often required to choose topics from what you read. Reading and writing go hand in hand. Writing, too, is a major part of nearly all other courses you take. You may be asked to write a paper in a history class, you may be asked to write a summary of an article in an accounting class, or you may be asked to write up a lab report in a biology class. The better you feel about writing, the more confidence you will have as you complete these assignments.

Beyond the classes, though, you also engage in writing in your everyday life. You write e-mails to friends. You write to-do lists. You write letters home to your parents or your significant other. You may write letters to the editor of a newspaper. Becoming a skilled writer can also help you indirectly in many facets of your life. Why? Because writing helps you to think and to organize your ideas. And sometimes, the process of writing helps you come up with ideas as you engage in the writing itself. You often write so that you can know and understand. That is why this chapter now turns its attention to the world of writing—in literature, careers, and everyday life.

The Textbook Case reading in this chapter is the only piece of creative writing in the book. That is, the material came entirely from the imagination of the writer. This writer is Kate Chopin, who wrote in the late nineteenth century. In this short story, “The Story of an Hour,” Chopin follows one hour in the life of Mrs. Mallard. What can happen in an hour? Read the story to find out.

If you are contemplating a career as a writer, you can learn a great deal from writers themselves. In the Life After College reading, a well-known author discusses his life as a writer with all its ups and downs. The story of his life is a compelling one, both for the lessons it teaches about perseverance and for the inspiration it provides those who have the same dreams. Both of these readings will give you an opportunity to explore the unique discipline of English, while also expanding on the content of the chapter.

Reading and Study Tips: English

Unique Features and Comprehension Strategies

Unique Feature of Textbooks in English

Strategies for Comprehension

Expect allusions, symbolism, and ambiguity in literature textbooks.

- Literature is open to interpretation.
- You need to learn the vocabulary of literature in order to understand it better.
- Make note cards when you come across new terms in your text (such as *symbolism*, *allusion*, and *irony*).

Literature textbooks are generally organized either by genre or chronologically.

- Read the table of contents carefully to know what approach your textbook takes.
- Your notes should reflect this organization because your tests may reflect it. (For example, you may be asked to put a poem in historical perspective or you may be asked to compare the themes of a poem and short story.)

Literature textbooks are not necessarily linear.

- Use different reading strategies because different types of writing require different strategies.
- For example, you may be able to read a short story quickly, but it may take three readings to understand a poem. A play may be best understood when read aloud.
- Summarize every so often as you read. Annotate—put ideas into your own words to check for comprehension, or make a note to ask a question in class. See Chapter 3 to review how to annotate.

Textbooks that teach writing provide examples of the different forms of writing.

- Read examples not just for understanding of content but for structure. A narrative essay is different, for example, from a comparison/contrast essay.
- View examples as inspiration for your own writing. You learn to write better through reading and writing.

Textbooks that teach writing may also provide grammar instruction.

- Be sure to review examples given to understand the various rules of grammar.
- Understand the “why” and not just the “what.” Look at how rules apply in your own writing.

Reading 1: A Textbook Case

This short story is included here because in a literature class you will be exposed to many different forms of writing, of which one is the short story. The short story may seem the most “comfortable” to read because it is more direct than a poem or play. Poems may have many layers of meaning that may not seem immediately accessible, and plays are generally meant to be performed, not just read. This short story is one you may very well see in an introductory literature course. Even though it was written in the late nineteenth century, it contains

some universal and timeless ideas. As you read this short story, look for the irony and the foreshadowing. Underline the passages in which these elements appear, and write brief notes to yourself in the margin. When you have finished reading the story, summarize what happened in your own words in a brief paragraph.

BEFORE YOU READ

The main character in the story that follows is a woman living in the late nineteenth century. What do you know about women's roles at this time? How has life changed for women between then and now?

The Story of an Hour

K. Chopin

Knowing that Mrs. Mallard was afflicted with heart trouble, great care was taken to break to her as gently as possible the news of her husband's death.

It was her sister Josephine who told her, in broken sentences: veiled hints that revealed in half concealing. Her husband's friend Richards was there, too, near her. It was he who had been in the newspaper office when intelligence of the railroad disaster was received, with Brently Mallard's name leading the list of "killed." He had only taken the time to assure himself of its truth by a second telegram, and had hastened to forestall any less careful, less tender friend in bearing the sad message.

She did not hear the story as many women have heard the same, with a paralyzed inability to accept its significance. She wept at once, with sudden, wild abandonment, in her sister's arms. When the storm of grief had spent itself she went away to her room alone.

There stood, facing the open window, a comfortable, roomy armchair. Into this she sank, pressed down by a physical exhaustion that haunted her body and seemed to reach into her soul.

She could see in the open square before her house the tops of trees that were all aquiver with the new spring life. The delicious breath of rain was in the air. In the street below a peddler was crying his wares. The notes of a distant song which someone was singing reached her faintly, and countless sparrows were twittering in the eaves.

There were patches of blue sky showing here and there through the clouds that had met and piled one above the other in the west facing her window.

She sat with her head thrown back upon the cushion of the chair, quite motionless, except when a sob came up into her throat and shook her, as a child who has cried itself to sleep continues to sob in its dreams.

She was young, with a fair, calm face, whose lines bespoke repression and even a certain strength. But now there was a dull stare in her eyes, whose gaze was fixed away off yonder on one of those patches of blue sky. It was not a glance of reflection, but rather indicated a suspension of intelligent thought.

There was something coming to her and she was waiting for it, fearfully. What was it? She did not know; it was too subtle and elusive to name. But she felt it, creeping out of the sky, reaching toward her through the sounds, the scents, the color that filled the air.

Now her bosom rose and fell tumultuously. She was beginning to recognize this thing that was approaching to possess her, and she was striving to beat it back with her will—as powerless as her two white slender hands would have been.

When she abandoned herself a little whispered word escaped her slightly parted lips. She said it over and over under her breath: “free, free, free!” The vacant stare and the look of terror that had followed it went from her eyes. They stayed keen and bright. Her pulses beat fast, and the coursing blood warmed and relaxed every inch of her body.

She did not stop to ask if it were or were not a monstrous joy that held her. A clear and exalted perception enabled her to dismiss the suggestion as trivial.

She knew that she would weep again when she saw the kind, tender hands folded in death; the face that had never looked save with love upon her, fixed and gray and dead. But she saw beyond the bitter moment a long procession of years to come that would belong to her absolutely. And she opened and spread her arms out to them in welcome.

There would be no one to live for her during those coming years; she would live for herself. There would be no powerful will bending hers in that blind persistence with which men and women believed they have a right to impose a private will upon a fellow-creature. A kind intention or a cruel intention made the act seem no less a crime as she looked upon it in that brief moment of illumination.

And yet she had loved him—sometimes. Often she had not. What did it matter! What could love, the unsolved mystery, count for in the face of this possession of self-assertion which she suddenly recognized as the strongest impulse of her being!

“Free! Body and soul free!” she kept whispering.

Josephine was kneeling before the closed door with her lips to the keyhole, imploring for admission. “Louise, open the door! I beg; open the door—you will make yourself ill. What are you doing, Louise? For heaven’s sake open the door.”

“Go away. I am not making myself ill.” No; she was drinking in the very elixir of life through that open window.

Her fancy was running riot along those days ahead of her. Spring days, and summer days, and all sorts of days that would be her own. She breathed a quick prayer that life might be long. It was only yesterday she had thought with a shudder that life might be long.

She arose at length and opened the door to her sister’s importunities. There was a feverish triumph in her eyes, and she carried herself unwittingly like a goddess of Victory. She clasped her sister’s waist, and together they descended the stairs. Richards stood waiting for them at the bottom.

Someone was opening the front door with a latchkey. It was Brently Mallard who entered, a little travel-stained, composedly carrying his grip-sack and umbrella.

He had been far from the scene of the accident, and did not even know there had been one. He stood amazed at Josephine's piercing cry; at Richards' quick motion to screen him from the view of his wife.

But Richards was too late.

When the doctors came they said she had died of heart disease—of joy that kills.

AFTER YOU READ

What event foreshadowed the ending of the story? Did the ending surprise you?

In small groups, draw a timeline of the story. Identify key events and shifts in emotion. From this timeline, try to write a summary, in the group members' own words, to see whether you understand the story. Write your summary below:

Reading 2: Life After College

Some of you may have thought about the romantic experience of writing the great American novel, while some of you may have thought it next to impossible. The fact is, writing a novel is hard work, but it is also possible, just as it is possible to make a living as a writer in many other ways. You can learn how you can become a good writer and how you can make a career out of writing by listening to the stories of writers who are living the dream. Another thing you can learn is how to make a living out of writing, even if you never become a famous novelist. For those who like to write, Gary Paulsen's story is an important read, but it is also important for anyone who wants to discover how people learn to write well.

BEFORE YOU READ

What do you think makes someone a good writer? What do you think it takes to become a professional writer?

Gary Paulsen's Love Affair with Writing

S. M. Cindrich

A rugged life journey and demanding work ethic fuel his popular books for young adults.

Winds literally strong enough to blow your eyelids open. A cold so deep that matches will not strike. A moose attack. Frostbite. Sleep deprivation so severe it causes hallucinations. While these may seem like the fabricated elements of an exciting adventure novel, all of them actually happened to writer Gary Paulsen, whose personal facts are as fascinating, if not more so, than his fiction.

Paulsen is one of the most prolific and popular writers of young-adult fiction, having published about 150 books for that audience—as well as another 50-some books for other readers. He has received countless awards for his writing, including three of his titles being chosen as Newbery Honor Books, and the American Library Association often puts his titles on its best-books lists. He still receives many letters from young fans wanting to know what comes next.

That, as a matter of fact, is a good question for a man who has twice entered the grueling Alaskan Iditarod dog-sled race, sailed a boat alone from Hawaii to Fiji, and done time as a migrant worker, soldier, field engineer and truck driver.

Paulsen was 26 before he ever thought of becoming a writer, and he was far from an overnight success. “I lived in abject poverty for 23 years,” he explains of his life as a struggling writer. Discouraged by low pay, constant rejection and various disappointments with publishers, Paulsen kept coming back to writing when he found he couldn’t shake his obsession with the craft. “I realized it,” he says, “when I kept writing and wasn’t going to publish. . . doing it just to perform the stories. I had fallen in love with writing. For me, it’s not an occupation.”

But Paulsen is more than just a writer. He is a survivor. He ran away from home at 14 and traveled with a carnival. He escaped abusive parents, alcohol addiction, poverty and a libel suit early in his writing career (which was dismissed)—not to mention those dog-sled races across 1,200 miles of frozen Alaskan tundra. He survived heart problems in 1990 that threatened to put a halt to his mushing days, but not his spirit or tenacious work ethic. Remarking on how his life ordeals have all found their way into his writing, Paulsen says, “I wrote about all of that and it paid off.”

Paulsen wove his firsthand knowledge of outdoor survival skills into the award-winning novel *Hatchet*, the story of a 13-year-old boy’s survival in the Canadian wilderness after a plane crash—which was so believable that *National Geographic* wanted to know the real name of the main character for an interview. In *Dogsong*, Paulsen reveals his deep understanding of the Alaskan outdoors and traditions in the telling story of an Eskimo boy who gets in touch with his culture and learns the art of dog racing.

His nonfiction books are as compelling and adventure-filled as his fiction, many of them first-person accounts and memoirs about his own amazing life experiences. *My Life in Dog Years* describes Paulsen’s unabashed love for the dogs in his life. Many of these dogs have pulled his sled—his dog team even saved his life once by pulling him from frozen waters—and he writes about them in *Winterdance: The Fine Madness of Running the Iditarod*, a frontline chronicle of this great race. These accounts from his personal adventures are blunt, but not gratuitous, in their graphic honesty. In *Guts*, Paulsen describes the real experiences that inspired *Hatchet* and the other books, sprinkled with a sharp-edged sense of humor evident in a funny, yet frank chapter entitled “Eating Eyeballs and Guts or Starving: The Fine Art of Wilderness Nutrition.”

Paulsen, who was advised by a publisher early on not to write for boys because they didn't read as much as girls, may have instinctually realized his niche. Perhaps because his own hardships as a young boy gave him an intense understanding of adolescent trials, Paulsen has often written about acceptance, survival, relationships and life purpose. His backdrop for these themes is his background as a hunter and fisherman, as well as a survivor of early disappointments and teenage struggles.

His passion for running dogs is only slightly surpassed by his love for writing, and he can't seem to give it up. As we spoke in Milwaukee earlier this year, Paulsen, now 65, was in training for the 2005 Alaskan Iditarod and running dogs in northern Minnesota.

In our interview, Paulsen talked about his rugged life and writing journey, and—true to character—used his blunt, raw style to give writers some practical advice.

Did your childhood influence your career as a writer?

I was raised in the woods in a small town in Minnesota. My parents were drunks and I was abused. I couldn't live in the house, so I fostered myself to the woods. Starting when I was 11, I hunted and trapped and fished my whole childhood away. I skipped school mostly and finally graduated with a D-minus from high school. I never thought of writing because I was poor reader.

When I was about 13, a librarian got me into reading books and guided me over the next three or four years while the rest of my life went down the toilet. The first book took me six weeks to read. The next took me five weeks. Then it was two books a month, then a book a week.

I started to think I could have hope through reading. I became exposed to how other people lived through the books. I realized I didn't have to get beat on every single day of my life. I've written about slavery and researched interviews with [former] slaves around 1910–1920s. Many of them felt that if they could read, they could become free. I could identify with that.

When did you know you wanted to write?

I was working in a space tracking station [for a California aerospace firm], surrounded by thousands of switches and dials. It was about 9 at night and I told my friend, "I've got to be a writer." It was overwhelming. You can call it an epiphany, but it was more than that. I have no idea what provoked it.

What is your motivation?

There is no motivation; it's just what I do. It's my nature. The stories are like a river that's going by all the time, and I just "bucket in" and up comes a story. It's a cliché, but it's like that.

There are a lot of things I want to write about because they are astonishing to me, [and] therefore would be astonishing, I think, to readers, too.

Almost three-quarters of your writing is for young adults. How did you know that this is the audience you want to reach?

I think it's artistically fruitless to write for adults [who, he believes, are distracted by adult responsibilities and too narrow in their response to writing]. . . . I realized that there was this entire world of young people, specifically boys, [who] were totally open to new ideas and open to art and concepts that adults aren't open to.

I'm just honest and I don't write down. I write the best I can; it just happens to be marketed to young people.

Do you try to follow any type of writing schedule?

Eighteen hours a day, seven days a week for about 10 years. Writers like me are extinct. People don't do that anymore. They don't study. The dedication, obsession, the compulsion-driven need to be like me is just not done anymore.

I just work. When I'm with the dogs, you run them for four hours on and four hours off. And when they lie down to sleep for the four-hour break, I sit down, build a fire and write. *Hatchet*, *Dogsong*—most of those books I wrote running dogs in dog camps. On the sailboat, you set the steering and

then you have nothing to do for a month or two. I sometimes work 20 hours a day [at writing].

Are you around other people when you write, or is it something you do in solitude?

Solitude, big-time. On the ocean, I was alone mostly, and in the bush, I was with the dogs. You're never really alone when you're with the dogs, but you are from a people standpoint.

Do you enjoy reading what you've written?

No. When I write a story, the hair goes up on my neck. I taste blood. I put bloody skins on my back and dance around the fire and tell what the hunt was like. But after it's done, it's done. You move on.

What do you think is one of the biggest misunderstandings people have about a writing career?

I've actually had a young writer say to me, "I didn't know it would be that much work." A lot of people want to have written. A lot of people want to have run the Iditarod or sailed to Fiji on a boat alone, but very few people actually do it. A lot of people want to have done it. They want to be discovered while they're sitting in a bus depot writing poetry on a napkin, but it doesn't happen that way.

What is your first piece of advice to writers?

You can't learn to write in a workshop. You can't learn in school or through a class. Writing is not going to help you learn to write. Writing is talking, and you can never learn anything when you're talking.

You have to read, and I mean three books a day. Read them all. Reading is the thing that will teach you. Make it an occupation. Read all the time. Literally, two or three books a day. And read them over again. Read some books eight or 10 times.

I've read *Moby Dick* eight or 10 times, and it changes every time you read it. One way, it's a book about whaling. The next way is metaphysics. Or you can look at it as a love story in kind of a sick way. Stein, Pound, Hemingway—if you haven't tried to figure out the rhythms and paces and how that brain of theirs works, you can't start writing.

Once a writer has studied and is ready, what is your advice as far as writing that manuscript and getting it published?

It's really simple. Double-space, 1-inch margins and no errors. You can't have a misspelling. You have to compete with me. If you and I send a manuscript to Random House, they are going to pick me because I'm popular and they can sell a lot of books. That means, right out of the box, you've got to be better than these other guys who've got 200 books published and have won all kinds of awards. You've got to be better than Hemingway or Steinbeck on your first book. On your first book you've got to be that good! It's a hard business. Absolutely brutal.

And it's all you. You don't have a boss or someone telling you what to do. It's all about your own self-discipline. Steinbeck said the hardest thing was getting your ass in back of that typewriter.

The Gary Paulsen file

- ▶ **Gary Paulsen and his wife**, Ruth Wright Paulsen, live in New Mexico. Ruth, an artist, has illustrated several of his picture books, including *The Tortilla Factory*, *Canoe Days* and *Dogteam*.
- ▶ **In 1983, during his first Iditarod dog-sled race**, Paulsen got lost and wound up adding 120 miles to the 1,200-mile race, but he finished 43rd out of 70 contestants. He ran it again in 1985 but did not complete the race. He is planning to participate in the 2005 race.
- ▶ **After his much-praised novel *Hatchet*** was published, Paulsen received so much fan mail wanting to know what would have happened if the main character hadn't been rescued in the end, that he wrote another book, *Brian's Winter*. In it, he described what would have happened if the main character had had to survive the winter.

AFTER YOU READ

What surprises you about Gary Paulsen's story? What can future writers learn from him? What can those who don't want to write professionally but want to be better writers learn?

Here are some other careers related to English for you to investigate:

- Public relations specialist
- Technical writer
- Copywriter
- Newspaper columnist / reporter
- Archivist
- Video scriptwriter
- Editor
- Book critic
- Marketing specialist
- Customer service representative
- Researcher
- Documentation specialist
- Lobbyist
- Literary agent
- Proofreader
- Author

And there are many more!

Compounding Your Interest: Further Readings

American Society of Journalists and Authors

www.asja.org

DeGalan, J., & Lambert, S. (2006). *Great Jobs for English Majors*. 3rd ed. New York: McGraw-Hill.

King, S. (2001). *On Writing: A Memoir of the Craft*. New York: Pocket Books.

Magazine Publishers of America

www.magazine.org

Modern Language Association

www.mla.org

Taylor, A., & Parish, J. R. (2006). *Career Opportunities in Writing*. New York: Checkmark Books.

Welty, E. (1984). *One Writer's Beginnings*. Cambridge, MA: Harvard University Press.

The Write Jobs

www.writerswrite.com

7 Diversifying Your Portfolio of Experiences



In financial terms, a portfolio is a collection of investments. One of the oldest pieces of advice for investing your money is to diversify your assets, which means not putting all your money in one place. You want to spread your investments around to reduce your risk. For instance, if you have all of your money in high tech stocks and the market falls, the value of your entire portfolio will fall. If, however, you have spread your investments among bonds, energy stocks, real estate, and manufacturing, you have a better chance of making some profit or at least not taking a loss. The same is true of making an investment in your future in terms of how you spend your time on campus. Just studying all the time, spending time with the same group of people, or doing the same activity over and over is like putting all your money into one sector. On the other hand, when you invest some time and effort into expanding your activities, you

This chapter will cover the following topics:

- ▶ Gaining Confidence as a Student and as a Person
- ▶ Enhancing Your Academic Life with a Social Life
- ▶ Experiencing Diversity on Your Campus
- ▶ Service Learning / Volunteering
- ▶ The Role of Visual and Performing Arts in Our Lives: Connections and Careers

Think About It



Answer the following questions in the space provided.

What new experiences would you like to have in college and why? List at least three and discuss your answers with your classmates in a small group.

are diversifying your portfolio of experiences. These experiences will yield dividends in your own personal growth. You will become a more interesting person with new knowledge and experiences to apply to other areas of your life, whether you are entering college right out of high school or you already have years of experience in the workplace or with raising children. These new experiences will also help you when you apply for a job or for admission to graduate school. Seeking out new and diverse experiences is just as important as pursuing the knowledge you came to college for in the first place. They both are important; they are just different kinds of investments.

In artistic terms, a portfolio is a collection of works by an artist. Portfolios represent the artist to the rest of the world, just as your own portfolio of experiences will say a lot about you. In college, you will come to learn how to express yourself in new ways, just as artists learn how to express themselves through their art. The connection to creating art and creating who you want to become when you are in college is more than symbolic. The arts themselves, whether you participate in them or come to appreciate them more, help you grow and see the world in new ways. Therefore, the visual and performing arts as unique experiences are also featured in this chapter, in terms of how the arts can enrich your life, what you can learn from the arts, and what careers you can pursue related to the arts.

FIRST THINGS FIRST

In thinking about diversifying your own portfolio of experiences, it is important to think about what your own personal goals are. What do you want to get out of college? Are you focused on preparing for a specific career? Are you focused on earning the grades you need to get into graduate school? Are you in college to explore different possibilities? Are you in college because you didn't know what else to do? Think about this issue. Your honest answers will help you determine what your own portfolio looks like, and creating it will be that much more rewarding.

Gaining Confidence as a Student and as a Person

College is a time of opportunity. A time to gain confidence in yourself as a student and as a person, an individual with strengths and weaknesses, with talents and knowledge to apply to problems, jobs, and everyday life.

Confidence comes from taking responsibility for your own life. When you take responsibility for yourself, you discover that you can handle obstacles and learn from them. You may already have encountered learning opportunities in your own social life in college, in taking care of your health, and in meeting new people. No one can give you confidence. You have to go out and gain it yourself, and, in so doing, you will diversify your own portfolio of experiences and interests.

Lifeline



If you are interested in a career that requires travel, skills in another language, or an appreciation for other cultures (such as international business or teaching), consider spending a semester abroad. Most campuses offer programs in which a student, for about the same tuition, can enroll in a university in another country. This is a great way to immerse yourself in another language, gain a new perspective on the world, and become more independent. To find out more about such programs, you can begin with your advisor or you can visit your campus office of international programs.



DIY: Do-It-Yourself Activity

In the space below, answer the question, “What do I want to get out of college?”

To answer this question, set three goals for yourself (for example, I want to get accepted into medical school, I want to meet many new people, or I want to be a chemical engineer with a company overseas).

Goal #1 _____

Goal #2 _____

Goal #3 _____

Now, think of some ways you might start working toward these goals or who might be able to help you do so:

Share your answers with classmates in a small group and get some suggestions from each other.

Here are some suggestions for gaining confidence as a student and as a person while in college:

Challenge yourself. What are you afraid of? What do you wish you could do that you can’t do right now? Think about it, and then think about how you can overcome the fear or learn to do something that seems almost impossible right now. But don’t try to confront the whole problem all at once; rather, break it down into manageable pieces. Let’s say you are afraid of speaking in front of people. You wouldn’t decide to overcome your fear by being a speaker at your college’s graduation, in front of hundreds or thousands of people. Instead, you can begin small. First, try to answer questions in class if you didn’t do much of that in high school. Little by little, you will see it is not so bad to be the focus of attention in class. You may also think about joining the debate club or becoming an officer in a club that interests you. You will learn to speak in front of people in a smaller group setting, and you will get a lot of practice doing it.

Meet new people. College is one of the best times in your life to meet new people. Try to meet as many new people as you can. Of course, that is not the same as being friends with all of them. Gaining confidence in meeting new people will help you when you interview for jobs and when you start out as the new person at a company right out of college. One of the things you want to do in college that is different from what you may have experienced before is to meet people of different age groups, different ethnic groups, different religions, and different backgrounds or ways of life. Why? Because in the work world, you will be expected to interact with people from all backgrounds. Also, you can enrich your own life by opening yourself up to the experiences of others. But just how can you meet new people?



Are you curious about what the people in this photo are doing? What do you think they are doing? If you saw this happening on your campus, would you go and watch? What might you say to the people involved? What questions might you ask? Think about what you might be willing to open your mind to on your own campus. (Write your thoughts in the following space.)

Walk around your residence hall and introduce yourself, participate in social events sponsored by your residence hall, sit next to someone in class and strike up a conversation, join something!

- ▶ Try to meet and really get to know people outside your age group. Look around at the other students in your classes. You will see that many of them are older or younger than you. Get to know them. Learn about where they have come from and why they are here. Another good place to start is with your professors. Some students are afraid to talk to their professors outside of class. However, most professors are very approachable. You may see them in a different light when talking to them in their offices or interacting with them in a student organization. Besides helping you get better grades (because your professors know you and know you care), you will also learn how to interact with people in authority. This will prepare you for job interviews and for feeling comfortable in a job where you must work with or interact with people on all levels of the organization.
- ▶ Be open to meeting people from different backgrounds, ethnic groups, and religious affiliations. It is natural for people to gravitate to other people with similar backgrounds. However, remember that gaining confidence isn't about doing what is comfortable; it is about doing something new or difficult. Seek out opportunities to become a part of cultural activities that celebrate diversity: dinners, musical events, movies, festivals. You will not only meet new people, but you will also learn about new cultures—and a little bit more about yourself.

Be curious. In college, you should open your mind to new experiences, new points of view, and new ways of examining the world around you. If you are not curious, you end up doing the same things over and over. Then, when it comes time to do something new, you may lack the confidence to do it. For example, if you heard there was a sitar concert on campus, would you go? Do you know what a sitar is? Curiosity is a great confidence booster. Curious people reach out. They ask questions. They challenge assumptions. They look at something old in a new way. These activities generate a sort of mental energy that translates into confidence because you see what you can do—and you are doing many things! You also see that you can deal with problems that come along because you are more alert and are accustomed to seeking out new solutions.

- ▶ Care about the political process. Start small and become involved in the student government organization on campus. Read. Watch the news and listen to debates. Learn as much as you can about any elections going on when you are in college. Volunteer to work on a local or national election campaign. Be aware of the issues. Argue them with friends and faculty. Think for yourself. Vote.
- ▶ Read the local paper. Learn as much as you can about the community that is home to your college or university, and, in turn, your new home as well. This

goes for reading the college paper also. Be involved with what is happening on and off your campus.

- ▶ Ask questions in class.
- ▶ Try some foods that are completely new to you. You never know when you will be able to talk about these food experiences. And you never know whom you will meet while trying these new foods. Think raw fish sounds disgusting? Try some sushi. You might like it. Or maybe you will like latkes better. Don't know what latkes are? Go find out.
- ▶ Learn to play a musical instrument or figure out what golf or lacrosse is all about.

Take courses to explore new interests. Every major has specific requirements when it comes to which courses you must take. But there is room in almost every degree program for some “free” electives. Take advantage of this. Pick a course not because you have to take it but because you want to take it. It will be a whole new learning experience. Maybe your grandmother speaks German and grew up in Germany. You may want to visit some day. Learn the language. Perhaps you have always been a movie buff. Take a course in film appreciation and learn about the way movies are made and the different periods in which they have been made. Learn the language of film and how to talk about movies. Who knows, you may end up with a new major or minor that evolved out of a course that you took “just for fun.” You will gain confidence from knowing that you can learn new things. And as you become a “specialist” of sorts in a new area, you will become a better conversationalist.

Travel. Your college years may be one of the best times to travel. Even if you don't have a lot of money, there are many opportunities for budget travel with campus groups. Start out simple. Student activities offices often sponsor cheap or free trips to local attractions such as ball games, amusement parks, and museums. If you network well, you might be selected to represent your college at an event in another state or even another country. Studying abroad is a great way to combine travel with academic credits. And it is a lot less expensive to travel to a foreign country as a student than as a tourist. Students stay in dorms and pay the usual student fees. Many side trips are also included in the fees. Traveling is one of the best ways to get a new perspective on your world. Also, being exposed to new people and environments, and having to learn how to acclimate yourself, is a great way to gain confidence.

Meet the goals you set. There is nothing more satisfying than accomplishing what you resolved to do. Set reasonable goals and work at them bit by bit. When you have reached them, you will have a sense of satisfaction that will give you more confidence to set and achieve other goals in college and beyond. For example, say that after a rough first year, you start to get your footing academically. You decide to try to make the Dean's List the second semester of sophomore year. Naturally, if you achieve this goal, you are going to feel especially good because you will know how far you have come. Having the goal will help motivate you during the tough times in the semester. Even if you don't achieve the goal the first

Time Out Tip



If you are worried about doing too much or too little at college, talk to an upper class student in your major, a student who has survived the first year of college. Upper class students can tell you the truth about what is good to be involved in and what is a waste of time. They can also tell you how much work to expect in certain courses to help you properly balance your time and budget the time needed for difficult classes. There are many out there who have lived through what you are going through, and they will be happy to tell their stories!

semester out, if you have been working at it, you are getting closer, and you may do it next time.

Putting some of these suggestions into practice will help you build your confidence. And even if you're brimming with confidence already, you will still benefit by opening yourself up to new experiences. Take some chances in college. That's what the whole experience is about.

Enhancing Your Academic Life with a Social Life

Focusing on the two major areas of your college experience, your social life and your academic life, will help you create a valuable portfolio with which to enter the next phase of your life after college. While doing well academically is extremely important, you should be sure to also place value on the social opportunities you will have in order to keep your college experience a positive one.

The meaning of academic life is probably clear to you by now, but what does having a social life really mean in college? Different people might answer that question differently, but a healthy social life typically includes such areas as the following:

- ▶ **Personal growth.** The person you are right now as you start college is not the person you will be when you graduate. The experiences that you are having and will have are shaping who you are. They are changing you, and they will make you a different person. Even though your life right now may seem consumed by assignments, tests, and deadlines, college is also a wonderful time to grow in ways that only experience outside the classroom can provide. Personal growth is not something you're likely to be conscious of on a daily basis, but there are things you can do to foster it. For instance, college libraries tend to have wonderful collections of nonacademic reading materials, such as current novels and nonfiction books. Take advantage of this access to such a wealth of reading materials in areas that interest you. Reading for pleasure can improve your ability to read your college textbooks. Similarly, while at the library, you may pick up a DVD of a film you wouldn't normally see at the multiplex. You could also take the opportunity to try something different, such as a pottery class, downhill skiing, or cooking.
- ▶ **Free time.** A healthy social life includes time just to unwind. Sometimes it's good to do nothing: Walk around town, stop in on friends, have a cappuccino at the coffee shop, hang out and daydream. The energy you restore during those times can help you out when things get hectic. If the only way to be sure you have free time is to schedule it on your calendar, do it.
- ▶ **Family time.** Don't neglect your family! They can be a great source of support, and spending some of your free time with your family can be a very worthwhile break from the stresses and strains of college. If you are an adult student with a family at home, share your experiences with them. Ask them for help when needed. Don't worry about cleaning. It will always be there.

- ▶ **Friendships.** Don't neglect your friends, either. Friends you've made in college, as well as those you had before you entered college, are an important part of your social life. Keep in touch via e-mail or occasional phone calls. Make time to have lunch or dinner together.
- ▶ **Hobbies.** A good hobby can be a great stress reliever. If you brought a talent with you to college, develop it. Or you can develop a new hobby that could be a source of satisfaction throughout your life. A hobby can also lead to an exciting career.

Remember what you learned in Chapter 2 about managing your time. Coming up with a good time management plan is as good a place to start as any when trying to achieve a healthy and rewarding balance of academics and social activities in your college life. You should look first at how much time you will need for your courses—the time in classes, the time allotted for studying, the time for long-term

Teamwork Activity

Work in groups of three or four students each. Have each team member identify a characteristic about himself or herself that has sometimes been stereotyped (for example, blond hair, football player, art major) and how that stereotype may have developed. Complete the following chart as you discuss the stereotypes with your group.

Characteristic	Stereotype	Possible Source of Stereotype

Now, identify ways in which these stereotypes could be challenged and eliminated on campus.

Each group can then make a brief presentation to the class.

projects and papers. Then you have to consider the hours you may need for a job. What you have left (after eating and sleeping) are the hours you can give to a social life.

And a social life may be just as important as your academic life in making your college experience enjoyable and meaningful. For one thing, the personal connections you make and the people you get to know may be as crucial to your success in the future as what you learn in your classes. Even more important, the friends you make in college may be the best friends you will ever have, and some may be your friends for the rest of your life. Friends help friends find jobs. Some friends stick with you after college when you want to move to a new city or try a new experience. You also learn new things about yourself when making new friends. Likewise, when the going gets tough, and it does sometimes in college, having friends helps you in countless ways. Thus taking the time to make friends in college is definitely a worthwhile investment!

Just be careful where you make your investment. It is no secret that some people come to college just to have fun and don't really even imagine actually graduating. Likewise, many students arrive with emotional baggage or get into trouble during college and unknowingly pull others down with them. For more advice on relationships, see the Student Website.

Experiencing Diversity on Your Campus

Wan-Chen, an international student from Taiwan, was speaking in Mandarin with her friend from home, Han-Li, in the cafeteria. They were discussing the picnic they attended the previous Saturday. As they were talking, they noticed a couple of American students listening in on their conversation from the table next to them. Suddenly, the guy on the right stood up and said, "Why don't you learn to speak in English? If you can't, you should just go back to your own country!"

Laurie and Felicia were sitting together on a bench outside the science building talking about the notes that Felicia missed the class before. Laurie joked to Felicia that her short, spiky hair was getting too long. As they got up to leave, two guys walked out of the building laughing, and one of them looked at Felicia and shouted, "Dyke!"

Sue and Jordan were walking home from a party one night downtown and noticed a group of black students up ahead. Sue recognized Darren in the group. He was in her biology class, and she had often heard him talk to other guys about a gang from his town. Before the group could get any closer, Sue said to Jordan, "Let's cross to the other side of the street."

By definition, diversity is the quality of being different or an aspect in which things differ. When you leave college, the so-called real world will be filled with differences: different people, different religions, different jobs, different bosses, different environments. But just what do you think of when you hear the word *diversity*? Race? Religion? Both are part of it, but they are by no means the whole story. And not knowing the whole story often leads to blind acceptance of stereotypes.

In the investment world, people are often swayed by “hot tips,” which may be no more than someone inflating the potential profit of buying a stock or other investment. An investor may invest, thinking he or she will otherwise miss out on a golden opportunity, when in fact that “opportunity” could be a major pitfall. Without research, the investor really doesn’t know whether the hot tip is a legitimate investment opportunity or a rumor. Stereotypes too are dangerous because they keep the individual from gaining information beyond what appears on the surface. Diversity encompasses all differences among people, places, and things. Race and religion appear on the list that follows, but so do some other items that you might not have thought of as aspects of diversity:

Race: Latino/a, Asian, Arabic, Native American, Caucasian, African American, Indian, and many combinations thereof. Race is a key identifier because it affects not only our background but also the way we look and how others perceive us. According to *The Chronicle of Higher Education*, 30.4% of students enrolled in college during the 2006–2007 academic year were nonwhite.

Religion: Judaism, Islam, Christianity, Buddhism, Hinduism, to name just a few. Chances are you will meet many students whose religious backgrounds are different from your own. You will probably also encounter students who are atheists or agnostics and students who are still searching for a religion to call their own. Perhaps that description fits you. College is a time of exploration for many students. Be a friend’s guest when he or she attends a religious service. Ask questions. Talk about each other’s beliefs. Be open to and respectful of the religious convictions of others, and you will gain a valuable learning experience.

Culture: Another key identifier is culture. Two people of the same race could have significant differences in their culture: foods, religion, social customs, and the like. Even though cultures stem in many ways from geographic locations, there are also many situations in which different cultures exist very close to one another.

Gender: Males and females certainly have their differences. Often, one group believes that the other group cannot do something (women aren’t strong enough, men aren’t sensitive enough) and ascribes that stereotype to *every* member of the opposite sex. But people who think primarily in terms of gender, instead of looking at members of the opposite sex as individuals, may have trouble working together in a classroom or work situation in which males and females are on equal footing.

Sexual orientation: Lesbians, heterosexuals, gays, bisexuals, transsexuals. Sexual orientation is not always readily apparent, and rumors about individuals may circulate without any factual basis. Sometimes, people are afraid of others who identify themselves as having a different sexual orientation than their own. Differences in sexual orientation can be the source of intense prejudice and even discrimination that is often based on fear and lack of knowledge.

Socioeconomic class: Money. One student may be taking the bus from home every Sunday and get off at the same time another student is pulling up in the Mercedes her father gave her when she graduated from high school. College affords an opportunity to see much variation in income, from the student whose

entire education is being paid for by his family, to the student on a full scholarship, to the student going to school part-time while working in a sandwich shop to make ends meet. Negative attitudes toward people of different income levels may arise, partly out of a lack of understanding of what others' experiences have been. But, of course, it is often more than money. A student may be in college because his father sits on the board or his grandmother endowed a scholarship. Those who know this may have preconceived notions about the student, just as they may have preconceived notions about a student who won a scholarship to play football.

Disabilities (physical, learning, mental): It is often difficult for students without disabilities to place themselves in the position of those with disabilities. Sometimes it is easier not to help. Sometimes they just don't know how. Likewise, students with disabilities may feel alienated because of their need for special accommodations, or they may feel uncomfortable having to ask for such accommodations for fear that they will be singled out or not seen as earning a grade on their own merit. A student with an unseen disability with implications beyond the classroom, such as depression, can be misunderstood by peers and professors. Many more disabilities exist, and many more people cope with them every day than most college students realize.

Age: Age? That's right—age. One thing that surprises a lot of students who come to college right out of high school is that they are suddenly in class with people of all different age groups. What may surprise adults who are returning to college after raising children or being in the work force is how other students react to them or how “out of touch” they may feel with what is going on in their fellow students' lives. In nearly all public, private, and preparatory elementary and secondary schools, students are divided into classes by age. In college, it's a different story. It may surprise some students to hear that 37% of college students are 25 or older, according to *The Chronicle of Higher Education*. A 19-year-old sophomore could be sitting next to a 30-year-old accountant who has returned to school to take an extra class for work. The 30-year-old accountant might be sitting next to a grandmother who has returned to school to finish a degree program that she had quit decades ago to have her children. In addition to dealing with students of different ages, college students have to learn to work with professors and staff members on a different basis. College students are adults, and those who work with them treat them as adults and expect to be treated with respect as well. Also, you have to learn to work with professors and staff members in a more professional way—college is training you to be a member of the community on a more egalitarian basis than in high school.

Environment (rural/suburban/urban): Even in a relatively small area, you can see major differences in environment. Within a hundred miles, you could go from some of the largest urban centers, through the suburbs, to farm country and wilderness. Naturally, such disparate environments evoke different responses, especially if the environment is different from the one in which a person grew

up. For example, a student from a small rural community may fear life in a large city. A student from the city may think that there is “nothing to do” on a small suburban campus.

Types of music: Although you may not think of it in this way, music is a particularly potent form of identification for many college students. Heavy metal. Rap. Pop. Country. Rock. Folk. Classical. Alternative. For many students, there is a way of life, including clothes, slang, and hairstyles, associated with each type of music. And many students dislike other types of music as much as they enjoy their favorite variety. Unfortunately, students are sometimes unfairly pigeonholed on the basis of the music they listen to the most. For instance, some may say that heavy metal fans are “into Satan,” or that country fans are “all hicks.” Some may say that those who listen to emo music are “depressed,” while those who listen to punk are “mad at the world.” Students with little knowledge of a certain type of music may buy into stereotypes rather than really learning what it is all about. Learn about and be open to different types of music.

Major: A student’s choice of major may also lead other students to label him or her. An engineering major may be seen as “smarter” than a student majoring in sports management. An art major may be seen as a nonconformist. A business student may be perceived as only into money, whereas the student majoring in classical literature is seen as having no grasp on reality beyond the “ivory tower.” These labels persist because they have been around longer than the students themselves. They imply that the major itself defines the whole person, when in reality, any student can have many more interests outside of those that are related to his or her major.

Hobbies/clubs: Even though campus hobbies and clubs are very positive, they can be perceived by others in negative ways. For example, those who don’t play chess and don’t know much about it may assume that every student who is in the Chess Club is a geeky math major with little in the way of a social life. Never mind that several of the Chess Club members are also on the lacrosse team and are attracted to chess because of its unique competitive nature. The chess-playing student may also like the diversity of others in the club.

Personality types: There are almost as many personalities as there are people, but there are some general categories that you may encounter. It is important to remember that even such general traits do not define the whole person. For example, just because someone is an introvert does not mean he or she does not want to socialize. It may just mean that he or she prefers to be alone some of the time but can enjoy company or a party with good friends as much as the next person. An extrovert may feel more comfortable meeting new people or being in a room with many people, but this doesn’t mean he or she does not need to be alone or to be serious some of the time, instead of always being the center of the fun. Sometimes conflicts arise between opposite personality types because one or both of the people find it hard to understand how the other person thinks or feels.

Cliques (“jocks,” “preps,” “geeks,” “skaters,” “goths,” etc.): When you were in high school, you may have seen or been a part of a clique, which really is a group of people who are pretty much the same. The problem with cliques is

not only that they leave people out, but also that those on the inside are often prevented from learning about a lot of other people. Cliques tend to label people strictly in terms of one quality (jocks are only into sports or geeks are only into computers), when people are a lot more three-dimensional than that. Cliques are less obvious on a college campus, in part because students are more mature and the campus is a much larger environment. However, it is still easy to fall into groups of people who are very similar—on the same team, in the same major or fraternity, or with the same taste in music. It is not bad to have friends who are similar to you, but think about adding some diversity too.

Body types: Often too much emphasis is placed on outward appearances. There is really no denying that. Thanks to the images of the “perfect” man and woman promulgated in the media and popular culture, college students are under a lot of pressure to live up to those images. This kind of pressure can have many negative consequences, such as eating disorders and steroid use, and it can also result in negative attitudes toward those who do not live up to the ideals. Furthermore, a negative self-image can lead to a lack of confidence, which in turn may discourage others from getting to know the individual who falls short of society’s artificial standards.

Food preferences: Maybe you didn’t expect to see this item in a section about diversity. If you went to a high school that was not very diverse, most people probably ate pretty much the same way you did. In college, however, you are likely to encounter foods you have never seen before because you will meet people from many different backgrounds, religions, and cultures. You may meet some students who have chosen a vegetarian lifestyle. Sometimes both vegetarians and meat-eaters can “get in each other’s faces” about what they are eating or not eating before even talking about the choices they have made and why. If you have never seen anyone eat dried squid before, for example, you may want to turn away. But it might be more interesting to ask the person about it and maybe give it a try.

Difference doesn’t mean that we don’t have things in common. And it certainly doesn’t mean that the differences are the most important things about us. But it is important to acknowledge differences so that we can discover what is similar about us. Doing so can eliminate preconceptions that keep us from really getting to know each other and can encourage us to find out what we have in common and to appreciate our differences.

Why is a college campus an especially good place to experience diversity? One reason is that you often start with a clean slate in college. You may be the only student from your high school at your college, or you may be one of only a few from the same high school who chose to go to your large university. The clique you might have been in doesn’t exist anymore, so you have a chance to get to know people very different from the people you knew before. Also, colleges and universities tend to be a microcosm of the world around them, with students from widely disparate backgrounds—from different parts of the country and from all over the world. Your professors have specialized in different disciplines and have

had all kinds of experiences before coming to work at the college. In high school, most students were more or less the same age in each grade, whereas in college you will have students in your classes from all kinds of age groups.

What are some of the best ways to invest your time in diverse experiences? Here are some suggestions:

- ▶ Attend a multicultural banquet.
- ▶ Attend musical events, dances, and plays that celebrate other cultures, and attend events traditionally associated with your own culture to see how others react.
- ▶ Take multicultural courses such as African literature, Asian art, women in history, Islamic religious history, Greek mythology, any foreign language, and international studies.
- ▶ See a foreign film with subtitles.
- ▶ Join a committee to plan a multicultural event.
- ▶ Volunteer to be a reader or note-taker for a student with a disability.
- ▶ Volunteer for Special Olympics.
- ▶ Be a volunteer to help international students get acclimated to the campus and community.
- ▶ Volunteer for Habitat for Humanity.

What I Know Now

Maya • Elementary Education Major • Age 19 • Lewisburg, PA

Maya enrolled in a state university about an hour from her home, partly because of the reasonable cost, but also because many of her high school friends enrolled there. “I was not as afraid to go to college back in August because my roommate was my friend from high school, and she had a car, so we knew we would be able to come home every weekend,” said Maya. This seemed like a great idea at the beginning of her first year, but by April she felt very disconnected from the campus and was thinking about dropping out. She went to see her advisor and explained her problem: “I didn’t make any new friends here this year, and my roommate and I are not going to live together next year. I did not get involved in any social activities because I went home every weekend. I feel like I don’t belong here.” Maya’s advisor encouraged her to consider ways to improve her situation without leaving school. One of his suggestions was that she stay on campus in the summer to work in the orientation program for new students. She was worried that she would be homesick but decided to give it a try. By the end of the summer, she realized that she did not have to go home every weekend, and she had made some new friends. In fact, some of the people she met over the summer helped her get involved with another program: America Reads. Now in her sophomore year, she spends a few hours a week tutoring students at a nearby elementary school. “As a future teacher, I know now that I shouldn’t have shut myself off from my new environment,” Maya said. She would tell any new student to get involved in at least one activity during freshman year, not just for a social life, but also to really get connected to campus. Maya concluded, “You can’t do well in school when you don’t feel like you are even a part of it.”

- ▶ Volunteer at a local nursing home.
- ▶ Eat at a restaurant that offers a cuisine you have never tried before.
- ▶ Read a major Sunday newspaper every week. Be sure to read sections that you don't normally read, such as world news, book reviews, or editorials.
- ▶ Join a multicultural organization on campus.
- ▶ Read and learn about the history of your own campus and the community in which it is located.
- ▶ Go to lectures or listen to guest speakers on topics such as gay/lesbian issues, disability law, affirmative action, and various cultures.

Being a college student means you have access (and much of it is free access!) to more cultural and educational activities than you will ever have again. It is up to you to take advantage of these opportunities. Remember that being educated goes beyond the classroom. It includes combating stereotypes, meeting new people, and learning about unfamiliar places and customs. College gives you a rare opportunity to open yourself up to diversity. It is one investment worth making.

Service Learning / Volunteering

Another way to become involved with the rich diversity of your campus and surrounding community is to volunteer. You may feel that you're so busy sometimes in college that you think, "How can I afford to volunteer?" A better question might be "Can I afford not to volunteer?" As a college student, you will have opportunities to get involved in many activities, but one of the most valuable to you may be becoming a volunteer. How is it valuable? One of your goals in college is to tap into different interests and explore different opportunities in your community, while building up your résumé. But volunteering adds another dimension to the picture you present of yourself to a potential employer or graduate school. Volunteering can show a true commitment to your field. For example, a potential teacher who has volunteered for Big Brother/Big Sister or for America Reads shows that he or she doesn't see teaching just as a paycheck but also as an opportunity to make a difference in the lives of children. Moreover, it really is intrinsically a valuable learning experience. As a volunteer you're not just giving; you're receiving a great deal in return.

Sometimes you can sign up for a course that has a service learning component. For instance, you may find a psychology course where the professor assigns a project in which students serve a certain number of hours at a local charity. You may be able to sign up for a first-year composition course in which a major assignment is to volunteer at, say, a local food bank or after-school program and then write about the experience.

Another area in which students are becoming increasingly interested is the health of our environment. Many college campuses are developing green initiatives in which you can become involved. Look into helping with recycling efforts on your campus. Join or form an organization that finds and restores old bicycles for students to borrow so they don't need a car to get around campus or town. Be a part of the effort to plant trees on campus and keep the campus plants and trees



The students in this photo are taking an alternative spring break. Where do you think they are? What are they doing? Could you see yourself on an alternative spring break? Why or why not? What advantages are there to going on an alternative spring break? (Write your thoughts in the space provided.)

healthy. Start or join an environmental action club to help in the efforts to make your campus more sustainable. You can have a great impact!

Here are some other good ways to find volunteer opportunities:

- ▶ Visit your campus volunteer or student activities office.
- ▶ Join a campus organization that does volunteer work (fraternity/sorority, Circle K, student professional association, and so on).
- ▶ Call or visit the local chapter of the YM/YWCA, United Way, Red Cross, or other organization that is likely to welcome volunteers.
- ▶ Visit the government offices of the city or town in which your college is located. Find out about volunteer activities or initiatives in the town that might interest you.
- ▶ Visit this website to find out about volunteer opportunities beyond your town or campus: www.ed.gov/students/involve/service/edpicks.jhtml.
- ▶ Look into an “alternative” spring break, where you work for Habitat for Humanity or another organization during your time off.

The following are some success stories of student volunteers whose efforts paid off for them and the people they helped.

Ashley, a marketing major, started out volunteering at the local soup kitchen during her first year in connection with one of her sorority’s service projects. While there, she met another volunteer who just happened to work for one of the large local marketing firms. This led directly to an internship with the company, one that helped her land her first job.

Phil started as an elementary education major. He volunteered at a local day care center to get required observation hours for the major. While working there, he became interested in how family dynamics affected the children with whom he was working. After reflecting on this interest, Phil talked to his advisor and eventually changed his major to psychology. He now plans on going to graduate school and preparing for a career as a family therapist.

Gina was a junior studying architecture. Gina's roommate, Stephanie, decided to take part in an alternative spring break program and teach on a reservation in rural South Dakota and asked Gina to go with her. Gina ended up loving the experience and decided to join the Peace Corps after college. Now, working at an architecture firm back in the United States, she feels that her experience in South Dakota changed her life for the better. It expanded her view of the world and helped her make other decisions as she was completing college.

The Role of Visual and Performing Arts in Our Lives: Connections and Careers

Just as academic, social, and volunteer activities all play a role in the lives of college students trying to make the most of their college experience, so can the visual and performing arts play an important part. The arts can transport us to another place or time; help us discover beauty in the world and in each other; allow us to look at something in a new way; relax us; inspire us; and provide us with an outlet for our ideas, frustrations, hopes, and dreams. Try to imagine your day-to-day life without music. Try to imagine never being able to go to a movie or a play. It is hard to fathom. Even when we are simply spectators, the arts are integral to our lives as a whole. When we participate, we gain even more benefits. Dancing is not just a form of artistic expression, but also a wonderful form of exercise and stress relief. Playing an instrument can provide a student majoring in the sciences, for instance, a chance to take a break from one kind of thinking and use another. Just being consumers connects us to many different art forms, from graphic design to furniture design to architecture. The arts are all around us. The better we connect with them, the fuller our lives can be.

Beyond enjoying and appreciating the arts, careers in the arts can be a real possibility for many students. While college students often think of doors slamming in actors' faces or painters scraping by in makeshift studios with no one to buy their paintings, the truth is that opportunities do exist. While it is important to be realistic, it is also important to be informed. The more you know about the connection between the visual and performing arts and possible careers, the better the chances that you can achieve what might previously have seemed impossible.

Increasing Your Yield

Readings for Practical Application

In this chapter, you considered the importance of diversifying your own portfolio of experiences. You learned how to take advantage of the many opportunities on campus to help you gain the confidence you need to succeed in college and beyond. You found that there are many ways for you to gain experience and personal growth through volunteering. Likewise, recognizing and embracing the diversity of your college campus will open many doors for you, help you learn more about the world, and, ultimately, discover a lot about yourself. Few places offer as many free cultural activities as a college campus. Plays, art exhibits, film festivals, and lectures are there for you to enjoy. You may even decide to become a part of such cultural events by trying out for a play or musical or exhibiting your work or reading your poetry. In fact, becoming involved in the arts can help you to grow in ways that can build your confidence for contributing to any field in which you are interested. The focus on the readings for this chapter, then, is the arts.

You have seen how texts in various disciplines approach their respective subjects. Nearly all liberal arts colleges require students to take humanities courses, which can include courses in the visual and performing arts.

The Textbook Case reading that follows is an excerpt from a graphic design textbook. Read the strategies suggested for approaching such a text, and then invest some time and effort in reading this excerpt in order to prepare for future readings in this unique discipline.

If you are contemplating becoming a visual or performing arts major, you will be reading textbooks in the field as well as practicing your art through such pursuits as painting, photography, acting, dancing, or singing. If you are considering such a major, you may be wondering what the future holds for you in terms of possible jobs and career paths. The Life After College reading will give you a glimpse into the surprising and varied opportunities open to you in the world of music.

These readings will give you an opportunity to explore the unique discipline of the visual and performing arts, while also expanding on the content of the chapter. Invest in these readings and discover future growth opportunities.

Reading and Study Tips: Visual and Performing Arts

Unique Features and Comprehension Strategies

Unique Feature of Textbooks in the Arts

Texts include visual and graphic displays to provide a comprehensive perspective on the material.

Strategies for Comprehension

- Focus on works that figure prominently.
- Those featured in both lectures and text may be on a slide exam.
- Listen carefully to what the professor is also focusing on in the lecture.

Unique Features and Comprehension Strategies (*continued*)**Unique Feature of Textbooks in the Arts****Strategies for Comprehension**

Art tends to be full color.

- Focus on those art works featured in each chapter.
- Sketch the works to make “visual flash cards” from which to study.

Important terms are often in boldface type.

- Learn the language of the subject.
- Look up terms in the glossary.
- Make note cards and review regularly.
- Make associations or silly or unusual connections to help you remember.

Studio art texts focus on procedure.

- Watch for lists of instructions.
- Use photos to help you learn steps.
- Practice as soon as possible.

Texts lend themselves to objective and subjective tests.

- Know what type of test you will be taking.
- For objective tests, study terms, dates, names of works, artists, specific periods.
- For essay tests, look at the bigger picture. Really understand a certain period. Be able to identify characteristics and artists. Be able to compare and contrast different historical periods. Practice writing your answers!

Reading 1: **A Textbook Case**

The following is an excerpt from a graphic design textbook that typically would be used in an introductory course. Many college students decide to take art courses, such as art history, art appreciation, and even studio courses, to fulfill general electives. The art of graphic design is just one of the many options you may be able to explore. We live in a world in which visual media are all around us, through the Internet, movies, television, magazines, advertising, and product design. In Chapters 5 and 6, the textbook readings focused on communication; as you will learn, visual images are yet another powerful form of communication. The more you understand about the role of design in our popular culture, the more you can appreciate and think critically about the graphic design that is around you every day. As you read this textbook excerpt, think about how you are influenced by visual images and how they relate to or influence the messages you are receiving from the media in your everyday life.

BEFORE YOU READ

Think about an example of graphic design that appeals to you (from an ad, website, product, T-shirt, and so on). What do you like about it? Be specific.

Visual and Intellectual Unity

A. E. Arntson

Two kinds of unified communication occur in graphic design. *Intellectual unity* is idea generated and word dominated. *Visual unity*, in contrast, is created by placement of design elements perceptible to the eye.

The poster in Figure 7–1 by the famous early-20th-century designer A.M. Cassandre is unified both intellectually and visually. It is a poster for an optician, so it is intellectually unified by the slogan, the emphasis on the eyeglasses, and the bright, clear area of vision through which the eyes peer at us. It is visually unified through a complex series of events as the small type frames the subject's eyes and leads our eyes down and into the *O* of *Leroy*. The size of this small type echoes the size of the serifs on the larger name. The verticality of the typography in *Leroy* is echoed by the bright rectangle surrounding the face.

Imagine that a designer and a writer are hanging a gallery show of a photojournalist's work. The designer is hanging photographs together that have similar value and shapes. The writer is following behind, rehanging the photos together according to subject matter: a picture of a burning building next to one of firefighters. One is *thinking* of subject matter (intellectual unity); the other is *looking* at design (visual unity).

As a design student, you are learning to see the visual unity in a composition and to create with an eye for it. Few people have this skill. Study the form of your design. Once you have mastered the visual “language,” you will be able to use it to strengthen both visual and intellectual communication. Both are important and should work together.



FIGURE 7–1 A.M. Cassandre. Poster for an optician.

Design as Abstraction

Abstract art drew attention to pure visual design. It was “about” color, value, shape, texture, and direction, although often incorporating recognizable imagery. In a purely nonobjective painting by Piet Mondrian (Figure 7–2), we are intrigued by the breakup of space and the distribution of value and color. There is no “picture” to distract us from visual information. The de Stijl movement had a tremendous influence on graphic design as layout artists began arranging their shapes and blocks of type into asymmetrically balanced compositions.

A good artist must be a good abstract artist, using both pictorial and nonobjective elements. Figure 7–3 shows an International Typographical Style layout by Swiss designer J. Muller-Brockmann that demonstrates a strong eye for pure design shapes reminiscent of Mondrian’s surface divisions and strong horizontal/vertical

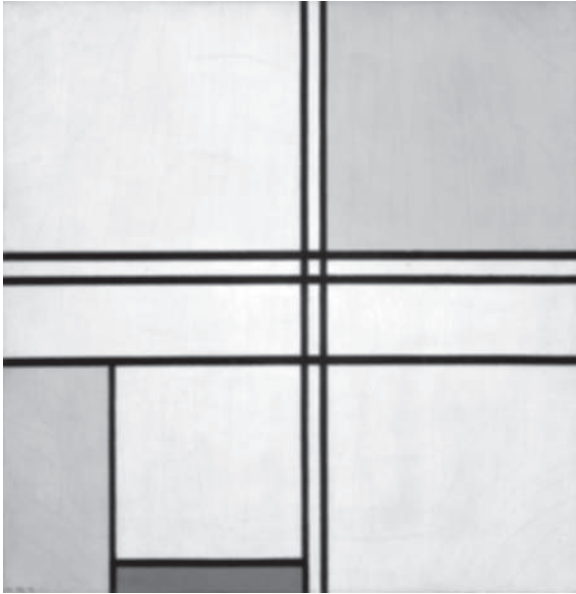


FIGURE 7-2 Piet Mondrian. *Composition Gray-Red*. 1935. Oil on canvas, 57.5 x 55.6 cm. Gift of Mrs. Gilbert W. Chapman, 1949. 518.



FIGURE 7-3 J. Muller-Brockmann. *Poster for Kunstgewerbemuseum, Zurich*. 1960.

orientation. Figure 7-4 by contemporary Louisville designer Julius Friedman shows a de Stijl influence on letterhead design.

Graphic design is essentially an abstract art that combines a greatly varied array of elements into a formal 2-D structure. A work should be balanced and visually compelling in its own right as well as supportive of an idea. *Design is a visual language*. The 20th-century movements in art and design contributed to our current understanding of that language. The fields of Gestalt psychology and semiotics have also helped us understand how meaning is formed.

Working Together

In a design firm, the visual design of a project is given full consideration. In an ad agency, however, copywriters often dominate. Many other places that employ designers also have word people in key positions. These people tend to be sensitive primarily to words and ideas (intellectual unity). They are not trained in visual communication. For this angle, they will rely on you. Together you can ensure, as the Bauhaus would say, that the *form* of a design matches its *function*.

Constructivist El Lissitzky said, “The words on the printed page are meant to be looked at, not listened to.” How do we *look* at designs, and how do we *create* unified ones? The answer has a great deal to do with balance.

Visual Dynamics

A ladder leaning precariously against a wall will make us tense with a sense of impending collapse. A diver poised at the top of the high dive fills us with suspense. We are not passive viewers. We project our experiences into all that we



FIGURE 7-4 Julius Friedman. Art director, designer. Images design firm. Louisville, KY.

see, including the printed page. How do we project our physical experience into that flat, rectangular surface? *Kinesthetic projection* (sensory experience simulated by bodily movements and tensions) is operating, whether we deal with pictures of people or the abstract shapes of type design. Figure 7-5 by Don Egensteiner demonstrates the attraction of gravity on type. Our culture reads a page from top to bottom, a movement that matches our experience with gravity. It is harder for us to read a design of words or images that asks the eye to go from bottom to top.

We project emotional as well as physical experience onto the page. An illustration of a man stabbed causes discomfort due to such projection. Visual form stirs up memories and expectations. That is why visual perception is so dynamic.

Loose strokes that allow the process of construction to show through also arouse this dynamic tension. The visible brush stroke or “mark of the maker” pulls viewers into the process of creation. Many interesting and appealing printed pieces are created by allowing the tension of the creative process to show through, as in this delightful visual pun on the Saint Louis arch (Figure 7-6).

As you saw in Chapter 3, any mark made on a page upsets the surface and organizes

the space around the mark. *This dynamic tension is not contained in the paper itself, or in the graphite, ink, or computers we use. It is created by our interaction with the image.*

Top to Bottom

We are uncomfortable with shapes clustered at the top of a page, with open space beneath them. We have observed in the world around us that many more things are at rest on the ground than in the sky. If they are not “standing” on anything, we feel suspense as we wait for them to fall. We experience a design as top-heavy much more quickly than as bottom-heavy.

Milton Glaser—a contemporary designer and illustrator, and one of the founders of Push Pin Studios—has been a major force in graphic design for over 45 years. He deliberately plays with this top-to-bottom tension in his double portrait of dancer Nijinsky (Figure 7-7). All that anchors the dancing, gravity-defying feet is the line of the baseboard under the left foot and the vertical line at the corner.

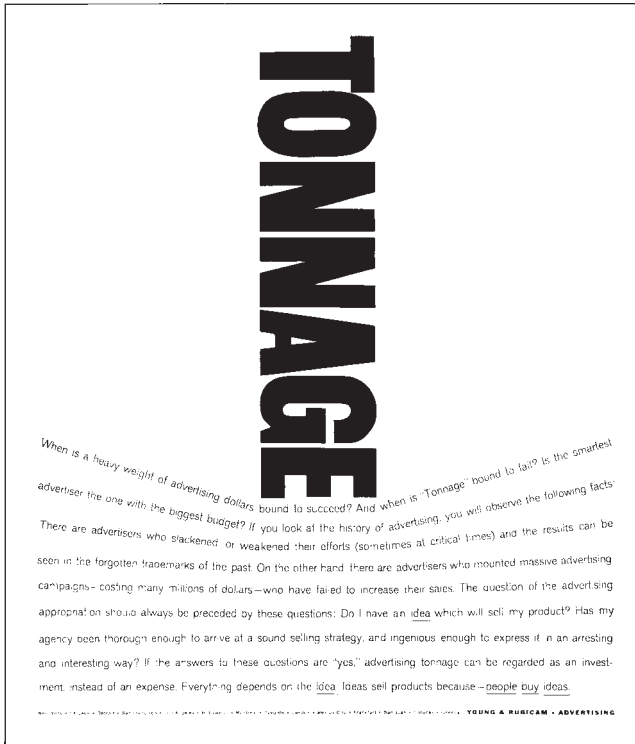


FIGURE 7-5 Don Egensteiner. (Young & Rubicam, Inc.) Ad in *Fortune* magazine. 1960.

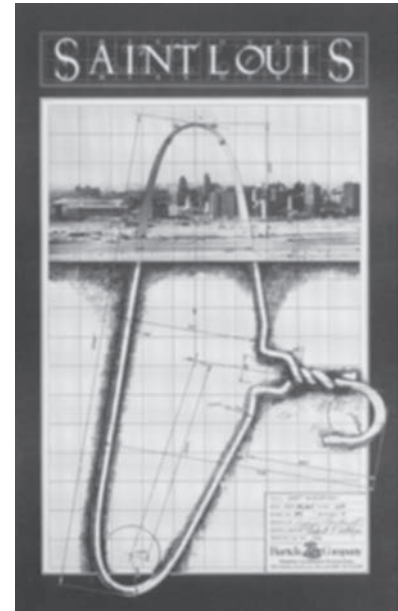


FIGURE 7-6 Self-Promotional Ad. Bartels and Company, St. Louis, MO.

Type designers have long believed in the importance of putting extra weight at the bottom of a letterform to make it look firm and stable. The 8 and 3 in Figure 7–8 look top-heavy when viewed upside down. Book designers customarily leave more space at the bottom than at the top of a page. They understand that a sense of balance cannot be achieved by placing identical margins at the top and the bottom of a composition. This is the same principle used when matting artwork. The bottom measurement is slightly greater than the top, allowing for an optical center that is slightly different from the mathematical center.

Vertical and Horizontal

We find horizontal and vertical lines stable, probably because they remind us of our vertical bodies on the horizontal earth. Milton Glaser again deliberately violates this sense of stability in Figure 7–9. As he comments, “the diagonal of this figure gives the illustration its surreal perversity.”

We find diagonal lines dynamic because they seem in a state of flux, posed for the movement toward the more stable horizontal or vertical. The de Stijl artist Theo van Doesburg deviated from Mondrian’s horizontal and vertical



FIGURE 7-7 Milton Glaser. Portrait of Nijinsky & Diaghilev designed and illustrated for *Audience magazine*.

the entire composition at an angle. Part of the delight in Figure 7-9 is the unusual and unanticipated angled figure. This kind of design solution can surprise and interest the viewer.

Left to Right

In Western cultures, we read from the left side of the page to the right, and this experience may influence the way we look for balance between the sides of a design. The left side is more important, as our attention goes there first. Pictorial movement from the left toward the right seems to require less effort than movement in the opposite direction. An animal speeding from right to left, for example, seems to be overcoming more resistance than one shown moving from left to right. You can explore this left-to-right balance by holding your designs up to a mirror. They may now appear unbalanced.

Overall

Every two-dimensional shape, line, figure/ground relationship, value, and color possesses visual dynamics. We have seen the dynamic value of a kinesthetic reaction, or empathy with the image. There is more to the dynamic of perception, however. We have all seen images of a supposedly moving figure that appears in awkward, static immobility. The objects of dancer or automobile can lead us to expect movement, but only skillful control of visual language can evoke it. Successful communication requires balance, the directing and conducting of visual tensions.



FIGURE 7-8 Type turned upside down looks top-heavy.

compositions, stating that the modern human spirit felt a need to express a sharp contrast to the right angles found in architecture and landscape. An oblique angle is one of the quickest, most effective means of showing tension.

This tension can be created by placing a single shape at an oblique angle or by placing



FIGURE 7-9 Milton Glaser. A drawing created to illustrate a story in *Audience* magazine about a man with a crooked head.

AFTER YOU READ

Think about the same example of graphic design you identified before you read this passage. Think about the concepts you learned. Does your example have visual and intellectual unity? Why or why not?

Reading 2: Life After College

To prepare for life after college and a career in the visual and performing arts, you need to know as much as possible about the industry in which you are interested. What are the

trends? Where are the jobs? The more you know, the better you can decide if a field is right for you and where you might be able to find jobs you would love to do. In the previous textbook reading, you learned about the visual art of graphic design. Another art form, music, is the focus of the following article. When you think about a career in music, do you think primarily about someone trying to make it big as a musician? Do you dismiss the idea of a career in music because you know you will never be a famous singer? Yet, what about the CDs you listen to every day? How did the musicians record their music? Who would have been involved in the production of a new record? What about the soundtrack of your favorite video game? Who would have been involved in its creation? What about the people working behind the scenes of your favorite Broadway show or a concert you recently attended? While people certainly do end up with successful Broadway or recording careers, there are many more options available in the music field. Music is a business like any other, and, as such, there are careers in music that involve more than actually making music.

BEFORE YOU READ

Try to think of at least two jobs that are related to the music industry that do not involve performing. How did you know about these types of jobs? What skills are needed to land such jobs? Share your answers with your classmates in a small group and see what jobs they identified.

Where Do I Go with . . . Music?

R. Chevat

Where You Can Go With Music

Do you hear music in your future? These four successful people did, too.

Some People Cry at the Opera

Others never feel more alive than when they're listening to their favorite band and playing air guitar. Then there are people who walk around all day singing or whistling to themselves, just because they like to.

Do you love music, either listening to it or making it yourself? Then maybe a career in the music industry is the right choice for you. People don't have to play instruments or be great singers to get jobs in the music industry. What's most important is a love of music and some imagination.

Broadway Singer

Tracee Beazer had stars in her eyes from an early age.

"Dancing was my first love," she says. "From age 3, even before I knew what Broadway was, I knew that [was] where the good dancers went, and if you're going to be on Broadway, you're going to have to sing."

Today, at the age of 23, Beazer has already accomplished her goal. She's in the Broadway cast of *Hairspray*. Eight times a week, she sings and dances in a hit show. "I play one of the Dynamites," she says. "They're kind of like the Supremes."

It took a lot of hard work to get there. Beazer began taking voice lessons at age 12. She tried out for parts in her local community theater. Add to that acting and dance classes, auditions in New York City, and endless hours of practicing—even

though she's still very young, Beazer has years of experience behind her.

Her first real break came when she was 18 and got a part in a production with Theaterworks-USA, a touring children's theater company. "I thought I was set," she says. "But it only lasted a month and a half. After that, it was back to auditioning."

Auditions can be unnerving. "Sometimes you go in and you're on and really hit it. Then sometimes you go in and you crash and burn. But a lot of times, that's when they call you back, so you never know."

Even though she's made it to Broadway, Beazer plans to keep taking lessons. "Singers who are at the top of their field are still going to coaches," she explains. "You can always learn something new. It's like athletes who have trainers."

After a year playing the same part, it's not always easy to keep up your enthusiasm, she says. Still, she never takes it for granted.

"When you're on the stage, just the curtain raising up, just seeing that audience gives you a thrill," says Beazer. "Sometimes I turn to the other actress in my dressing room before we go on and I say, 'We're on Broadway!' It's really unbelievable sometimes."

Record Company Executive

How would you like a job going to clubs to hear music almost every night of the week? That's what Jason Olaine did as an executive for Verve Records. Part of his job was to look for new bands for the label. That's where the nightly club hopping came in.

"Going out five or six nights a week is fun at first, but it gets awfully tiring," Olaine says. At the same time, he was learning about producing albums. In addition to finding new talent, a producer works with musicians, sound engineers, and a marketing department to plan, record, and sell new albums.

At Verve, Olaine worked with jazz musicians. A jazz CD that Olaine worked on, *Directions in Music, Live at Massey Hall*, won a Grammy award in 2003.

In college, Olaine played the trumpet in a jazz combo, but he really didn't plan to go into music as a career.

"I was thinking of going to business school," he remembers, "but I realized that every time I got a paycheck, I went down to the record store and spent it on records. I thought, 'I have a problem here. How do I do something with music for a living?'"

Olaine got not just one but four internships in the music industry—all at the same time! He worked for a music industry magazine, the San Francisco Jazz Festival, a radio station, and a jazz club. Only the magazine paid him. Still, he was confident that one of these internships would turn into a job.

Olaine was right. He became artistic director at the jazz club, booking their performers. From there, he took the job at Verve Records in New York City. Today, Olaine is an independent record producer. He works with new bands to record demo CDs, hires musicians and engineers for studio recordings, or puts together musicians he thinks would work well together. He has cut back on his overbooked nightlife while still doing the thing he loves most—helping others make music.

Audio Technician

Like a lot of kids, Jonathan Gold was a drummer and guitarist in a rock band in high school. But he always found himself hanging out at the soundboard. If there was a problem with the sound equipment, he was the one who wound up fixing it. That's when he began to think about becoming an audio technician.

"I had what they call an engineer's attitude," Gold says. "It's sort of laid back. When everyone is running on high emotions in a crisis, the engineer remains levelheaded." After high school, he enrolled in a nine-month recording engineering and studio technology course at the Omega School for Applied Recording Arts and Sciences in Rockville, Md.

That early experience led to his job today at the Library of Congress in Washington, D.C. Gold, now 26, works as audio technician in the American Folklife Center, preserving old recordings. The center has thousands of recordings, including some on wax cylinders that are almost 100 years old. Many

are not of music. For example, there are several cylinders of Native American storytellers.

One set of cylinders, made in the 1920s, is of Pueblo Native American speakers. Recently, when members of that tribe were worried their language was dying out, they were able to use digitized files of those cylinders to create a language education program.

“The big push in the library is to get everything digitized,” Gold explains. “Every time you play an old cylinder, record or tape, you wear it out a little. Once you get it in a digital file, you don’t have to play the original anymore. Plus, you can make it accessible to everyone, even over the Internet. . . . One woman had never heard her father’s voice, and we had a recording of it from 1925.”

His work at the center has taught him a new appreciation of folk music and the blues. He now listens to blues records even when he’s not on the job. Mainly, Jonathan gets a lot of satisfaction knowing he is helping to save a priceless part of American history. He has his “engineer’s attitude” to thank for it.

Music Therapist

Jennifer Worthen has found a way to use her love of music to help people. She works as a music therapist in Chapel Hill, N.C.

Music therapists work with people who have disabilities. The therapists use music as a way to communicate with their patients and to help them deal with whatever problems they are facing in their lives.

Some of Worthen’s patients are elderly people in nursing homes. “We try to get them to sing familiar songs,” she says. “Although a lot of them can’t speak or don’t have strong verbal skills anymore, when they hear a song they recognize, it kind of brings them back to life, and they can hum along or sing. The music engages them and stimulates their minds.”

The 31-year-old therapist has loved music from the time she went to see a production of the musical *Annie* when she was a child. Worthen got a record of the show and learned every line. In high school, she played the clarinet in the school marching band.

In college, Worthen majored in music and psychology. “I didn’t know that music therapy existed,” she says. “I just knew that I loved music and I loved people.” Then one of her professors told her about a career that combined both.

Music therapists use music in all sorts of ways. They might play instruments with their patients or make up songs to address specific problems. Worthen works with autistic children, who have difficulty knowing how to react in social situations. She uses a song about shaking hands to help autistic kids learn that simple but important social skill.

“Music is very structured,” Worthen explains. “Structure is something a lot of our clients need, especially autistic kids.”

For people who love music and helping other people, music therapy may be a rewarding career path. It certainly has been for Worthen, who tells *Career World*, “I think the thing I love most about my job is witnessing the little miracles that happen every day, when our patients respond to the music.”

Making Music a Career

There are lots of ways to make it in the music industry. Some people break into the music industry by taking lessons or studying music in school. Others, as Jason Olaine did, do it by learning the business in internships or entry-level jobs.

As Olaine explains it, “This is not something you do for the money. It really is a passion for me. I’ve had quite a few jobs, but as long as I’m doing something with great new music, I can wake up each day and [say,] ‘I love my job.’”

AFTER YOU READ

What did you learn about careers in music that you did not know about before? What can someone interested in music do on campus to gain experience for work in the music field?

Here are some other careers related to the visual and performing arts for you to investigate:

- Music librarian
- Music software developer
- Composer of musical scores for film and television
- Animator
- Video game designer/composer
- Web designer
- Set designer
- Lighting or sound technician for plays and musicals
- Costume designer for stage or films
- Marketing director for Broadway shows
- Product designer
- Creative director at an advertising agency
- Dance instructor

And there are many more!

Compounding Your Interest: Further Readings

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8 Banking on a Healthy Future



It has been said that if you don't have your health, you don't have anything. This is very true in college. All the studying in the world won't make a difference if you are not well enough to make it to class, take a test, or finish that project. Likewise, decisions you make now could affect your health for the rest of your life. College presents a world of possibilities, but it also presents a good number of health risks. Understanding these health risks and learning how to remain healthy now and in the future is one of the best investments you can make—as important as the investment you make in your textbooks or extracurricular activities. We learn about health risks from researchers, doctors, and others who have worked to discover causes, promote prevention, and search for cures. Health, like other areas of life, has its own history, just as you have your own health history. What you have done in the past to help

This chapter will cover the following topics:

- ▶ Staying Healthy When the Going Gets Rough
- ▶ NEWS: Nutrition, Exercise, Water, Sleep
- ▶ Understanding the Health Risks of College Students
- ▶ Alcohol/Drug Abuse
- ▶ STDs
- ▶ Meningitis and Other Communicable Diseases
- ▶ Tobacco Use
- ▶ Violence/Date Rape
- ▶ Depression/Suicide
- ▶ Side Effects of Tattooing and Body Piercing
- ▶ Eating Disorders
- ▶ The Role of History in Our Lives: Connections and Careers

Think About It



Answer the following questions in the space provided.

What healthy habits do you currently have? What unhealthful ones?

Share your answers with a small group. Talk about ways you can make the next four years and beyond as healthy as possible.

or hurt your health, and what decisions you make now, will affect your health in the future. However, as a college student, you have many resources to help you stay healthy. Just as a historian uses resources, so must you use the health resources available to you on campus to ensure a healthy future through the health history you are now creating. Therefore, this chapter will also focus on the role of history in our lives. Some of you may be contemplating a major and perhaps a career in the history field, but all of you will probably take a history course along the way. Regardless of the role history may play in your academic or professional life, history plays an important part in your personal life. Who you are now is a reflection of many things, including your past. Likewise, the past is a rich and wonderful resource for learning more about yourself and the world around you, helping you to see where you have been, where you are now and why, and where you might be going.

FIRST THINGS FIRST

Your good health begins today. Right now. No more saying, “I’ll worry about it tomorrow.” No more dwelling on what you did not do in the past—you can change. Getting healthy or staying healthy is not as hard as it seems. What one thing can you do today to get on the road to good health? It may be as simple as eating a piece of fruit or drinking a few glasses of water. It may be trying to get a couple more hours of sleep instead of staying up until 3 a.m. and dragging yourself bleary-eyed to your 8 a.m. class. It could be walking to class instead of driving across campus or taking the stairs instead of the elevator. Your health really can begin with first things first—taking it one step at a time.

Staying Healthy When the Going Gets Rough

Being a college student, as you can see, is hard work. And when the going gets rough, the first thing that may suffer is your health. It is easy to let your healthful habits slide during the hectic times of your first semester in college, whether you are right out of high school or are working full-time while also trying to balance classes and a family. You may not maintain a regular sleep pattern or get very little sleep (one day your first class may be at 8 a.m. and the next day you may not have a class until 12 noon, or you may not be able to study until late at night after work or after the kids have gone to bed). You get to the cafeteria or food courts and are confronted with pizza and burgers and nachos. You hang out in your friend’s room or take care of everyone else instead of going to the gym to work out. You stay up for three nights straight because you left a research paper until the last minute. You share a cup with your friend at a party and you both come down with a cold. The list could go on and on. Being in college puts you at particular risk for health concerns even

Lifeline



Think your campus health center is only for sick students? Think again. Visit your campus health center while you are still healthy so you can stay that way. A member of the staff will be happy to talk to you about healthful habits and to provide pamphlets of information on anything and everything from healthful eating to safe birth control methods. And this information is free and confidential!

though you are, in general, the healthiest you will be in your life. For the most part, college students are healthy, but staying healthy may take some extra effort on your part.

As we said before, coming to college right out of high school, you may be faced with doing many things on your own for the first time. Returning to school after many years, you may be faced with the additional stress of work and family responsibilities. The key to staying healthy in college is arming yourself with the information you need for self-care. You are the one who can make sure you stay healthy.

NEWS: Nutrition, Exercise, Water, Sleep

To stay healthy as a college student, it is as easy as keeping up with the **NEWS: Nutrition, Exercise, Water, Sleep**.

Nutrition

Healthful food is one of your best weapons against illness in college, and if you eat well, you will also feel a lot better and have more energy. You may have already heard of the “freshman fifteen.” That really is not a myth. Many freshman do gain weight because they go from eating balanced meals at home to eating whatever they want—and mostly junk food—at any time of the day or night. Also, returning adult students sometimes stop cooking to study instead and may resort to a diet of fast food. What, then, can you do to be certain you are eating right? Keep in mind that you should make sure you get adequate protein, fruits, and vegetables every day. Also, resolve to limit the amount of junk food and fat in your diet. Specifically:

- ▶ Eat and drink low-fat or nonfat dairy products.
- ▶ Choose chicken or fish more frequently over red meat.
- ▶ Eat a salad instead of a sandwich made with lunchmeat.
- ▶ Choose tomato sauce for your pasta over high-fat cheese sauces.
- ▶ If you eat pizza, choose plain cheese or veggie over sausage or pepperoni.
- ▶ Eat pretzels or air-popped popcorn instead of chips for a late-night snack.
- ▶ Whenever possible, choose broiled or baked food over fried food.
- ▶ Eat unsweetened cereal instead of presweetened cereal, even if you have to add a little sugar. Alternatively, mix the two together to get less sugar.
- ▶ Make a sandwich with wheat bread instead of white bread.
- ▶ Eat more beans for fiber.
- ▶ Eat five servings of fruits and vegetables a day (put fruit in your cereal, have a salad at lunch, eat some corn at dinner—it is not too difficult).
- ▶ Learn to eat less butter on your toast and rolls. You may not even miss it if you cut it out all together.
- ▶ Learn to cut down on salt. Don’t add it to your foods at the table. Once you have cut back, excess salt actually may taste terrible to you. This healthy step is really worth a try.

Here is a sampling of some healthful meal choices, whether at home, in your residence hall or apartment, or in the campus cafeteria or food court:

<i>Breakfast</i>	Plain yogurt with fresh fruit added, oatmeal with nonfat milk, wheat toast with jelly instead of butter, fresh orange juice, water
<i>Lunch</i>	Salad with low-fat dressing, turkey sandwich on whole wheat bread with lettuce and tomato (skip the mayonnaise), an apple or an orange, water
<i>Dinner</i>	Grilled or broiled chicken or fish, salad with low-fat dressing, steamed vegetables, brown rice, wheat roll without butter, frozen low-fat yogurt
<i>Snacks</i>	Peanut butter on celery or low-fat cracker, popcorn without butter, oatmeal cookies, low-fat granola bars (sweets in moderation!)

Exercise

Staying active when you are under stress is another great way to stay healthy. Active people tend to get sick less than sedentary people, and they feel better! Staying active is not difficult once you make it a habit. Even if you're not used to exercising, you can still do a few simple things to keep from being a college couch potato. But if you always exercised regularly in high school or before coming to college, stick with your routine as much as possible. Your body will thank you for it! And so will your mind; the

stress you relieve through exercise will help you concentrate better, and your grades will improve. Just as you need to find a balance between school work and social activities, you need to strike a balance in terms of the physical activity you get on a regular basis.

Fitting exercise into the busy life of a college student is not as difficult as it may seem. Walk to class even if you have a car on campus. Resist the urge to drive to every building. Ride your bike to class and walk up and down stairs instead of taking the elevator. Take a walk after dinner each night with a friend to ease the stress of the day and burn off a few calories. Get involved in an organized exercise activity at least once a week (aerobics, swimming, golf, and the like). Use the fitness equipment available on your campus (weights, exercise machines, and so on). Many college campuses are a great place to jog or run (if you run at night, always have a running partner and wear light or reflective clothing). Try to raise your heart rate through exercise for at least thirty minutes at a time, three times a week. If you're worried about having too much work to do, combine



The students in this photo are taking a break to get in a run together. How can you fit exercise into your daily routine, and what might you realistically do?

exercising with studying. For example, you can listen to taped notes on a headset while you are walking or jogging, or you can review notes while on a Stairmaster.

Teamwork Activity

The object of this activity is to help each other learn how to eat healthful meals in college. Organize yourselves into groups of three. Within your group, assign each student to a different campus office to interview a key person. Have one student go to meet a dietitian in the cafeteria. Have another student meet with a nurse in the health center. Have the third student interview a health or physical education professor. In the interviews, ask the following questions:

- ▶ What is a good breakfast to get a college student through the day?

- ▶ What are some healthful choices in the typical cafeteria line-up?

- ▶ What are some foods to avoid? What are some eating habits to avoid?

- ▶ What are some healthful snacks to stock up on in the dorms, at home, and in the car or a backpack for on-the-run eating?

- ▶ What types of drinks are the most healthful?

- ▶ What's a good dinner choice at a food court?

- ▶ When interviews are done:

- ▷ Come back together to create an ideal menu for one week. Copy your menu to distribute to the class. Discuss what choices you made and why.
- ▷ Then, try out the menu for a week before getting back together in your small group. How closely were you able to stick to the menu? What problems did you encounter? What are your overall thoughts about this menu, now that you have actually eaten the meals and snacks? (Write your thoughts in the space provided.)

Water

“Water, water everywhere, and not a drop to drink.” This line from Samuel Taylor Coleridge’s *The Rime of the Ancient Mariner* refers to sailors being surrounded by an ocean of undrinkable salt water. In college, however, many students neglect to drink enough water on a daily basis even though there’s plenty of it around. Being dehydrated causes you to function at less than your best. Even mild dehydration can cause fatigue or muscle soreness, and it can definitely affect your sleep. Prolonged dehydration can cause more serious medical problems, such as digestive tract infections and kidney stones. On average, your body functions best with the equivalent of eight 8-ounce glasses of water a day (that’s a half gallon!). There are many ways to make sure that you get enough water. First, drink a glass of water with every meal. Bring a water bottle with you every day and refill it at the water fountain (don’t use a water bottle for too long without washing it with soap and hot water). Add lemon, lime, or orange slices to your water to spice it up. Choose water over sports drinks when exercising. Have water before a sugary drink. If you still want the sugary drink, then have it after the water. Drink a glass of water after a meal. This actually helps clean your teeth and freshen your breath.

Sleep

For many college students, complaining about lack of sleep is nearly as popular as complaining about cafeteria food. The all-nighter is part of college lore. Staying up and talking until the early morning hours is one of those experiences that comes with the newfound freedom of living away from home. If you commute or you are working full-time while going back to school, you may have so many other things taking up your time that you stay up late to fit in your studying. But beware. A lack of sleep will catch up with you, and if you’re not careful, the price you pay could be your grades, your health, and your own sense of well-being. You may find yourself drifting off to sleep during class, unable to focus when studying, feeling sleepy while driving, and not having the energy to exercise or enjoy social activities. Ideally, you should be getting seven to eight hours of sleep a night. And for some of you, that number may need to be higher. Listen to your body.

Make sure that you assign sleep the high priority it deserves in your life. First, you need to prepare for sleep. If you want to be in bed by 11:30, you need to start getting ready at least half an hour earlier. Give your body a chance to wind down.



DIY: Do-It-Yourself Activity

Keep a sleep journal for three days. To do this, every morning, before you begin your day, write down what you did to prepare for sleep the night before; what you did in the two hours before you went to bed; what, if anything, you ate before bed; what time you went to bed; and what time you woke up in the morning. Then write a few sentences about how you feel in the morning. After three days, look at your sleep habits. What healthful habits do you have? Which ones are not so healthful? What do you need to change?

What I Know Now

Nancy • Graphic Design Major • Age 20 • Rockville, MD

“After missing the second semester of my freshman year, I think I have learned a few lessons,” Nancy said to her advisor the first week of the new semester. When Nancy moved into the residence hall, it was her first time away from home. “I unfortunately didn’t know how to take care of myself. My Mom always nagged me about staying healthy—eating right, sleeping well, reducing stress, even drinking enough water. Almost immediately, I got caught up in the freshman schedule of actually no schedule at all,” Nancy recalled. “My roommates and friends would stay up until two in the morning one night, sleep until noon on another day, and sometimes just order pizza delivery instead of making it to the cafeteria. I don’t even want to get into how I stopped running on a regular basis and consumed way too much junk food. Soon I was coming down with a cold every other week,” Nancy lamented. “I missed too many classes because I either slept through the alarm or was just too tired to bother. By the end of my first semester, I came down with mono and went home.” Nancy decided not to return to school the next semester. She is now back, living in an off-campus apartment with one roommate, and committed to maintaining a healthful lifestyle. “What I know now is that my body wanted me to take care of it. My health and my grades go together.”

Establish a regular routine for this (such as brushing your teeth, washing your face, reading a book for pleasure). Also, if you have a roommate, this will let him or her know that you’re getting ready for bed. Avoid caffeine and alcoholic beverages for a few hours before bed. Although alcohol can make going to sleep seem easier, it will interrupt your sleep and affect how deeply you sleep. A warm shower can help you relax. Don’t eat a heavy meal or snack before bed. Your body will be busy digesting the food and keep you from sleeping. If you have a roommate, work out an arrangement regarding what lights will be on, the nighttime noise level, and so on. Remember to be considerate. If you find that you and your roommate have lifestyles at opposite ends of the spectrum, you may want to request a roommate change. Don’t exercise too late in the day. Avoid sleeping pills because you can become hooked on them, causing your body to forget how to sleep on its own.

Staying healthy when the going gets rough is not as hard to do as it may seem. If you can just focus on the basics, you’ll be fine. Remember that investing in your health is as important as investing in your academic success. If you’re not healthy, you’re not going to have a productive or enjoyable academic experience.

Understanding the Health Risks of College Students

Because you are a college student, you are also at risk for specific health concerns that come with the territory. As part of your education, it is important for you to learn as much as you can about those health risks that are especially high for college

students—and to lessen them as much as possible. As we have said before, one of the best places on campus to gain valuable information is the health center. Don't wait until you are sick, injured, or worried. Go early and often to seek out information and guidance. You will be glad you did. In addition, the information that follows is a roadmap for this journey to wellness during your college years. The sources listed after each topic will provide additional information. The health center on your campus can also provide you with information on any of the topics you wish to know more about. It is always better to discuss any of these topics with a health care professional. Do not rely just on websites or on your friends for information; not all of it is likely to be accurate or up-to-date.

Alcohol/Drug Abuse

Partying with alcohol and other drugs has long been associated with the culture of college. This aspect of the culture has been memorialized in movies from *Animal House* to *Road Trip*. Many students, away from home for the first time, feel that partying is part of the experience they are supposed to have in college. Also, no parents are there to notice if they come home drunk or if they spend all day in bed with a hangover. Partying and having a good time are meant to be part of the college experience, but you have to use your head and think of the consequences of making alcohol and/or drugs the centerpiece of such experiences. In recent years, binge drinking—drinking five or more drinks in one session or drinking just in order to get drunk—has become a growing concern, particularly among female students. Binge drinking increases the chances of immediate health risks such as injury, unwanted sex, and alcohol poisoning. It also can become a habit that leads to alcohol abuse long after college. The abuse of alcohol and drugs can have serious consequences academically, legally, and in terms of one's personal health. Twenty-five percent of college students have reported lower grades and other academic problems associated with drinking (Wechsler et al., 2002). This same study reports that 5 percent of students have been involved with the police as a result of drinking. On an even more serious note, each year 1,400 college students die from alcohol-related injuries. Half a million are unintentionally injured, and 600,000 are assaulted. Seventy thousand students have been victims of sexual assault or date rape in alcohol-related incidents (Hingson et al., 2002).

Drug and alcohol abuse is one of the leading causes of academic failure among college students nationwide. Students who are more focused on partying than on studying inevitably lose track of what's important. A student may miss a class because of a hangover, then a test. Soon he or she doesn't hand in a paper. Next thing you know, he or she has failed the entire class. Many students who are dismissed from college are sent packing not because they couldn't handle the work but because they never showed what they were capable of as students as a result of their abuse of alcohol and drugs.

The legal consequences of alcohol and drug abuse can follow you around for a lifetime. Drinking under the age of 21 is illegal in the United States. Drug use is illegal. Many colleges have zero-tolerance policies. Get caught once, and you're no longer allowed to live on campus, or you may be expelled from the school outright.

Beware of abusing prescription drugs as well; obtaining prescription drugs with false documents or by similar means is illegal. In some states, students arrested and convicted of underage drinking may be barred from becoming teachers, lawyers, or law enforcement officers. DUI (driving under the influence) convictions can result in serious penalties. And if someone is injured or killed while you are driving under the influence, the legal ramifications—including serious jail time—are likely to be overshadowed by your own feelings of guilt and regret. Drug possession and/or distribution charges can also result in serious jail time. Many states have mandatory sentencing guidelines with long terms in some very unpleasant prisons. Needless to say, not many companies are interested in hiring a person with a drug conviction. And many companies require drug tests for applicants, so even if you've never been caught, you could find yourself out of the running for a job. Also, be aware that if you are caught providing alcohol to minors or drugs to anyone—particularly if there is an injury or death—you could find yourself facing serious legal problems as well.

The health risks of alcohol and drug abuse are well known, but it is up to you, the college student, to make the right choice at some key moments. The peer pressure to drink and, depending on who your friends are, to do drugs, can be enormous. Know who your real friends are. Know where you stand on drinking and drug use before you are confronted with a decision. Know what your limits are before you get into a situation—and then stick to them. You don't want to end up as another sad story or statistic.

Many students don't recognize that they are on the verge of big trouble. Some signs that you may have a problem are the following:

- ▶ When you are under the influence of alcohol or other drugs, doing things that you wouldn't normally do
- ▶ Using drugs or alcohol to loosen up socially
- ▶ Passing out
- ▶ Having blackouts while under the influence of alcohol or drugs
- ▶ Drinking or using drugs to alter your mood—particularly if you are using the substance to make you feel better or to lighten up when you feel depressed
- ▶ Using in order to “get away from it all”
- ▶ Driving while under the influence
- ▶ Having unwanted sex while using
- ▶ Binge drinking—drinking just to get drunk
- ▶ Avoiding friends who don't support your use or abuse and hanging out only with other users
- ▶ Drinking alone

A lot of students who have ended up with problems started drinking or using drugs socially and suddenly found that it had gotten out of their control. If you have exhibited any of the behaviors in the previous list *even one time*, you may have a problem. Often, dealing with a problem requires extra help. If you need some help, visit your health center or campus counseling center right away.

Sources

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STDs

STDs—sexually transmitted diseases—range from the embarrassing and mildly discomforting to lethal. College students are at high risk for contracting such diseases because of the nature of the college experience. College is a time of transition, and many students will have numerous sexual partners during their college years. Combine that with the abuse of alcohol and drugs, and one can easily see how STDs become a major issue among college students. According to the American Social Health Association (www.ashastd.org), nine million new cases of STDs a year occur among people aged 15–24, and by the age of 25, one-half of all sexually active young people get an STD. Certainly, the best way to avoid contracting STDs is to practice abstinence (although in cases of date rape, that of course is not an option). For sexually active students, the best method of preventing STDs is a properly utilized condom. Your college health center will often supply information on condom use and may even provide condoms themselves. Also, you need to know your sex partners—after all, you are, in essence, having sex with everyone *they* have had sex with, particularly if you are having unprotected sex. Don't buy into lines like "I'm only doing this with you because I love you" or "Just this once, let me do it without a condom because it's more comfortable." "Just this once" is all it takes to contract an STD that can last a lifetime. If you are sexually active, get regular check-ups to be sure that you aren't carrying any STDs that you could unknowingly transmit to someone else. Having to tell your boyfriend or girlfriend, "I'm sorry, but I think I gave you genital warts" is not a great way to impress your partner.

One of the biggest spreaders of STDs in college is careless sex under the influence of alcohol or drugs. It goes without saying that substance abuse can affect people's judgment, resulting in a normally sensible student having unprotected sex, sometimes with a partner he or she barely knows. But you must be careful with sex *all the time*. You don't want an embarrassing one-night stand you'd rather forget leave you with a lifetime souvenir in the form of an STD.

Most STDs are contracted through vaginal, oral, or anal sex with someone who has the disease. Many can be spread even when the person is asymptomatic (shows no signs of the disease). Some STDs, such as HIV/AIDS and hepatitis B, can also be spread through the sharing of infected needles. Some of the most common STDs are briefly described in the following table.

STD	Time from Contact to First Symptoms	Symptoms and Diagnosis	Some Complications
Human papilloma virus (HPV) (also called genital warts, Condylomata acuminata) Cause: virus	1–8 months	Itching and irritation; often looks like ordinary skin warts; diagnosed through examination.	Very contagious and may be linked to cervical cancer in women.
Chlamydia Cause: bacterium	1–4 weeks	Generally, there are no symptoms. Sometimes indicated by discharge and/or pain during urination. Diagnosed through examination and screening test.	Can cause pelvic inflammatory disease in women. Can cause sterility in both men and women. Can infect infants during birth.
Herpes Cause: virus	Up to 2 weeks	Blisters on genitals or lips. Diagnosed through herpes culture, Pap smear, examination.	Linked to cervical cancer. Can cause serious problems or death to infants infected during birth.
Gonorrhea (also called dose, clap, drip) Cause: bacterium	2–10 days; sometimes 30 days	Yellowish-green genital discharge, burning during urination; sometimes produces no symptoms in men and women. Diagnosed through screening test and examination.	Can cause pelvic inflammatory disease in women. Can cause sterility in both men and women. Also linked to arthritis and blindness. Can infect infants during birth.
AIDS (acquired immunodeficiency syndrome) Cause: human immunodeficiency virus (HIV)	2–5 years or more	Purplish discolorations on arms and legs, weight loss, extreme fatigue. Diagnosed through blood tests.	Can lead to severe psychiatric problems and death. Can be transmitted from mother to fetus.
Hepatitis B Cause: virus	1–9 months	Sometimes without symptoms. Flu-like symptoms, fatigue, jaundice.	Can cause permanent liver damage.
Syphilis Cause: spirochete	10–90 days; usually within 3 weeks	Appears in two stages: first, painless sore; second, rash, fever, and flu-like symptoms. Diagnosed through examination and blood test.	Can cause brain damage, insanity, paralysis, heart disease, and death. A pregnant woman can pass on the infection.
Trichomonas (also known as trich, TV, vaginitis) Cause: parasite	Varies 1–4 weeks	Discharge, itching of genitals, painful intercourse, usually no symptoms in men. Diagnosed through Pap test, examination, urinalysis, and wet mount preparation.	Can cause gland infections in women and prostatitis in men.

Adapted from Pennsylvania Department of Health [2000], "Common Sexually Transmitted Diseases."

Time Out Tip



Try to get into the habit of never leaving your glass unattended when you are at a party. It is always best to keep it in your hand instead of setting it down, especially if you walk away, even briefly. In just a few minutes, someone else could take a sip from your glass (or even slip something into it). Also, if you lose track of your glass, you may end up drinking from someone else's. All this could lead to anything from a common cold to something much more serious, such as meningitis. Or you could end up ingesting a date rape drug. You just never know—unless you always know where your own glass is.

It is important for female college students to know that the Food and Drug Administration has approved an HPV vaccine (recommended for females aged 9 to 26) to prevent cervical cancer and other diseases in females caused by certain types of HPV. While studies have shown this vaccine to be effective for females, studies are still being done to find out if the vaccine works to prevent HPV infection and diseases in males. If you have not yet received this vaccine, you may want to have a discussion with your family doctor, and/or the health care providers at the health center on campus.

Sources

- “Overview Fact Sheet on Sexually Transmitted Diseases.” American Social Health Association (www.ashastd.org)
- “HPV Vaccine Questions and Answers.” Centers for Disease Control and Prevention (www.cdc.gov)

Meningitis and Other Communicable Diseases

Meningitis, an infection of the tissues and/or fluid around the brain and spinal cord, is a serious concern for college students. According to the journal *Current Health 2*, the number of cases of meningitis has doubled in the last decade among people between the ages of 15 and 24. According to the Centers for Disease Control and Prevention, those most at risk include college freshmen living in dormitories.

College students do need to be aware of meningitis, of behaviors and conditions that increase the risk of contracting it, and what they can do to keep from becoming a victim. Meningitis is a highly contagious disease that thrives in an environment such as a college campus, in which students are living together in close quarters and possibly sharing cups, cigarettes, and other items.

According to the National Meningitis Association, there are two major divisions of meningitis: viral (caused by a virus) and bacterial (caused by bacteria in the throat or nasal passages). Bacterial meningitis is more dangerous—the disease progresses rapidly and can be fatal. Those who recover may suffer long-term effects, including amputations.

It is very important to learn and remember the symptoms of meningitis. They may include severe headache, fever, vomiting, numbness, stiff neck, confusion, seizures, and purple spots on the skin.

There are ways to prevent meningitis, and they begin with washing your hands regularly. Also, be careful not to share any items that have been in, or have been touched by, someone else's mouth. Finally, consider getting vaccinated (many colleges require it). The vaccine—Menomune—may prevent many types of bacterial meningitis. There is no vaccine for viral meningitis. Remember too that a vaccine is not a sure thing. Even if a vaccine has been administered, you still need to take preventive steps and watch out for symptoms.

Another health concern students should be aware of is the community-associated form of methicillin-resistant *Staphylococcus aureus* (MRSA), a staph infection that can lead to potentially fatal infections in bones, joints, heart valves, and lungs.



The student in the photo is being examined in the health center for a possible strep throat. When would you know to go to the health center on campus for help?

This infection usually starts out as small bumps on the skin, which can then turn into painful abscesses. The main risk factors for community-acquired MRSA are being younger, participating in contact sports, sharing athletic equipment, having a weakened immune system, and living in crowded conditions. Students should be aware of skin problems, especially if an infection occurs. MRSA needs to be treated by a doctor, who will prescribe an antibiotic. The most important thing you can do is to prevent this infection in the first place, through washing your hands, not sharing personal items such as towels or razors, keeping all open wounds covered, showering after athletic activity, and getting tested if necessary.

Meningitis and MRSA are two of the most severe communicable diseases to which college students may be exposed, but a number of others, such as strep throat, the common cold, the flu, and mononucleosis, are more common. For more information on these, visit the Student Website.

Sources

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Tobacco Use

In our culture, for many complex reasons, smoking and tobacco use have been associated with rebellion. For one thing, it's considered an adult prerogative, something forbidden to children. For another, the "cool factor" of smoking is reinforced in countless movies and TV shows, where rebellious anti-heroes smoke cigarettes or cigars (often, tobacco companies pay movie producers a fee for these "product placements"). Tobacco companies also carefully market to college students and teens. College is, of course, a time of growth, of moving into adulthood, and of rebellion, in some cases. Thus smoking a cigarette at a party or while sitting on the balcony with friends can seem like the cool thing to do. The problem is that what is little more than a social cigarette with friends can turn into a long-term habit that can be difficult (and, for some, impossible) to break. Some experts have

found that the nicotine in cigarettes, cigars, and other forms of tobacco (dip, snuff, and chewing tobacco) can be more addictive than heroin. And the health consequences can be devastating and deadly. According to the Centers for Disease Control and Prevention, “More deaths are caused each year by tobacco use than by all deaths from human immunodeficiency virus (HIV), illegal drug use, alcohol use, motor vehicle injuries, suicides, and murders combined” (www.cdc.gov/tobacco). For information on the short-term and long-term effects of tobacco use, visit the Student Website.

Considering how powerful an addiction tobacco can be, and the serious and even deadly consequences of long-term use, the best plan is to avoid using tobacco altogether. If you do smoke, consider the options you have to quit:

- ▶ Write down the reasons why you want to quit and keep this list with you (this will help you with your motivation).
- ▶ Set a date that you will quit, tell your friends and family (who can support you), get rid of your tobacco products, and stop smoking on that day.
- ▶ Make an appointment with your doctor to discuss options, including medicines such as nicotine gum, inhalers, lozenges, nasal sprays, or patches, all of which replace the nicotine, help you with withdrawal symptoms, and lessen your cravings. While you can buy some of these products on your own, some require a prescription. Your doctor may also recommend other prescription medicines or even hypnosis to help with your cravings and withdrawal symptoms.
- ▶ Ask your campus health and counseling centers about smoking cessation programs and support groups you can join on campus or in the local area.
- ▶ Identify and then try to avoid your own smoking triggers (such as being with other smokers, drinking alcohol or coffee, or being stressed). You can also seek help from your campus health center in order to reduce the stress in your life.
- ▶ Visit the National Cancer Institute’s [smokefree.gov](http://www.smokefree.gov) website (www.smokefree.gov) for more information and tips to help you along the way.

Sources

www.cdc.gov/tobacco
www.smokefree.gov

Violence/Date Rape

College is meant to be an idyllic time in life, one in which you can focus on learning and making friends and having a good time. Many college campuses fit the idyll, their bucolic campuses filled with ivy-covered buildings and towering trees. Others are more streamlined and urban in appearance and setting. Sadly, however, colleges are not immune to the kinds of things that affect the rest of the world. Crimes—both violent crimes and “crimes against property,” such as theft—exist on college campuses just as they do anywhere else. And this holds true for rural and suburban campuses as much as for urban campuses. In some ways, college students are even more vulnerable because they may live in an illusion of safety.

The campus itself begins to feel like home—safe and familiar—and students often end up taking risks without even knowing it. Yet the recent incidents of gun violence on campuses have and should cause students to be more vigilant. Many campuses have instituted more security measures, including text messaging systems, to alert students to possible danger. You should sign up for such a system if it is available on your campus. You should be careful to lock the door of your room in your residence hall and be aware of people entering your residence hall who may not belong there. You can join or start a crime watch/prevention organization on your campus. Colleges are now required by law to issue a report on the crime rate on their campuses. Look into it to see where your college stands. Whatever you discover about the crime rate on your campus, here are some simple things you can do to reduce your risk of being a victim of violent crime.

- ▶ Walk in pairs or groups if you're out late at night.
- ▶ Call for a safety escort if you must walk alone at night. Nearly all college campuses have this kind of service. If yours doesn't, request that one be created.
- ▶ Be aware. If you have to go to your car in the parking lot, especially at night, check out the area carefully. Have your key ready. Walk to your car with a purpose.
- ▶ Report any suspicious activity to campus police.
- ▶ Avoid situations that can lead to violence. If a party you're attending is getting out of hand, leave before it does. Often, assaults and other types of violence occur in such situations.
- ▶ Stick to well-lighted walkways.
- ▶ Let someone know where you are and when you expect to be back.
- ▶ Carry a mobile phone for emergencies if you are frequently alone on campus.

Doing these things won't completely eliminate any risks, but it will reduce them.

One type of violence that is all too common on college campuses is date rape or acquaintance rape—rape perpetrated by someone the victim knows. Often, alcohol or drug use is involved in such situations. Some additional tips for avoiding date rape follow.

- ▶ Avoid drinking to the point where you lose track of your actions. Watch out for a date who is pushing drinks or drugs on you.
- ▶ Avoid being alone in a place where no one else could reach you or hear you if you shouted for help.
- ▶ If an acquaintance seems to be drunk or high, leave and say that you'll see him or her when he or she is sober.

These situations can't always be avoided, but again you can increase your chances of avoiding them. Date rape drugs, specifically rohypnol, GHB, and Ketamine, have been used to facilitate assaults. In fact, these drugs, while widely referred to as date rape drugs, have also been used to commit other crimes, such as assault or robbery, on both men and women. Not accepting drinks from others, and knowing what you are drinking, can help you avoid being a victim. If you are the victim of a violent attack or a date rape, report it. Too often, students are afraid of doing anything—particularly in the case of date rape—and this leaves the police in a position where they can't do much about it.

Source

www.4woman.gov

Depression/Suicide

Mental health is also a major issue in college. College is a time of significant transition in the lives of young people. For traditional college students, this may mean leaving home and moving on to adulthood. For nontraditional students, it can mean balancing the obligations of college with home life. When the demands and challenges start to seem overwhelming, students can experience feelings of depression. Depression can also be caused by chemical changes that even now aren't always fully understood. Genetics is believed to play a role. Also, substance abuse can lead to depression. Most students feel down at times, but there are some things to watch for when those negative feelings become more serious and turn into what is known as clinical depression.

Here are some warning signs that indicate you might be suffering from depression:

- ▶ Disturbed sleep patterns—either excessive sleep or insomnia
- ▶ Overwhelming feelings of sadness or despair
- ▶ Feelings of euphoria alternating with feelings of gloom
- ▶ Strong and inappropriate emotional reactions
- ▶ Crying for no apparent reason or with little stimulus
- ▶ Feelings of loss of control

There are different levels of clinical depression, ranging from mild to severe. Treatment can range from therapeutic counseling to prescription drugs. If you think you may be suffering from depression, or if you have a friend who might be, seek professional help from your college's counseling center.

Thoughts of depression can also lead a student to commit suicide and/or violent acts against others, the most serious consequences of depression. Depression is clearly one of the most serious health risks to students because obviously, in a completed suicide, the consequences are irreversible. Suicide is a permanent solution to a temporary problem. Even someone who attempts suicide only as a means of calling for help may inadvertently succeed. If you have been contemplating suicide or know someone who has, seek professional help immediately. You cannot help yourself on your own, and you are not qualified to take care of a friend who is entertaining thoughts of suicide. If you want to help someone else, the best thing you can do is get that person to a professional counselor or psychologist. Sometimes, in attempting to help a friend, students get in over their heads, taking on a responsibility that there is no way they can or should assume. One of the clearest warning signs of suicide is that the individual talks about it. Many times, those with suicidal thoughts talk openly about their plans. Other times, they will write about their intentions. Don't assume that someone is just joking. You can't take that chance. Other signs are persistent depression, giving away prized possessions, and even saying goodbye to people the individual knows. Again, don't take a chance—get help even if you only think there might be a problem.

Source

www.nimh.nih.gov

Side Effects of Tattooing and Body Piercing

Walking across many college campuses these days, you are likely to see quite a show of colorful drawings and metalwork. But this artwork isn't the sculptures or student paintings you might expect to see in a public setting. It is artwork in the form of tattooing and body piercing, both of which have become very popular among college students. In almost every college town, or somewhere near a college campus, you can find a place to get a tattoo or pierce a body part. Before you get a tattoo or body piercing, however, there are things you should consider.

- ▶ Tattoos are permanent (unless you consider expensive, difficult, painful, and time-consuming removal procedures—many plastic surgeons now spend a great deal of their time removing unwanted tattoos). What you decide to get tattooed on your body after a night out partying may not look as good to you the next day, or two years down the road.
- ▶ Piercing can sometimes lead to infections. Some parts of the body are riskier than others. The area needs to be kept clean.
- ▶ Getting a tattoo or body piercing can lead to serious infections if an unsterilized needle is used. These infections include hepatitis B and C and HIV.
- ▶ Make sure the shop you go to is licensed. Don't let anybody tattoo or pierce you in an unsanitary environment.
- ▶ Make sure the shop has an autoclave to sterilize equipment.
- ▶ Make sure the person doing your tattoo or piercing opens a new set of tools in front of you.
- ▶ Tattoo ink should be fresh and new for each customer. Be sure you do not get used ink.

For more information, visit the Student Website.

Source

www.nlm.nih.gov/medlineplus/piercingandtattoos.html

Eating Disorders

In our culture, there is an enormous amount of pressure on people to be thin and fit. Tanned, trim, and toned bodies scream out at college students from nearly every magazine cover. Female models wearing bikinis smile happily. Nowadays, young men are feeling the pressure, too, as male models with “six-pack” abs appear on more and more magazine covers. The problem with these images is that they imply for many students that no other look is acceptable. Each person has a natural weight that has as much to do with genetics and bone structure as with diet. Everybody knows someone who can “eat anything she wants” without gaining a pound. Others struggle to keep their weight under control even when on a strict diet. In order to achieve what society considers acceptable, many students resort to unhealthy or potentially dangerous dietary supplements such as ephedrine. Other students develop eating disorders such as anorexia, bulimia, and binge-eating

disorder (BED). **Anorexia** is characterized by extreme weight loss or starvation accompanied by obsession with body weight and its relation to self-image. This disorder can lead to serious complications and even death. **Bulimia** is characterized by bingeing followed by purging through vomiting or the use of laxatives. Finally, **binge-eating disorder** is characterized by bingeing followed by extreme guilt. People who are binge eaters can range from very thin to obese.

The “freshman fifteen” is not a myth. Many students do experience weight gain during their first year of college. Because of changes in diet, irregular eating habits, and impromptu socializing (those midnight pizza parties), students are susceptible to putting on a few pounds. Nevertheless, the best way to get a healthy body weight is to first figure out what that weight is (it’s probably not what the models on the magazine covers weigh). Then, if you’re overweight, develop a sensible diet (you might want to work with a dietitian or physician), and lose weight slowly and safely. Rapid weight loss can cause major health problems that can affect your heart and digestive systems—and it rarely results in a long-term weight loss. Typically, those kinds of dieters quickly gain back the weight they have lost.

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The Role of History in Our Lives: Connections and Careers

Just as what you have done in the past, and what you do now, will affect your health in the future, so does history as a discipline help us to understand where we have come from and better prepare us for the future. History is all around us, in our families, in our hometowns, in the clothes we wear and the food we eat, and in the technology we use every day. Understanding how people, places, and things came to be deepens our understanding and appreciation of them. Knowing about your parents’ past, for instance, can help you to appreciate how they got to where they are today, and can help you better understand the values they have instilled in you or how they raised you. Knowing how the cell phone that you cannot live without came to be can help you better appreciate it (before, people had to use pay phones!) and better understand how it works. Your campus also has its own unique history. When was the college founded, and who were the people whose names appear on buildings across campus? Why does your college hold on to certain traditions? Where and why did they start? As a student, you have now joined the many people who have come before you in the rich history of your campus. You are part of something much larger than yourself. Take advantage of the history of your college by learning as much as you can. You may be surprised at how much more a part of your campus you feel after learning more about its past, which has shaped your present experience and will help guide the future of the college.

If you have a true love of history as a discipline, and would like to follow a career path involving history, there are many opportunities. Many students believe that the only career path for a history major is teaching. While teaching history at

the high school or college level is a very rewarding choice, you have many other choices as well. Think about what you have learned or will learn in your history courses. Think about the skills you have or will hone, such as research and writing skills. Think about gaining expertise in a certain area, such as American military history or Italian architecture. Opportunities for using such expertise may range from corporate careers to museum careers to careers in the field of restoration. History is all around us, and so are careers for those who love history. Just as a good historian would do, it is up to you to do the research.

Increasing Your Yield

Readings for Practical Application

In this chapter, you have learned about understanding health risks and staying healthy in college. The readings that follow will help you learn more about your personal health and responsibilities while you are reading about another important discipline that nearly all college students encounter. That discipline is history. Just as you learn from your current experiences, so do you learn from your own past. Likewise, you will be exposed to the past in reading history texts, learning about the career paths and contributions of those who have gone before you, and learning about past health concerns that have shaped the steps we now take to stay healthy.

In the Textbook Case reading you will read about health issues at battlefields and prison camps during the American Civil War. In this reading, titled “Life and Death at the Front,” you will learn about the conditions that led to the diseases that were widespread during the war. You will also learn about some important people who worked to combat these diseases and other health issues the soldiers faced. It is a story of real people and real conditions from which we can still learn lessons today. Before you read this excerpt, you will find some helpful tips for reading history texts. Apply these tips to the reading to help arm yourself with good reading strategies for your future history courses.

If you are contemplating majoring in history, you may be wondering what the future holds for you in terms of possible jobs and career paths.

Although teaching may seem an obvious path, it is certainly not the only one, as you will learn in this chapter’s Life After College reading, “Who Do I Think I Am?” The author of this article learned that sometimes, exciting opportunities lead us down some very unexpected but fascinating career paths. In this reading, you will learn about several interesting options for history majors.

These readings expand on what was covered in this chapter and give you a chance to apply the strategies you have learned to reading and understanding college-level material. The readings delve into subjects of intrinsic interest and offer some practice in reading text material in the discipline of history.

Reading and Study Tips: History

Unique Features and Comprehension Strategies

Unique Feature of Textbooks in History

History texts tell a story.

Strategies for Comprehension

- Approach your history texts as you would a good novel.
- Keep in mind that you are reading about real people and real events. You will remember better when you get to know them and their stories better.
- Don’t just memorize. Use the critical thinking skills discussed in Chapter 5 to look at why things happened and what the consequences were.

Unique Features and Comprehension Strategies *(continued)***Unique Feature of Textbooks in History****Strategies for Comprehension**

Many history texts provide an outline of each chapter.

- Read the chapter outline first to get a sense of where the chapter begins, where it will go, and where it will end.
- Use the outline to create questions you can answer as you read the chapter.
- After you have finished reading, go back to the outline and create your own timeline of events (this will help you remember better for a test).

Guide questions often appear in history textbooks.

- Use these questions to guide your own reading.
- Annotate after you read each section.
- Use your annotations to create study cards. Being able to use your own words to summarize what you have read helps you to know whether or not you understand the material.

History texts include maps and photographs.

- These help you visualize what you are reading.
- View them in conjunction with reading, not in place of it.
- Use the visuals to help you study for tests (such as re-creating maps on your own to see how much you remember and understand).

History texts lend themselves to subjective tests.

- Use the guide questions and your annotations to help you develop some possible essay questions of your own.
- Practice outlining or writing out answers to these questions.
- Exchange answers with other students in a study group to get feedback and to help you review.

Reading 1: A Textbook Case

The following excerpt from a textbook chapter is included here because it is a clear example of how history tells a story. In this case, it is a story that reveals many of the health issues associated with the American Civil War. Every facet of life has a history, and medicine is no exception. What we know today comes from what we have learned in the past, and what we learn from the past has a great impact on our health. This is a story with real people, real events, and real health consequences. Take note of specific people, health terms, places, and dates. When you read this excerpt, keep in mind some of the strategies recommended in the Reading and Study Tips.

BEFORE YOU READ

What have you learned in your prior schooling about the health issues of the Civil War? If you do not know about this subject, what health issues do you think were unique to this war and time period? How can what happened during the Civil War be applied today?

Life and Death at the Front

C. Berkin, C. Miller, R. Cherny, and J. Gormly

Many volunteers on both sides in the Civil War had romantic notions about military service. Most were disappointed. Life as a common soldier was anything but glorious. Letters and diaries written by soldiers most frequently tell of long periods of boredom in overcrowded camps punctuated by furious spells of dangerous action.

Though life in camp was tedious, it could be nearly as dangerous as time spent on the battlefield. Problems with supplying safe drinking water and disposing of waste constantly plagued military leaders faced with providing basic services for large numbers of people, often on short notice. Diseases such as dysentery and typhoid fever frequently swept through unsanitary camps. And in the overcrowded conditions that often prevailed, smallpox and other contagious diseases passed rapidly from person to person. At times, as many as a quarter of the uninjured people in camps were disabled by one or another of these ailments.

While the carnage on Civil War battlefields was almost unimaginable, conditions in field hospitals were more unimaginable still. Medicine and bandages were in short supply and the medical expertise of attending nurses and physicians was often lacking. As shown here, crowded and unsanitary conditions were the rule. Infection often proved more deadly than bayonets and bullets. *Library of Congress.*

Lacking in resources, organization, and expertise, the South did little to upgrade camp conditions. In the North, however, women drew on the organizational skills they had gained as antebellum reformers and created voluntary organizations to address the problem. At the local level, women like Mary Livermore and Jane Hoge created small relief societies designed to aid soldiers and their families. Gradually these merged into regional organizations that would take the lead in raising money and implementing large-scale public health efforts, both in the army camps and at home. Mental health advocate and reformer Dorothea Dix was also one of these crusaders. In June 1861, President Lincoln responded to their concerns by creating the United States Sanitary Commission, a government agency responsible for advising the military on public health issues and investigating sanitary problems. Gradually enfolded many of the local and regional societies into its structure, “The Sanitary,” as it was called, put hundreds of nurses into the field, providing much-needed relief for overburdened military doctors. Even with this official organization in place, many women continued to labor as volunteer nurses in the camps and in hospitals behind the lines.



Nurses on both sides showed bravery and devotion. Often working under fire at the front and with almost no medical supplies, these volunteers nursed sick and wounded soldiers, watched as they died not only from their wounds but also from infection and disease, and offered as much comfort and help as they could. Clara Barton, a famous northern nurse known as the “Angel of the Battlefield,” recalled “speaking to and feeding with my own hands each soldier” as she attempted to nurse them back to health. Hospitals were unsanitary, overflowing, and underfunded.

The numbers of wounded who filled the hospital tents was unprecedented, largely because of technological innovations that had taken place during the antebellum period. New rifled muskets had many times the range of the old smooth-bore weapons used during earlier wars—the effective range of the Springfield rifle used by many Union soldiers was 400 yards, and a stray bullet could still kill a man at 1,000 yards. Waterproof cartridges, perfected by gunsmith Samuel Colt, made these weapons much less prone to misfire and much easier to reload. And at closer range, the revolver, also perfected by Colt, could fire six shots without any reloading. Rifled artillery also added to the casualty count, as did exploding artillery shells, which sent deadly shrapnel ripping through lines of men.

Many surgeons at the front lines could do little more than amputate limbs to save lives. Hospitals, understaffed and lacking supplies and medicines, frequently became breeding grounds for disease. The war exacted a tremendous emotional toll on everyone, even on those who escaped physical injury. As one veteran put it, soldiers had seen “so many new forms of death” and “so many frightful and novel kinds of mutilation.”

Conditions were even worse in prison camps. Throughout much of the war, an agreement provided for prisoner exchanges, but that did not prevent overcrowding and unsanitary conditions. And as the war dragged on, the exchange system stopped working effectively. In part the program collapsed because of the enormity of the task: moving and accounting for the large numbers of prisoners presented a serious organizational problem. Another contributing factor, though, was the refusal by Confederate officials to exchange African American prisoners of war—those who were not slaughtered like the men at Fort Pillow were enslaved. Also, late in the war, Union commanders suspended all prisoner exchanges in hopes of depriving the South of much-needed replacement soldiers.

The most notorious of the Civil War prison camps was Andersonville, in northern Georgia, where thousands of Union captives languished in an open stockade with only a small creek for water and virtually no sanitary facilities. Without enough food to feed its own armies and civilian population, the Confederacy could allocate little food for its overcrowded prison camps. Designed to house 10,000 men, Andersonville held more than 33,000 prisoners during the summer of 1864. As many as 100 men died of disease and malnutrition within its walls each day; estimates put the death toll at that one prison at nearly 14,000 over the course of the war.

Even death itself came to be redefined, as 8 percent of the white male population in the United States between the ages of 13 and 43 died in such a short time and in such grisly ways. People at the front reported being numbed by the horror.

One army surgeon reported, “I pass over the putrefying bodies of the dead . . . and feel as . . . unconcerned as though they were two hundred pigs.” Nor was distance any insulation from the horrors of death. The new art of photography brought graphic images of the gruesome carnage directly into the nation’s parlors. “Death does not seem half so terrible as it did long ago,” one Texas woman reported. “We have grown used to it.”

AFTER YOU READ

What did you learn from this textbook excerpt that you did not know before? How does this passage relate to what you learned about important health issues in this chapter? How can what historians have learned about health issues during the Civil War be applied today?

Reading 2: Life After College

This reading is included to show you the varied opportunities history majors have in the work force. Remember what you read in Chapter 2 about the growing global marketplace. Perhaps you will work in another country or work for a company with offices in other countries. The writer of this article studied and works in England, but his story is a familiar one: our career paths are often winding and surprising. His own career history reveals unexpected opportunities he experienced along the way. His experiences can help you see how doors can open for you as well.

BEFORE YOU READ

What do you think you can do with a history degree besides teach? Try to give some specific examples and reasons why a history degree would prepare someone for those specific careers. Also, try to think of a few ways that technology can actually help historians, combining the new with the old.

Who Do I Think I Am?

N. Barrat

Nick Barratt, presenter of television programs that take people back to the archives, explains how he found his own way into the dusty vaults.

I would be hard pressed to say that I had a great natural aptitude for—or indeed interest in—history at school; I come from a family of mathematicians. My uncle was a Professor of Math at Illinois University, Chicago, while my father was a bank manager, so an ability to work with figures ran in the blood. Initially, I inherited this latent interest, although history was a subject I quietly enjoyed. I remember one history teacher in particular at primary school, a rather terrifying figure called Mr. Hobson, who would ensure you learned all the facts, dates and names for fear of incurring his wrath if you forgot anything.

David Starkey has appeared in print recently favoring this approach to education, but from my own childhood experience—and my work in the field of “personal heritage”—I reject this approach to the subject. The pursuit of history should be driven by curiosity, a thirst for knowledge, a willingness to explore and the ability to take part. Facts are clearly an important framework around which to base argument, but without the ability to weigh up the evidence, consider the sources and form our own opinions, history becomes the subject of academic debate. History in the twenty-first century needs to be vibrant, inclusive and relevant to survive.

My time at college was largely uneventful, and I guess I would have followed in the footsteps of so many of my contemporaries and retrained to become a lawyer, teacher or accountant had it not been for a couple of chance happenings. I studied at King’s College, London, where Dr. David Carpenter lectured on thirteenth-century British history. I went to one of his lectures on Henry III, and for the first time I discovered a period of the past that I wanted to know more about. Having spent the first

two years of the degree coasting along, I signed up to more medieval classes and was fortunate to gain a place on Dr. Carpenter’s Special Subject course. After a frantic year of study—mainly to make up for lost time!—I obtained a First Class BA (Hons), and decided I wanted to continue with history as a career. The second chance occurrence was the introduction of a new module on the course—computing for history. This was back in the early 1990s, when personal computers were barely affordable and very few people were computer literate. So I was one of the first to see how important computing could be in a historical context, and with my mathematical background I wanted to use the new technology to analyze source material that were of a numerical basis. Initially, I thought about the Domesday Book, but a project was already under way. Dr. Carpenter then suggested that I edit a pipe roll—the record of one year’s royal accounts—as part of a doctoral thesis, and I readily accepted. Little did I realize how much hard work it would be—three years struggling to interpret the text with rusty Latin in unfamiliar handwriting—with the added onus of editing five further texts created by the Exchequer of Receipt. Yet this immersion in primary source material formed a vital lesson in how documents link together, as well as showing me how medieval institutions worked.

This experience was instrumental in obtaining a job at the Public Record Office (PRO)—now The National Archives—in 1996 once I’d obtained my Doctorate. Although I had wanted to pursue a career in academia at the time, working at the PRO gave me the perfect chance to continue working in my field, as well as gaining a wider experience of archives. I’ve continued to write articles for publication in journals such as the *English Historical Review*, and contributed papers for conference proceeding volumes, on the history of English state finance and the evolution of the Exchequer from the reign of Henry II to Edward I—and still try to

give at least one academic paper each year, though time constraints running the business and filming makes it more of a struggle.

Therefore the move from academic historian to where I am today came rather suddenly, and was not the result of any pre-determined decision or career path. It was a simple chance encounter at the PRO one evening while on an enquiry desk. A researcher from the BBC show *House Detectives* happened to ask me to help them trace the history of a property that they were featuring on the program. I assisted with the help of two colleagues, and I was invited onto the show to talk through the documents we'd found. The next week, I was offered a job as a specialist researcher on the third series and jumped at the chance to explore a different working environment.

Life in the BBC was certainly very different to that in the archives—more creative, but also far less secure. Contracts were shorted—often only a month or so at a time—so I hit upon the idea of starting up a historical research agency, which was called Sticks, just in case I found myself out of work. I was able to move from contract to contract at the BBC for over four years, working on exciting projects such as *Invasion*, *Omnibus* and finally the BAFTA-nominated *Seven Wonders of the Industrial World*. On leaving the BBC in 2002, I secured several freelance commissions—for example, two series of *Wreck Detectives* for Channel 4—but it was the chance to work on *Who Do You Think You Are?* that transformed things for me.

Initially, I was approached to work on the show on the recommendation of a former colleague on *Wreck Detectives*. By this stage, I had started to hire other researchers to deal with the volume of work coming into Sticks Research Agency and so it was fairly easy to put together a team to handle the complexity and logistics of the genealogy required to assemble the family trees necessary to support the ten episodes the production company, Wall to Wall, was commissioned to make. Yet it was the offer of appearing in the end segment of the show with Adrian Chiles, as well as presenting the BBCi strand for digital viewers, that opened the door to an on-screen role. This is something that at first did

not come naturally, but once the initial nerves had worn off, the work in front of the camera became great fun. Off the back of *Who Do You Think You Are?* I've co-presented *History Mysteries* for BBC Two, and teamed up again with Jonathan Foyle for *Hidden House History* for The History Channel. A recent project is *So You Think You're Royal* with Saul David, which is due to appear on Sky One in 2007.

Yet fun though the onscreen work may be, there is still an important message that needs to be imparted and the media is the perfect vehicle for that. Although I'm traditionally associated with family history, I would argue that this is an unhelpful description of the type of research that people are undertaking up and down the country in archives, libraries and online. Personal heritage is a far better way of reflecting the breadth of subject matter that people are investigating—for example, once you've found out who you are related to, you can look at where they lived, the job they undertook, how their lives were affected by the community in which they lived and the times through which they lived.

This is part of the democratization of history, brought about by the increased level of access through the Internet. Broadcast media plays a vital role, showing people more process in historical research than ever before. We live in changing times, and one of the great challenges for the twenty-first century is to harness the new technology to preserve our past, at a time when it actually poses a threat to the present. How many times do we write letters to friends and family? Instead we use phones, emails and texts—instantly disposable means of communication. Yet it is upon these written sources that we derive so much of our knowledge of the past.

In March 2007, I'll be involved in a major initiative that will give everyone a chance to archive their own personal heritage, and contribute to a greater understanding of our shared past. The National Memorybank will be launched, allowing people to upload memories, research, images of personal memorabilia, moving images and photographs, plus oral testimony across a wide range of subjects. Previous ventures, such as the BBC project *People's War*, have shown the importance of

capturing the voice of “ordinary” people, rather than the views of the great and the good, the politicians and generals who are said to have shaped history. Returning to David Starkey’s comments, a factual framework is important, but history has to

be relevant and accessible to survive in the twenty-first century and the information age.

www.house-detectives.co.uk
www.stick.org.uk

AFTER YOU READ

After reading this article, how do you feel about the role of happenstance in determining someone’s career path? How can you open yourself up to opportunities such as the ones the author had? Do you agree with his opinion that history needs to be accessible and relevant? How can you make history accessible and relevant, and what role does technology play in historical research? Can you see yourself in any of the careers Nick Barrat describes? Why or why not?

Here are some other careers related to history for you to investigate:

- Archivist
- Biographer
- Museum curator
- Research assistant
- Park ranger
- Corporate historian
- Medical historian
- History professor
- Intelligence analyst
- Restoration specialist
- Information specialist
- History editor
- Foreign Service officer

And there are many more!

Compounding Your Interest: Further Readings

American Historical Association
www.historians.org

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Career Resources for History Majors

[Careers.cua.edu/explore/historyresources.htm](http://careers.cua.edu/explore/historyresources.htm)

Lambert, S. E., & Degalan, J. (2007). *Great Jobs for History Majors*. New York: McGraw-Hill.

Museum Employment Resource Center

www.museum-employment.com

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9 The Bottom Line: The Math and the Method Behind Managing Your Money in College



Tuition. Books. Food. Rent. Entertainment. Car payments. Insurance. Clothes. As you know, these things don't come cheaply. College is expensive. You are aware of this already, even if you've only been in college for a little while. But effectively managing what little money you have now can make an enormous difference in your finances both today and for years to come. And understanding how to manage your money can be a very valuable learning experience in itself, an experience that is not as difficult as it may sound. The next few years in college can provide all the experiences you need to be ready to handle money when it really counts. Likewise, if you have already had a full-time job or currently have one and are going to school part-time, you may have more experience with money management, but now you should also be concerned about managing your money with the

This chapter will cover the following topics:

- ▶ Managing Your Finances
- ▶ Keeping a Budget
- ▶ Working Versus Not Working
- ▶ Student Loan Debt
- ▶ Scholarships
- ▶ Credit Card Debt
- ▶ Pitfalls to Avoid: Life Lessons from Those Who Have Been There
- ▶ The Role of Math in Our Lives: Connections and Careers

Think About It



Answer the following questions in the space provided.

What are some ways in which you can save money as a college student (not to put money away as savings, but to spend less up front)? _____

Share your answers with your classmates in small groups—you may learn some good tips from each other!

additional financial burden of college. Of course, as all the previous chapters in this text have shown, college isn't just about money—either having it or making it. But understanding money's role and managing it effectively will relieve you of a lot of pressure over the next few years. Thus, instead of seeing money management as a burden, see it as an opportunity. To that end, this chapter will also focus on math: how to read and study math textbooks, how we can apply math to our everyday lives, and what career opportunities there are for those who love math. Math and money go hand in hand. While there certainly is a lot more to money management than math, if you are not able to apply solid math skills to making, spending, and saving money, you will actually not be managing your money at all. Also, math skills will help you in other courses you may encounter in college, such as courses involving research and statistics, art classes (think about geometry, for instance), science courses, and business courses, such as accounting. Thinking about math not just as an academic subject to be loved or hated, but also as knowledge that can be applied to so many areas of our lives, will help you to see just how important expanding your math skills in college can be.

FIRST THINGS FIRST

"A penny saved is a penny earned." Ben Franklin's words about savings may be difficult to grasp when you feel like you don't have much money to save. On the other hand, you also don't want to spend what you haven't already earned and simply trust that someday you will be able to pay the bills. Most college students take on some debt. In fact, according to a report by the Project on Student Debt cited in *The Chronicle of Higher Education*, the average student-loan debt for the Class of 2006 was about \$21,100. And this does not include other debt college students may incur, such as credit card debt. You need to know what you are getting into and how much debt is reasonable for you. You also need to decide whether earning some money now, instead of just borrowing, might be a worthwhile use of your time. The best thing to do now is to look ahead: Where do you want to be financially five years from now? How much money do you really need? Can you afford to work while you are in college? Can you afford *not* to work? What debt will you feel comfortable having when you leave school? What do you plan to do to pay back your debts? What can you do now to reduce debt? Invest in a simple financial plan now in order to prepare for your future. Remember, money is not an end in itself in college, but it is a means to an end. The end in college is opening yourself up to the world of new ideas and new experiences. Managing your own finances will be one of those new experiences. You just have to discover ways to do it responsibly and creatively. In the words of Ken Hakuta, "Lack of money is no obstacle. Lack of an idea is an obstacle."



DIY: Do-It-Yourself Activity

Make a budget covering your current financial situation. First, figure out what income you have right now (include money you earn from jobs as well as what you get from parents, relatives, scholarships, grants, and student loans). Then figure out what you are spending. Include only actual expenses (in other words, if your room is paid for by your parents, don't include that). When you add it all together, you will get a better sense of where you are spending your money, and it may also be clearer how you can save some money.

Managing Your Finances

Learning to manage your finances is an important part of your education. This may well be the first time in your life that you have to manage your finances entirely on your own. If you learn how to handle your money, bills, and loans now, you will be better prepared to handle your money when you get your first job after college. But what does managing your finances mean? Just what should you be managing now? Consider the following:

- ▶ Any income (from part-time or full-time jobs, from savings, from parents or other relatives, from loans)
- ▶ Loans
- ▶ Bills (car payments, credit cards, rent, and the like)
- ▶ Expenditures
- ▶ Future planned expenditures

Consider the case of Melinda, a junior business major at a large urban university with a heavy course load, a busy social schedule, and a part-time job. Melinda always knew she wanted to own a restaurant someday. She wanted to be the one in charge—responsible for the décor, the theme, the menu, and the staff. She thought it made sense, then, to work in a restaurant while in college in order to learn the business from the inside out. Accordingly, in her sophomore year she started waitressing at an upscale restaurant about half an hour from campus. She began working just on the weekends, but soon she was working five nights a week and even assisting the manager on busy nights. Although the money was good, the rest of her life was not. She was carrying fifteen credits and also was involved in her sorority. She felt she was always on the run. When she got her mail, for instance, she just threw it in the back seat of her car on her way to work. The bills would sit in the back seat with the junk mail. She always cashed every paycheck and never got around to opening a savings account. With all that cash on hand, it was easy to spend it—money for take-out instead of cooking in her apartment, money to pay someone to type her papers because she never had any time. Soon, her car payments were late and she never seemed to have money when she needed

to buy something, even though she worked all the time. She knew something needed to change. What needed to change was that Melinda needed to learn how to manage her finances.

Managing your finances is all about planning and organization. Think about what you learned about time management in Chapter 2. The same principles apply. Just as a lack of time management may result in lower grades, a lack of financial management may result in a lack of money, a poor credit rating, and a lot of stress.

Here are some very important things to consider in coming up with a sound plan to manage your finances:

Never spend money you do not have or money that you will need for something more important later. You should always know how much money you have in your wallet, in your savings account, and in your checking account. If you don't have money now, don't assume you will always be able to get it. It may feel great to take a spur-of-the-moment road trip or buy a new pair of sneakers when you go to the mall, but things happen. Cars break down and need repair. Class projects require materials that need to be purchased. Books need to be bought for classes.

Be careful what you buy on credit. Always try to pay off your credit card balances each month. Too many students end up with very large credit card debts that are difficult to pay down or even pay at all. Sometimes students are unable to make credit card payments when the money is tight. This could damage your credit rating, which could seriously affect your long-term financial picture. Late payment of any bill is usually reported to a credit reporting bureau. If you still are able to get credit down the road, you may have to take out a loan with a higher interest rate than someone with an unblemished record of paying on time. (For example, someone with good credit may be able to get a loan at an interest rate of 4.25 percent, whereas someone with poor credit may have to pay 6.50 percent. Over time, the person with poor credit will end up spending more hard-earned money on interest.)

Sometimes it is better to wait to make a major purchase. Let's say that you see a new stereo system on sale that you have been hoping to buy. If you buy now on credit because you don't have the money up-front, it may cost you more when all is said and done, because of the interest you have to pay, than if you had waited a couple of months and bought the stereo with cash.

Pay down. Always pay down high-interest loans first; this results in a "virtual savings."

Open up a checking and savings account at a bank on or near campus. The danger of not having a checking or savings account is that any money you make may be too readily spent if you have cash lying around. A checking account is particularly convenient because you can put any money you earn into the account and then write checks to pay bills. At some banks you can use your checking account to do online banking, which is very convenient. You should learn how to

manage a checking account while you have a smaller amount of money to deal with and fewer bills, in preparation for your first “real” paying job. Also, having a savings account will encourage you to put some money away on a regular basis to watch your balance grow. And if you run into an emergency or need to make a major purchase, you will have somewhere to go for money other than your credit card. Finally, if you have a checking account on or near campus, you will be able to cash or deposit checks instead of having to wait until you go home.

Learn to balance your checkbook. Before you think about balancing a checkbook, you of course need to open a checking account. When you decide to do this, look for a bank that offers free checking. When checking accounts are not free, you often need to maintain a certain minimum balance (\$1,000 or more). College students may have difficulty doing this. Once you start writing checks, you will receive a statement in the mail each month. You need to use this statement to balance your checkbook. Examine your statement to see that all your deposits went in, that your checks cleared for the proper amount (checks that you wrote recently may not have been cashed in time to appear on your statement), that ATM withdrawals are accounted for, and, most important, that you still have money in your account so you don’t start bouncing checks (an expensive mistake). Watch for small fees that banks sometimes charge (for using another bank’s ATM machine, for instance); you must be sure to deduct these from your balance as well.

Pare down expenses. When you pare an apple, you cut it down to the core. When you pare down expenses, you’re essentially doing the same thing: cutting down to the core of what’s most important. If you’re running low on money, there are really two basic things you can do: Earn more money (which may not be feasible when you’re in college) or spend less money. Cutting back on expenses is often the smartest decision because earning more money often means working longer hours, which can interfere with your course work. To cut back on expenses, first you have to know what you’re spending your money on. Check out the Teamwork Activity later in this chapter to see how to get started on paring down your expenses.

Use coupons. You might think of coupon clipping as a dull waste of time: more trouble than it’s worth. But let’s say you wanted to buy a Sunday paper that costs \$1.50. You can make that paper pay for itself and then some if you clip out the coupons inside and use them to buy things you were going to need to buy anyway. If it takes you ten minutes to cut out coupons, and you’ve saved \$10 by using them, that’s like earning about \$60 an hour. That’s much more than you’re likely to make while you’re working in college.

Consider renter’s insurance. If you rent an apartment in college or after you graduate, consider purchasing renter’s insurance. Many renters mistakenly assume that the insurance that the landlord has on the property also covers the renter’s possessions. This can be a costly mistake in the event of a fire, flooding, or even a theft. Landlords are responsible for covering only the property itself; you are responsible for what you have in your apartment. This type of insurance is available at a very low cost and is well worth the investment.

Keeping a Budget

Sometimes handling your money can be a problem. It could be a problem because you have very little money, or it could be a problem because you don't know how to spend what you have. Think back to Chapter 5 and what you learned about solving problems in the real world. A good critical thinker identifies a problem, examines possible solutions, and chooses the best solution. Keeping a budget can sometimes be a solution in itself to the problem of how to spend the money you have. It can also alert you to possible problems and possible solutions if you are spending the money in the wrong way. In any case, it is a good idea to learn how to keep a budget. It may seem like a lot of effort in the beginning, but the longer you do it, the more like second nature it will become. And your finances will be in much better shape! You will save time and money in the long run if you keep a budget. Here are some things to keep in mind:

Budgets rarely work out exactly. Estimate as best as you can, and then make adjustments as necessary.

Keep the budget simple to start. Don't worry about remembering every little thing. Be basic at first. Think major bills and monthly expenses. Keep a monthly budget and try to remember to record as much as you can throughout the month. At the end of each month, assess how you have done in terms of accuracy and the time spent on the budget.



The students in this photo are trying to balance a budget for a campus organization in which they are involved. What other campus opportunities can provide you with real-world money management experience? In which ones might you be interested and why?

Determine your monthly income.

Determine how much money you will make or have each month. Here are some likely sources:

- ▶ Job earnings
- ▶ Money from home (parents, other relatives)
- ▶ Savings

Define major categories for your budget. Here are some of the possible major categories:

- ▶ Fixed expenses (rent, electric bill, magazines, phone bill, insurance)
- ▶ Short-term savings goals (new TV, video game, etc.)
- ▶ Long-term savings goals (new car, trip abroad, etc.)

Figure out the average cost per month for fixed expenses. The amount due each month for certain things, such as cell phone charges and electricity, vary from month to month. Car payments and

rent do not. Do the best you can to determine what the average cost for each budget category will be. You may also have to base certain costs on what you *have* to spend. Certain bills you can make lower; you can reduce a cell phone bill or clothing bill by talking or spending less, for example. After the first month or two of keeping your budget, try to figure out whether you will have enough to pay the bills each month. Here are some examples:

- ▶ Rent: \$400 a month \div 2 (if you have a roommate)
- ▶ Electric bill: \$42 a month
- ▶ Phone bill: \$38 a month

Determine short-term savings goals. A short-term savings goal may be to save enough to buy a new stereo system or an expensive item of clothing. If you know the cost, and you don't have the cash on hand, you need to adjust your spending elsewhere and save for the item. If you needed to save \$480 in four months, you would need to figure out how you could put aside \$120 each month.

Determine long-term savings goals. A spring break trip to Jamaica or a new car might be an example of a long-term savings goal. Even if you do not plan to make such major purchases during college, it is wise to set aside some long-term savings. If you do have such a specific goal in mind, you will have to figure out how much you will need, how long it will take you to save it, and where you can spend less or earn more. Make this saving plan a part of your monthly budget. A good rule of thumb for long-term savings is to put aside 10 percent of each paycheck.

Consider any money left over. Money left over can be used as “fun” money to spend for things you want instead of what you need to pay for each month. Examples include eating out, CD purchases, and going to the movies.

Keep track of what you actually spend on each item or category every month. Doing so will help you determine where your money is going. You may be surprised.

There can be some variation from month to month, but overall, the amount of money *going out* should not exceed the amount of money *coming in*.

Don't take on new fixed expenses (bills that you must pay each month). Doing so will require cutting back somewhere else (for example, on “fun” money), earning more money (which you may not have enough time to do), or borrowing more money (which is not a good idea at this time of your life).

Working Versus Not Working

Getting a good job is a goal of most college students. After all, you are aspiring to careers open to those who hold a college degree. But what about working now, while you are in college? Is it a good idea? That is a good question, and one with different answers for different people. You have to take the time to discover what is best for you.

Time Out Tip



If you have debts from more than one source, check your interest rates. You may want to consolidate high-interest debts into one lower-interest debt. This can save you a substantial amount of money each month. Finally, if you have a chance to pay off some of your debts, be sure to pay off the higher-interest debts first.

The types of jobs open to college students are as varied as the students themselves.

Some of the quickest and easiest jobs to find are on-campus jobs. Many **on-campus** jobs are earmarked for students who qualify financially for work-study programs. But not all jobs are. If you are not sure, ask. There are advantages to holding an on-campus job. For one thing, on-campus jobs are convenient because they are close by; you can work an hour here and there between classes and put in hours during the day when other students might be wasting time. On-campus employers are used to working with students (and they probably were also students themselves). They understand that you may need to study or write a paper one day instead of working. They also may let you change your hours if you have activities or projects with which you are involved. On-campus jobs are also a good way to get to know faculty, administrators, and staff who can share their expertise and also provide excellent references. On the other hand, on-campus jobs may be limited in the amount of money they pay. The compensation is typically fixed, and many work-study jobs pay minimum wage. The number of hours you are allowed to work in a week or semester may also be limited.

As an alternative, many students choose to pursue **off-campus** jobs. These opportunities may be more varied and often pay more money, but you must choose carefully. Many employers may not be sensitive to the time constraints of your student schedule. What starts out as a 10-hour-a-week job may turn into a 30-hour job very quickly. It is sometimes hard to say no to the money. But your school work may suffer as a result.

The question remains: Should you work and, if so, how much? One mistake a lot of students make is working so much that they fail a class. Depending on the tuition at their college or university, they may have spent more on the class than they earned at the job that caused them to fail it! This would hardly be a worthwhile investment. The bottom line is that classes come first. And you have to know how many hours you need for studying before you can determine what is left over for work.

Remember the time management formula you learned about in Chapter 2: you should expect to spend 2 hours studying outside of class for every hour you spend in class. If you are carrying 15 credits, you must reserve at least 30 hours to study in a week, in addition to the 15 hours you are in class. That equals 45 hours. If you want to get the recommended 8 hours of sleep a night, that is an additional 56 hours. You are now up to 101 hours out of a week that consists of 168 hours total. You are left with 67 hours to eat, relax, exercise, participate in campus activities, and, if you have time, work. That's less than 10 hours each day if you consider weekends.

A first-year student with a full-time course load should try to work no more than 10 hours a week. It is possible to work more hours a week if you are going to school only part-time. It's too difficult to try to do both. College is still too new, and there are a lot of adjustments you need to make. In addition, you don't want to be working so much that you miss out on other aspects of the total college experience. Remember the benefits of campus involvement that we discussed in Chapter 7. Those benefits are often worth much more than earning a few dollars.

If you are still wondering whether to work, it may be better not to, at least for a while. Many campus jobs can be obtained in the middle of a semester or during the spring semester, after you have seen what you are able to handle in the fall. If you are taking some difficult courses and may need extra help, working would not be the best option. Also, if you have heavy reading courses and are not a quick reader, or if you are enrolled in labs or studio courses that may demand extra hours of studying outside of class, you may want to hold off on working for that semester. Overall, it is better to start out small. Try a few hours a week to see whether you are still able to handle the work as well.

Then see how it goes financially. If you just need to put gas in the car or pay your way on the weekends to have a little fun, a few hours a week should suffice. If you need to work to pay for books or tuition, you may want to consider a reduced course load.

If you are working full-time or part-time in order to support yourself or a family, you may want to consider taking classes part-time. If you do not do so, both your work and your courses could suffer. If you feel that not taking a full course load would delay your getting a better job, consider taking courses in the summer as well. Some students just do not have a choice in terms of working. If you need to work, no matter how many hours, you need to find the right balance for yourself. You may find that your past work experience has made you very good at time management. Use those skills to keep up with your coursework while still holding down a job.

For more information on the advantages and disadvantages of working while in school, and whether to hold full-time or part-time employment in the summer, go to the website at www.cengage.com/success/hartman.

Student Loan Debt

Taking out student loans is a way of life for most college students, and, indeed, student loans are one of the most effective methods of paying for college. Many loans delay both payments and accrual of interest until after graduation, and they are typically at a low interest rate.

The good news about student loans is that they make paying for college a whole lot easier. Most people don't have the \$10,000 or more that it costs each year to go to college. The bad news? Well, for starters, student loans are still loans—you must pay them back (or ruin your credit and face other consequences if you don't). Borrowing money is a good way to finance your education, but you need to borrow judiciously and always keep in mind the fact that you are going to have to pay loans back after you graduate. With this in mind, you want to “borrow smart” and avoid borrowing more than you need. As we have noted, the average college student graduates with \$21,000 of loan debt. That's just an average, which means that a substantial number of students are borrowing significantly more than that. Think about it. Even \$21,000 is a lot of debt. And students who drop out of college with loan debt still have to pay it back, even though their career prospects are hampered by the lack of a college degree.

Just to give you an idea, a \$20,000 student loan (with an interest rate of 8%), spread out over 10 years, will cost you approximately \$243 a month. Let's say you make \$30,000 a year right out of college. That may be a little high or a little low, depending on what field you go into, but it will serve as our average, entry-level salary for a college graduate. That's \$2,500 a month. Take out \$800 for taxes, retirement, and miscellaneous, and now you're down to \$1,700 a month. Rent: \$600 (it could be a *lot* more, depending on where you live): Down to \$1,100. Do you want a car? \$400 a month with principal and interest. You have \$700 left. Now subtract the \$243 for the student loan—\$457. That's only \$15 a day for food and other miscellaneous expenses. Double the amount of your loan on that salary (\$486 a month in payments), and you may have to live at home because you can't afford your own apartment. On the other hand, if you're careful about how much you borrow, you will reap the benefits when it comes time to repay. You will not have as high a monthly payment on top of new expenses that will arise later in your life. Also, be realistic about what you can expect to make in your field. A computer science major may make as much as \$50,000 a year right out of college. A psychology major may expect to make about \$25,000 a year. By all means, stay with the major you love, but try not to take on a debt load that is out of proportion to what you can expect to earn in the first few years after graduation.

Scholarships

One way to avoid too many student loans is to look into scholarships. You might think that you needed to get a scholarship before entering college, but that is not true. There are plenty of scholarships available to students already in college, and many of them are right on your own campus. Check with the financial aid office. Don't hold back because you think only the class valedictorian gets a scholarship. There are literally thousands and thousands of scholarships out there, many of them in surprising places. Check out your parents' places of work: They might have a scholarship. Local civic groups, scholarships for paper deliverers, local businesses, churches—the list goes on and on. Some of these scholarships are not well advertised, either, and some have few (and sometimes no) applicants. Do your homework, and you can find that some or all of your student loan debt is replaced by scholarship. Even a \$100 scholarship is \$100 less that you don't have to pay back. And it looks good on your résumé. Your best source of scholarship information is your campus financial aid office. One warning: Beware of scholarship search services that charge you a fee. Some may be good, but often they are doing little more than supplying information that you can track down on your own—at no cost at all.

Credit Card Debt

The average college student now graduates with more than \$2,000 in credit card debt (Manning, 1999). Some students exceed that average by thousands (and even tens of thousands) of dollars. If you can beat the average by even a few

What I Know Now

Tanya • Future Leisure and Sports Studies Major • Age 21 • Tamaqua, PA

“I can’t believe that six months has changed my entire life!” Tanya, a former business major, moaned to her counselor as she tried to figure out a plan to get back into school. What Tanya was talking about was a bad relationship that lasted for six months and from which she has yet to recover. Tanya met Rick at a dance club in a town close to campus. He swept her off her feet, and she was engaged to him a month later, even though she was only a junior in college. What she didn’t know when she met Rick, however, was that he was a manipulator. Tanya had been very lonely after the death of her mother and had never had a serious boyfriend. Rick seemed to be the answer to her problems. But in fact, he was the cause of many problems to come. In the beginning, Rick showered Tanya with the attention she craved, but what he lacked was a job. He kept asking Tanya for money, and she bought him presents to keep him around. He didn’t have a car, so she always lent him hers. He had no money for rent. She bought him a keyboard and a computer on her credit cards. She even bought him a cell phone and he ran up the bill. She soon discovered he had no interest in getting married and that he was actually seeing someone else on the side. After six months of this, she was so depressed she stopped going to class. She flunked all her classes, lost her financial aid, and had to drop out of school—and she was up to \$10,000 in debt on her credit cards. Tanya is now working full-time at a sports equipment shop and part-time as a waitress to pay off all her bills. She has learned a tough but valuable lesson. She has thrown away her credit cards and is working to return to school next year. “I wasted a lot of money and time on Rick. I only wish I had known then what I know now. No one else should go through what I went through.”

thousand dollars, you can avoid delaying your ability to move to the next stages of your life: buying a car, getting married and having children, buying a house, and so on. The debt trap is as big a problem for college students as it has become for the rest of America.

As a college student, you will be inundated with credit card offers. You are a prime target for credit card issuers because they all want you to sign up for their card before you sign up for someone else’s. Besides receiving flyers, you will probably see tables set up on campus enticing you with low interest rates and free gifts. Just be aware that the low interest rates often expire after just a few months or may apply only to balances that you transfer from other cards. And you will pay for those “free gifts” over and over again if you carry a balance. As a college student, you are also less experienced financially than other credit card users and are therefore more likely to carry a balance rather than paying it off each month. Here are some tips for credit card use:

- ▶ If you think you need a credit card, get just one. That one should be a major credit card that can be used anywhere.
- ▶ Steer clear of smaller credit cards such as those offered by stores and catalogues.
- ▶ Look for the lowest interest rate and *no annual fees*. Be sure that interest rates are not temporary, introductory offers.

- ▶ Keep a low credit line. Resist offers to increase it.
- ▶ Use your card only for emergencies or for items you know you can pay off at the end of the month.
- ▶ Don't fall into the trap of paying only the minimum on your credit cards, because if you do this you will end up paying enormous amounts of interest. Pay off the entire balance each month. Consistently following this advice throughout your life will be one of the greatest money-saving moves you ever make. Incidentally, don't fall for the card issuer's occasional offers of a "payment holiday," meaning that there is no minimum payment that month. This is an attempt to fool you into thinking it will cost you nothing to carry your whole balance that month. But because interest continues to be assessed, you wind up paying more—which of course was the company's goal in the first place. Don't be fooled. *Pay off the entire balance each month.* If you always do this—but *only* if you always do this and never make a late payment—you will be beating the credit card companies at their own game and borrowing money, for short periods of time, at no cost.
- ▶ Don't use your card for impulse purchases.
- ▶ Don't get in the habit of using it every day or for minor purchases—you will lose track of how much you owe.



The student on the left is shopping for a new laptop. Since she does not have the money up-front, she is planning on using her credit card. What should she do before she purchases the laptop with her credit card? What should she do once she gets the bill? What are some alternatives to using a credit card that she could consider?

- ▶ Never allow friends to borrow money by putting a purchase on your credit card with a promise to repay you—if they can't afford it at the time of purchase, they may not be able to afford to pay you back before the bill is due, if at all.
- ▶ Be sure to avoid late payments. Most credit cards charge you a penalty fee when your payment is late. Also, take into account the amount of time your payment will take to get to the credit card company through the mail. Most will charge you a late fee even if you claim to have mailed it "in time." What matters is when it arrives. Send your check at least a week before the payment must reach its destination.
- ▶ Avoid taking out cash advances. Most credit card companies charge you a fee for this service, and interest begins accruing from the moment you take the money, whereas for regular purchases, you usually pay no interest until the bill is due.
- ▶ Keep track of where your credit card is—if it gets lost or is stolen, call the issuer immediately to cancel it.

Assumptions: Graduated from college with \$10,000 credit card debt.

No new purchases are made on this credit card.

Can afford to make a monthly payment of \$200 after other living expenses.

Monthly Pmt: 200

Interest Rate: 12.74% **Daily Periodic Rate:** 0.03490%

Note: Accrued interest is based upon 30 days/month.

MONTH	BALANCE	MINIMUM PMT	BALANCE AFTER PAYMENT	ACCRUED INTEREST	NEW BALANCE
1	10,000	200	9,800	103	9,903
2	9,903	200	9,703	102	9,804
3	9,804	200	9,604	101	9,705
4	9,705	200	9,505	100	9,604
5	9,604	200	9,404	98	9,503
6	9,503	200	9,303	97	9,400
7	9,400	200	9,200	96	9,297
8	9,297	200	9,097	95	9,192
9	9,192	200	8,992	94	9,086
10	9,086	200	8,886	93	8,979
11	8,979	200	8,779	92	8,871
12	8,871	200	8,671	91	8,762
13	8,762	200	8,562	90	8,651
14	8,651	200	8,451	88	8,540
15	8,540	200	8,340	87	8,427
16	8,427	200	8,227	86	8,313
17	8,313	200	8,113	85	8,198
18	8,198	200	7,998	84	8,082
19	8,082	200	7,882	83	7,965
20	7,965	200	7,765	81	7,846
21	7,846	200	7,646	80	7,726
22	7,726	200	7,526	79	7,605
23	7,605	200	7,405	78	7,482
24	7,482	200	7,282	76	7,359
25	7,359	200	7,159	75	7,234
26	7,234	200	7,034	74	7,107
27	7,107	200	6,907	72	6,979
28	6,979	200	6,779	71	6,850

MONTH	BALANCE	MINIMUM PMT	BALANCE AFTER PAYMENT	ACCRUED INTEREST	NEW BALANCE
29	6,850	200	6,650	70	6,720
30	6,720	200	6,520	68	6,588
31	6,588	200	6,388	67	6,455
32	6,455	200	6,255	66	6,321
33	6,321	200	6,121	64	6,185
34	6,185	200	5,985	63	6,048
35	6,048	200	5,848	61	5,909
36	5,909	200	5,709	60	5,769
37	5,769	200	5,569	58	5,627
38	5,627	200	5,427	57	5,484
39	5,484	200	5,284	55	5,339
40	5,339	200	5,139	54	5,193
41	5,193	200	4,993	52	5,045
42	5,045	200	4,845	51	4,896
43	4,896	200	4,696	49	4,745
44	4,745	200	4,545	48	4,593
45	4,593	200	4,393	46	4,439
46	4,439	200	4,239	44	4,283
47	4,283	200	4,083	43	4,126
48	4,126	200	3,926	41	3,967
49	3,967	200	3,767	39	3,806
50	3,806	200	3,606	38	3,644
51	3,644	200	3,444	36	3,480
52	3,480	200	3,280	34	3,314
53	3,314	200	3,114	33	3,147
54	3,147	200	2,947	31	2,978
55	2,978	200	2,778	29	2,807
56	2,807	200	2,607	27	2,634
57	2,634	200	2,434	25	2,460
58	2,460	200	2,260	24	2,283
59	2,283	200	2,083	22	2,105
60	2,105	200	1,905	20	1,925
61	1,925	200	1,725	18	1,743
62	1,743	200	1,543	16	1,559
63	1,559	200	1,359	14	1,374
64	1,374	200	1,174	12	1,186

(continued)

Lifeline



Are you having trouble paying for college? Are your monthly bills overwhelming you? You may not realize it, but your campus financial aid office is available for more than just filling out the FAFSA (Free Application for Federal Student Aid) and checking out your aid package. The financial aid office can also give you advice on alternative sources of funding and deferred-payment plans, and it can direct you to work-study positions on campus. If you feel you're drowning in bills, be sure to seek help at the financial aid office before things go too far. This office can also make sure that you have enough credits to continue receiving financial aid—generally 24 credits earned in a calendar year.

MONTH	BALANCE	MINIMUM PMT	BALANCE AFTER PAYMENT	ACCRUED INTEREST	NEW BALANCE
65	1,186	200	986	10	996
66	996	200	796	8	805
67	805	200	605	6	611
68	611	200	411	4	415
69	415	200	215	2	218
70	218	200	18	0	18
71	18	18	0	0	0
72 (6 Years)	0	0	0	0	0
Total Paid		14,018	Interest Paid	4,018	

The problem with credit card debt is that, because of the relatively high interest rates, you can pay the minimum without making much of a dent in the amount you owe. The preceding chart details exactly how the debt trap works. As you can see, this chart details the process of paying down a credit card debt over a 72-month period.

As you can see from this chart, getting out from under your debt on even a relatively low-interest credit card can take quite a lot of time, and you end up paying an extra \$4018 in interest payments—money that you could have used for something else. Of course, if you have a higher-interest credit card at 17 percent or 18 percent, or even more than 20 percent, you are going to be paying more and more interest and less and less principal. Also, this chart assumes that you haven't made any additional purchases, something that is hard to do once you have gotten into the habit of charging it and forgetting it.

The best way to handle credit cards is to keep in mind that they are not a source of free money. In fact, using credit cards without paying off the balance every month is one of the most expensive ways to borrow money. Although they can be convenient, credit cards can also become a burden if used improperly.

Pitfalls to Avoid: Life Lessons from Those Who Have Been There

Even though your first year in college is full of new experiences, you don't have to learn everything for yourself. You can pick up a lot from the experiences of others who have already been where you are, and you may be able to avoid making the same mistakes that others have. On the next page are a few examples of students who experienced some common pitfalls and how they solved their problems.

Pitfall

Joe became known as the pizza man on his floor because he always organized the late-night pizza orders. He would pay the delivery person up-front to make it easier and then try to collect the money from everyone who ate the pizza.

Belinda the borrower always took out the maximum amount on her student loans. After her tuition, room and board, and books were paid for, she ended up with extra money. She thought this was great because she was able to go out at night and buy clothes when her friends were unable to do so.

Max the minimum payer ran up a huge credit card bill by the end of his freshman year in college. During the first week on campus, he was enticed to get a credit card when a company had a booth in the student center and offered free gifts. He used this card to buy purchases he would not have made if he had had only cash—CDs, clothes, concert tickets, and so on.

Consequence

Joe ended up treating many of his friends to pizza. That's because some of them never got around to paying him back, or promised they would and never did, or gave him less money than they should have. By the end of the semester, he was out of his spending money.

By the time Belinda graduated from college, she was more than \$20,000 in debt and was concerned because she wanted to go to graduate school. She realized that she did not want to take out any more loans because the last time she did so, she spent extra money unwisely.

The problem was not only that Max ran up a huge credit card debt but also that he paid only the minimum balance each month, never getting ahead and paying way too much interest.

Solution

The next semester, Joe made sure everyone put the money in a “pizza fund” before he placed the order. Only those who paid ate. Now Joe has more money of his own to spend on other things.

Belinda applied for and received a graduate assistantship that paid her tuition and gave her a small living stipend. She decided to force herself to live within her means and not take out any more loans. She cooked at home and purchased items only when she had the cash on hand and found a good sale.

Max cut up his credit card and now has a part-time job to earn some extra spending money and pay off his credit card balance. He now pays as much as he can each month and will soon be free of credit card debt.

The Role of Math in Our Lives: Connections and Careers

Just as it is important to learn how to manage your money in college and beyond, so is it important to improve your math skills. As you learned in this chapter, money and math go hand in hand. But math plays many other roles in our lives. Let's say you and your roommate decide to rearrange your room. Perhaps you draw up a plan of what it will look like. You try to figure out what will fit where. You may even figure out how to build a loft for one of your beds. Geometry plays an important role in this activity, as does understanding how to calculate square footage and measure accurately. On a more complex level, you encounter math in the media on a daily basis. What do those statistics on the rates of certain cancers in geographical areas really mean? What do the polling numbers really say in terms of predicting the results of an election? Do the benefits associated with a new medication or medical procedure outweigh the risks? On a daily basis, you use math when you follow a recipe or watch a basketball game. Math is an integral part of our everyday lives. In college, you will do many of the aforementioned things, but you will also take courses in which you will need to interpret charts

and graphs, collect and interpret research data, and conduct experiments. It is important to understand and appreciate both the academic and practical connections to the study of math.

For those students who are interested in majoring in math, there are many career opportunities. Teaching, for instance, is a good choice for many people who love math and can instill that love in their own students, whether at the elementary, high school, or college level. You may or may not have heard of actuarial science, but regardless of what you know about it, you may want to find out more about this interesting field, which applies math and statistics to finance and insurance. Speaking of finance, this is a field with many opportunities of its own for people who are very good in math and can apply their skills to predicting what might happen in the financial markets and to helping people and businesses handle their money in the most productive ways. Another interesting field for math people is cryptology, which is the practice and study of hiding information. People in this field may work in national security or the banking industry, for example. Computer science is also a field closely related to math, and people with excellent math skills work as computer engineers in businesses and government agencies. Of course, many careers require solid math skills, but you can see that if you really love math, many career opportunities await you.

Increasing Your Yield

Readings for Practical Application

This chapter has examined the financial aspects of being successful in college. You have learned about the merits (and the pitfalls) of working, student loans, and credit cards. You have learned how to manage your finances and keep a budget—and about some things to avoid.

Perhaps you are now convinced that managing your money in college and beyond can be as important an investment as preparing academically for your future career. The readings that follow are also a two-fold investment.

Because of the subject—money—this chapter has also been about numbers. Accordingly, the Textbook Case reading comes from a math textbook. After examining the strategies recommended for reading a math text, you can apply them to the selection.

The “Life After College” reading in this chapter, “Working Your Degree: Applied Math Becomes More Popular Among Students,” covers career options for math majors. You might be surprised at some of the possibilities.

These readings will give you the opportunity to explore the unique and challenging discipline of mathematics while also building upon the financial theme of this chapter.

Reading and Study Tips: Math

Unique Features and Comprehension Strategies

Unique Feature of Textbooks in Math

Strategies for Comprehension

Math textbooks require interactive learning.

- Although you do need to memorize some basic rules, math is not about memorization.
- Ask yourself why you are doing what you are doing in each problem, and then apply the formulas you learned to new problems.

Math textbooks provide many examples.

- Do not skip any of the steps provided in the examples, and do them in the order shown.
- Try to come up with similar examples to test your understanding of the concept.
- Make up flash cards of examples or homework problems. As preparation for tests, mix up the cards and try to do the problems out of the context in which you originally learned them.

Math textbooks are filled with numbers and formulas.

- Don't be overwhelmed.
- Know the rules and understand them. Be able to apply them.
- Ask the “why” questions in class when you do not understand.

Unique Features and Comprehension Strategies *(continued)*

Unique Feature of Textbooks in Math

Strategies for Comprehension

Math textbooks tend to be very graphic.

- Review all charts and graphs.
- Pay attention to what stands out in the text.
- You may want to reproduce a chart or graph to review for a test.

Math textbooks teach concepts that build upon one another.

- Make it a point to keep up with the reading and go to class. Get a tutor if necessary before you fall behind.
- Consistently review concepts from previous chapters and apply them as necessary to new material.

Reading 1: A Textbook Case

This reading is included here because almost every college student will take at least one math course in his or her college career. Math is a discipline that goes beyond the college classroom. Everyday life requires math, as you have seen in this chapter's discussions of managing money and debt. Keeping a budget definitely requires basic math skills. Many careers also require math—and not just those careers typically associated with math. Teachers, for instance, need basic math skills to compute students' grades. Artists need to use geometry in designing and executing their works. Psychologists use math in preparing and evaluating tests used in diagnosis and therapy. As a critical thinker, facility in math enables you to solve concrete problems and relate them to your own life. As you read this selection, apply the strategies you learned for reading math textbooks. When you are finished reading, think about how what you have learned is related to other areas of your life.

BEFORE YOU READ

How many great-grandchildren would you have if you had two children and each of their two children also had two children each? As a group, figure out how you can best solve this problem. Then try to solve it. (Show your work in the space below.)

Exponents and Scientific Notation

T. Pirnot

EXPONENTS AND SCIENTIFIC NOTATION

In this section, we will be able to answer the question that we posed at the very beginning of this chapter. If we were able to unravel all the atoms in your body, as though you were a great big ball of thread and then stretch out all those atoms in a straight line, how far would it reach? To be able to represent both the tiny size of an atom as well as the vastness of the size of the universe, we have to represent real numbers in a new way.

All exponent rules are based on the definition of exponents.

In order to write such very large and very small numbers efficiently, we will use exponential notation. Some examples of exponential notation are, $10^3 = 10 \cdot 10 \cdot 10 = 1,000$ and $2^5 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 32$. In general, we have the following definition.

DEFINITION

If a is any real number and n is a counting number, then

$$a^n = \underbrace{a \cdot a \cdot a \cdot \dots \cdot a}_{\substack{\text{product} \\ \text{of } n \text{ } a\text{s}}}$$

The number a is called the **base**, and the number n is called the **exponent**.

This simple definition is the basis for all the rules for exponents that we will discuss in this section.

EXAMPLE 1 Evaluating Expressions with Exponents

Write each of the following expressions in another way using the definition of exponents then evaluate the expression.

- a) $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$ b) 2^4 c) 0^6
 d) $(-2)^4$ e) -2^4 f) 5^1

SOLUTION: a) $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 = 3^5 = 243$.


b) $2^4 = 2 \cdot 2 \cdot 2 \cdot 2 = 16$.

c) $0^6 = 0 \cdot 0 \cdot 0 \cdot 0 \cdot 0 \cdot 0 = 0$.

d) $(-2)^4 = (-2) \cdot (-2) \cdot (-2) \cdot (-2) = +16$.

e) This is not the same as d). Notice that here the exponent, 4, takes precedence over the negative sign. So first we multiply the four 2s and then insert the negative sign. Thus,

$$-2^4 = -2 \cdot 2 \cdot 2 \cdot 2 = -16$$

f) $5^1 = 5$. 

Suppose in a physics class you encountered the expression $x^3 \cdot x^4$. If you did not know the rules for working with exponents that we are going to introduce, you could simplify this expression by using only the definition of exponents. You could reason as follows:

$$x^3 \cdot x^4 = \underbrace{(x \cdot x \cdot x)}_{3 \text{ xs}} \cdot \underbrace{(x \cdot x \cdot x \cdot x)}_{4 \text{ xs}} = \underbrace{x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x}_{7 \text{ xs}} = x^7$$

Thus, $x^3 \cdot x^4 = x^7$.

By thinking of a simple example such as this, you can remember the following rule for rewriting certain products.

Product Rule for Exponents

If x is a real number and m and n are natural numbers, then

$$x^m x^n = x^{m+n}$$


Notice in this rule that all the bases are the same. This rule would not apply to an expression such as $x^3 y^5$ because the bases are different.

EXAMPLE 2 Applying the Product Rule for Exponents

Use the product rule for exponents to rewrite each of the following expressions, if possible.

a) $2^5 \cdot 2^9$ b) $3^2 \cdot 5^4$

SOLUTION: a) $2^5 \cdot 2^9 = 2^{5+9} = 2^{14}$

b) We cannot apply the product rule here. The product $3^2 \cdot 5^4$ contains two 3s and four 5s as factors and we cannot combine these six factors into a single expression. We could, however, rewrite this as $3 \cdot 3 \cdot 5 \cdot 5 \cdot 5 \cdot 5 = 5,625$. 

Suppose that you wished to simplify the expression $(y^3)^4$ but did not recall the rule for doing so. Again you could use the definition of exponents and your common sense to do the simplification. Think of $(y^3)^4$ as (y^3) multiplied by itself 4 times. That is,

$$(y^3)^4 = (y^3)(y^3)(y^3)(y^3).$$

But now you can write each (y^3) as $y \cdot y \cdot y$. So we have

$$(y^3)^4 = (y \cdot y \cdot y)(y \cdot y \cdot y)(y \cdot y \cdot y)(y \cdot y \cdot y) = y^{12}.$$

We see that in this example, we multiplied the exponents to write the simplification. This leads us to the following rule for exponent expressions which are raised to powers.

Power Rule for Exponents

If x is a real number and m and n are natural numbers, then

$$(x^m)^n = x^{m \cdot n}$$

EXAMPLE 3 Applying the Power Rule for Exponents

Use the power rule for exponents to simplify each of the following.

a) $(2^3)^2$ b) $((-2)^3)^4$

SOLUTION: a) $(2^3)^2 = 2^{3 \cdot 2} = 2^6 = 64.$

b) $((-2)^3)^4 = (-2)^{3 \cdot 4} = (-2)^{12} = 4,096.$



PROBLEM SOLVING

The Three Way Principle in Section 1.1 suggests that a good way to remember what exponent rule to use in a particular situation is to think of simple examples. Then use the definition of exponents to recall how we derived the rule. For example, to remember whether you add or multiply exponents in simplifying the expression $(a^8)^7$, think what you would do with $(x^3)^2$. If you write this expression as $x^3 \cdot x^3 = x \cdot x \cdot x \cdot x \cdot x = x^6$, then you recall that you are supposed to multiply exponents in this situation.

We often have to divide expressions containing exponents. For example, suppose that we wish to simplify the expression $\frac{x^7}{x^3}$. Using the definition of exponents, we can rewrite the numerator and denominator as follows:

$$\frac{x^7}{x^3} = \frac{x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x}{x \cdot x \cdot x} = \frac{x \cdot x \cdot x \cdot x}{1} = x \cdot x \cdot x \cdot x = x^4$$

This example leads us to the following quotient rule for exponents.

Quotient Rule for Exponents

If x is a nonzero real number and both m and n are natural numbers, then

$$\frac{x^m}{x^n} = x^{m-n}$$

This rule is fine provided m is greater than n . However, if $m = n$, then $m - n = 0$, and we have not defined what x^0 means. Also, if $m < n$, then we have $m - n < 0$, and we have not discussed what it means to raise x to a negative power. We will take care of these definitions before we give examples of the quotient rule.

DEFINITIONS

If $a \neq 0$, then $a^0 = 1$, and if n is a natural number, then $a^{-n} = \frac{1}{a^n}$.


These definitions tell us that $3^0 = 1$ and $4^{-2} = \frac{1}{4^2} = \frac{1}{16}$.

EXAMPLE 4 Applying the Quotient Rule for Exponents

Use the quotient rule to simplify the following expressions and write your answer as a single number.

a) $\frac{3^7}{3^5}$ b) $\frac{7^5}{7^8}$ c) $\frac{17^9}{17^9}$

SOLUTION: a) $\frac{3^7}{3^5} = 3^{7-5} = 3^2 = 9$

b) $\frac{7^5}{7^8} = 7^{5-8} = 7^{-3} = \frac{1}{7^3} = \frac{1}{343}$ c) $\frac{17^9}{17^9} = 17^0 = 1$ 

AFTER YOU READ

How many zeros are there in the numerical form of a million? In a billion? How would you write them using scientific notation? Do you enjoy figuring out this type of problem? What might this say about your interests if you do enjoy it?

Reading 2: Life After College

This reading is included to invite you to think about the many opportunities in the world of math. The article points out that few of those who major in math actually become mathematicians. There are many opportunities in business, education, computer science, and beyond. As a critical thinker, you are aware that math majors and those interested in math do not think about math in a vacuum. This article discusses applied mathematics: math for the real world. You may find that it gives you a whole new perspective on math!

BEFORE YOU READ

What jobs do you think math majors would be qualified to do? Why? What jobs do you think math majors would enjoy? Why? Share your answers in small groups.

Working Your Degree: Applied Mathematics

S. K. Schwartz

There are those among us for whom math just makes *sense*.

They are the followers of Pythagoras. The ones who breezed through calculus. And more likely than not, the ones who can tell you how long it takes train A to catch train B—factoring in wind velocity, speed and freight loads.

They are the math majors of the world.

And despite their shrinking ranks, insiders say the undergraduate degree in mathematics remains a solid springboard for career advancement—especially when coupled with courses in computer science or economics.

“There are options out there,” said Tom Rishel, associate director of programs and services at the

Mathematical Association of America in Washington. “It’s not just a question of being a teacher or actuary. There are all these other possibilities.”

How They Fare

Mathematicians, as defined by the Bureau of Labor Statistics, use mathematical theory, computational techniques, algorithms and the latest computer technology to solve economic, engineering, physics and business problems.

They fall into one of two categories. The first, the BLS notes in its latest *Occupational Outlook* survey, is the theoretical mathematician, who develops new principles and recognizes previously unknown relationships between existing principles of math.

The second group is referred to as applied mathematicians, who use techniques such as mathematical modeling to solve practical problems in business, government and life. That can include helping companies streamline their manufacturing process or analyzing the efficacy of a new pharmaceutical product, the BLS notes.

For example, airlines frequently hire math majors, particularly those with a background in economics, to determine the amount of fuel required to fly their routes and project passenger demand and maintenance costs to produce flight schedules, *The College Majors Handbook*, published by JIST Works Inc., reports.

The number of students who major in general math is shrinking. Those who do often go on for a higher degree and eventually teach. Where such a program is offered, however, applied math is becoming the degree of choice for students looking to enter the corporate workforce.

“I would recommend an applied degree,” said Carla Martin, a 1995 graduate of Virginia Polytechnic Institute and State University. “But either way I would recommend taking a few courses in computer science. When I was interviewing for jobs, the most common question I heard was, ‘Do you know how to program?’”

She said companies aren’t necessarily looking for a second major in compsci, or even a minor in it; they *are* looking for students who know the basics of programming.

Martin, who is back in school at Cornell University pursuing her Ph.D. to become a professor, had been working as a consultant for four years with PricewaterhouseCoopers, helping clients crunch their marketing numbers.

The Job Market

Few who major in math emerge from college to actually become mathematicians.

Job market data reveal [that] most these days specialize in computer science, engineering and economics, finding work in brokerage firms, investment banks, and software or consulting firms. Many ultimately, in fact, receive a double major in such concentrations, helping to enhance their marketability and earnings potential.

“Many of our students double major in economics or computer information systems, and if you talk to students across the country I think you’ll find more and more the phenomenon of double majors,” said Joseph Jerome, a math professor at Northwestern University. “With just an undergraduate degree in math, I’m afraid, the pickings are slim unless you get an advanced degree.”

Just one-third of graduates from an applied mathematics, operations research or statistics program consider their job to be closely related to their major, the *Handbook* reveals. The majority work as top- and mid-level managers, actuaries, computer systems analysts, computer programmers, [or] computer engineers, and in insurance, securities, real estate and business services.

About 8 percent of applied math majors end up in education, while 19 percent of general math majors teach.

“Bachelor’s and master’s degree holders with extensive training in mathematics and a related discipline, such as computer science, economics, engineering or operations research, should have good employment opportunities in related occupations,” the BLS wrote in its latest report.

For math majors, whether they specialized in general or applied math, the Bureau notes some of the most common positions they land are:

- ▶ Statisticians, who analyze and interpret numerical data, including “sampling,” where they obtain information about a population or group of people by surveying a small cross-section of them.
- ▶ Actuaries, who are used by insurance companies, pension funds and other organizations to determine risk levels in a transaction, make price decisions and formulate investment strategies. . . .
- ▶ Operations research analysts, who work with an organization’s management team to define a performance or inventory problem. The analyst then breaks the problem down into its basic parts and analyzes each part to determine how best to increase efficiency and lower costs. Some of the larger employers of operations research analysts include telecommunications firms, air carriers,

computer and data processing firms, financial institutions and the federal government.

Consulting Grows

Mathematicians held about 14,000 jobs in 1998; [in addition, there were] another 20,000 . . . faculty positions at colleges and universities, the American Mathematical Society reports.

According to Rishel of the MAA, consulting work for companies like PricewaterhouseCoopers and William M. Mercer also has become an increasingly popular career path for math majors with a bachelor's degree. Such firms seek out math-minded recruits, he said, to gather and analyze statistical data that help clients decide where to market their products, and how to do it cost effectively.

He also notes [that] the federal government, specifically the National Security Agency, hires large numbers of math grads for cryptography work, which involves encoding and decoding data. Telemetry work also is in demand, which essentially just means you pick signals out of the airwaves and translate them to determine who is using which part of the airwaves and for what.

"The NSA is one of the largest employers of math majors in the United States, but they don't talk about what they do," Rishel notes. "They just take them, and that's the last we ever hear about it."

The job market for all three leading occupations for math majors—actuaries, statisticians and operations research analysts—is expected to grow less than 10 percent through 2008, the BLS reports.

But jobs that involve computer programming are projected to grow 21 to 35 percent over the next eight years.

Paycheck Check-up

Salaries in the field can be quite high.

The *Handbook* reports that annual average salaries of general math majors with a bachelor's degree is \$56,500, 17 percent higher than the average for all college grads. The average for applied mathematics graduates is closer to \$53,900, which is 12 percent higher than the overall average.

More specifically, the BLS reports that operational research analysts earned roughly \$49,000 in 1998, the most recent year for which data are available. The top 10 percent earned roughly \$88,000 and the lowest 10 percent earned just under \$30,000.

Median annual earnings of actuaries that same year were \$66,000, with the top 10 percent earning \$124,000 and the bottom 10 percent earning \$36,000.

Lastly, the BLS reports statisticians brought in roughly \$49,000, with the top 10 percent earning \$87,000 and the lower 10 percent earning \$28,000.

But it's not just about the money.

"Math majors do fairly well [on income], but it's a lot of hard work and you have to be willing to work hard," said Stephen Chase, associate chairman and director of undergraduate studies at Cornell University. "They should be able to handle abstractions and substantial doses of theory."

He notes, too, that there's no single personality type best suited for such a degree.

"The standard assumption is that math majors have a shy, retiring personality, and there are certainly a share of those, but we have many types of personalities and many people with a wide variety of interests outside of math."

AFTER YOU READ

What are the most common jobs for math majors, according to this article? Are you surprised by any of them? Why or why not? What types of activities can students participate in now to improve their math skills whether or not they wish to major in math?

Here are some other careers related to math for you to investigate:

- Actuary
- Investment manager
- Risk analyst
- Demographer
- Economist
- Software developer
- Transportation planner
- Market research analyst
- Computer consultant
- Statistician
- Urban planner
- Data processing manager
- Air traffic controller
- Cryptographer

And there are many more!

Compounding Your Interest: Further Readings

The Association for Women in Mathematics

www.awm-math.org

Be an Actuary

www.beanactuary.org

Burnett, R. (2002). *Careers for Numbers Crunchers and Other Quantitative Types*.

2nd ed. New York: McGraw-Hill.

The Mathematical Association of America

www.maa.org

Mathematical Sciences Career Information

www.ams.org/careers

National Council of Teachers of Mathematics

www.nctm.org

Sterrett, A. (2002). *101 Careers in Mathematics*. 2nd ed. Washington, DC:

Mathematical Association of America.

Reference

Manning, R. D. *Credit Cards on Campus: Costs and Consequences of Student Debt*.

Washington, DC: Consumer Federation of America, 1999.

10 The Payoff: Your Career and Your Future



Now that you are nearing the end of this textbook, you have come a long way in learning how to be a college student. Yet you may be wondering why you have to think about your career already, or your future for that matter. It probably still seems too far away in the face of more pressing issues such as final exams and housing lotteries. Or perhaps, because you have already been working and have just returned to school, you think you know what you want to do after college, but can't think about it because you are just trying to get through the courses you have now. But if you imagine yourself in a certain job, city, or graduate school, now is the time to start making those dreams a reality. And even if you are not sure what you want to do, it is still helpful to look ahead—in fact, it may be even more important to do so, because you have a lot of decisions to make. Now may be the time to

This chapter will cover the following topics:

- ▶ Thinking Ahead: What You Should Be Doing Now
- ▶ Keeping Up with Current Events
- ▶ How Your Major Defines Your Career Choice, and How It Doesn't
- ▶ Professional Organizations
- ▶ Internships
- ▶ What People Really Do on the Job Every Day
- ▶ Thinking Out of the Box When Preparing for Your Career
- ▶ Résumés and Cover Letters
- ▶ Using the Internet to Prepare for the Job Search
- ▶ The Interview Process
- ▶ The Role of Technology in Our Lives: Connections and Careers

Think About It



Answer the following questions in the space provided.

Picture your ideal career. Now imagine waking up on a typical day once you are established in this career. What specific things do you picture yourself doing on this typical day? Also, describe what skills you envision needing to complete the tasks you have listed. Be as detailed as possible. _____

Share your responses with your classmates in a small group.

take another look at your major or possible major, especially if you have taken a course or two as an introduction. It is also a good time to remember that it is wise not to change your major too hastily, but, rather, to see what other doors may open for you in a particular major.

Thinking about possible careers now may also help you make other decisions while in college, including what activities to participate in and what courses to take. College may be one of the few periods in your life when you are exposed to so many different opportunities and ideas in one place. You don't have to commit yourself to a future path; you can just try out many different things.

If you wish to head to graduate school, or if you even think you might want to, now is the time not only to research where you might want to go but also to be sure you are getting the grades you need and to prepare for the necessary standardized tests (such as the LSAT, MCAT, or GRE). Of course, interviews are a part of this process—for graduate school as well as for that first job out of school. Preparing now for the interview process (which includes offering a stand-out résumé and cover letter), even if you have applied for jobs or have gone on interviews before, will make it less nerve-racking when it really counts. You may be dreaming now of landing a certain job, or you may be thinking about how great it will be to live in a certain city. These plans need to be backed up with hard work and research to ensure their transition from starry-eyed possibility to concrete reality.

Looking ahead can also serve as a powerful motivator. Students who have even a vague sense of direction tend to do better than those who really don't know why they are in college, no matter whether they are earning a two-year or a four-year degree. And as a college student today, you have many resources at your disposal, from the library to the career services office. You also have the Internet, which can provide a wealth of information on careers, graduate schools, salaries, places to live, and job markets. If you do your research on reputable websites, you can use technology to your advantage as you look ahead. Therefore, this chapter will also focus on the role of technology in our lives. Some of you may be extremely good at understanding and using technology, and some of you may even be contemplating a career in the technology field. Obviously, if that is the case for you, knowing as much as possible and staying as current as possible will increase your chances of entering this field. However, even if you are not interested in a career in technology, you are surrounded by technology in your everyday life. Whether you surf the Web, visit a social networking site, use instant messaging, or download music to listen to on the go, you are as much a product of the technology we rely on today as you are a consumer of it. The more you know about the technology you use, as well as the technology yet to come, the better prepared you will be for whatever the future may bring in your life and career.

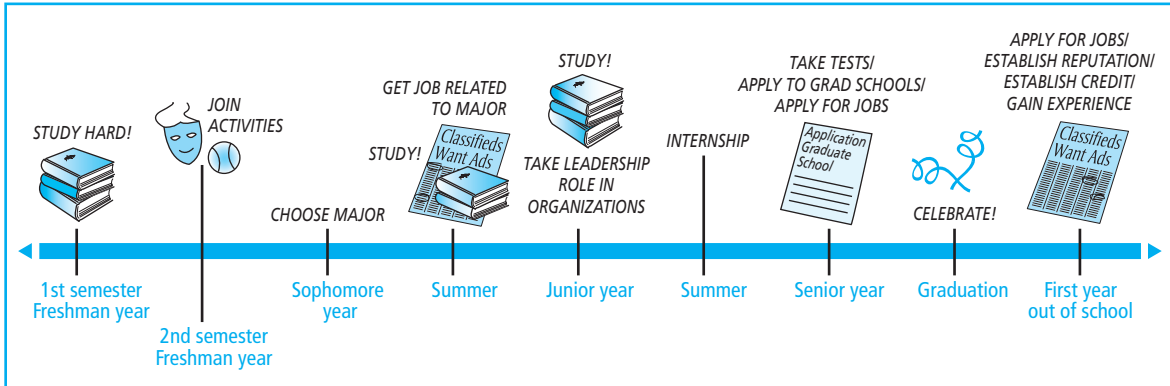
FIRST THINGS FIRST

The French philosopher Simone Weil noted, “The future is made of the same stuff as the present.” What does this mean for you? It means that the future you will have will be defined by what you do now—in your first year of college and all through your college years. That may seem like a lot of pressure, but it’s really no different from what you’ve been doing all your life. Your performance and/or your experiences in high school may have affected your placement in college or your decision to enter the work force instead of college, whether you thought much about it or not. Now, however, you will give yourself an advantage if you think consciously about preparing for what lies ahead. There are lots of questions to think about: What kind of job do I want? Will I need to go to graduate school? What kinds of courses should I be taking? What major should I have? What kinds of grades will I need? How do I get a good internship? You don’t need to have the answers to all of these questions right now, but you want to begin thinking about them in order to be aware of all the issues involved.

Thinking Ahead: What You Should Be Doing Now

First of all, what you are already doing now—going to class, being involved in clubs or athletics, attending campus events, socializing—is very important for the present. You want to have as rich and diverse an undergraduate experience as possible. In other words, don’t put all of your stock in the future—you want to enjoy the moment. But you should also make sure that the things you are doing and enjoying now are leading toward something positive. In addition to jobs, internships, campus activities, and the various other opportunities discussed in previous chapters, it is a good idea to connect the goals you have for your future and your career to resources on and around your campus that you can take advantage of now. Here are some possibilities:

- ▶ Spend some time in the career center on your campus. Many career centers have libraries through which you can browse for very interesting information about career possibilities, trends, salaries, and graduate schools.
- ▶ Talk with a few professionals in your chosen or possible career field. Ask them to talk about the day-to-day aspects of their jobs. Visit them on the job if possible.
- ▶ Talk with professors about your plans for graduate school. Find out where they went—especially if they are in the field you hope to enter. It is important to find out what graduate schools may be best for you and which are known for excellence in your particular field.



- ▶ If you find a graduate program you are interested in, see what courses you will need as an undergraduate so that you will be prepared when you apply.

There are so many things you can do now. If you feel overwhelmed, though, it may be easier not to do anything, so it is far better to pick one thing and devote even an hour a week to it in order to get started.

Keeping Up with Current Events

Part of the expectation most people would have of college students is that they not only know their major, but also are well-rounded, educated people, aware of the world around them. Have you ever heard of “shooting the breeze”? In an interview for a summer job or an internship, there will be a formal part of the interview with questions you can more or less predict: “Why are you interested in this job?” “What are your qualifications?” And so on. But what about the time before the formal interview begins? The interviewer might just “shoot the breeze” by bringing up current events. When you’re on the job, the stereotypical “water cooler” conversations may include people’s ruminations on the day’s news, and you will want to contribute intelligently. Let’s say you’re an art history major looking to get an internship at a major art museum in your hometown. You land an interview, during which they ask you what you think was the most important exhibition to tour the country last year. If you haven’t been following the news at all, you’re not going to have much of an answer, and you’re probably not going to get that internship.

How, then, do you go about keeping up with current events? In the age of the Internet, it’s really not that difficult. You can just click your way right to a news website. Of course, there is always the newspaper for more in-depth reports, and television news provides the visuals. With any news story, you want to apply your

What I Know Now

Shawn • Business Major (Graduated with a B.S. in Marketing) • Age 22 • Austin, TX

Mark and Shawn had been roommates since freshman year. As seniors, they decided to rent an apartment off campus, and they found that they enjoyed having friends over for small parties and to watch football. They shared an off-the-wall sense of humor and enjoyed playing pranks on each other and their friends. As business majors, they both began preparing for their careers in the spring of senior year. They had both had good internships and summer jobs and knew they were in good shape for permanent positions, Mark with an accounting firm and Shawn in an electronics corporation as a marketing trainee. They had sent out many résumés and were taking advantage of on-campus interviews. After a particularly good on-campus interview, Shawn was looking forward to being called back for an onsite interview at the company's West Coast office. The call never came. Instead, he received a rejection letter two weeks later. Crestfallen, Shawn tried to figure out what had happened. He called the person who had done the onsite interview. "Shawn," she said, "I really thought you did a great job in the interview. We made the calls for the onsite interview in the boardroom on the speaker phone, and when my manager heard your answering machine message, he just said, 'Next! I'm very sorry.'" Shawn felt really embarrassed as he played his message back, realizing that he and Mark had never changed it to reflect their status as would-be employees. The message started with a blaring teen-pop song that they thought was funny, followed by Mark saying, "Leave a message. If we feel like it, maybe we'll get back to you." Shawn, who did change his message and find a different job eventually, shakes his head ruefully when he thinks back on it now: "What I know now is that what we thought was a joke turned out to be a joke on us. It is never too early to present yourself to the business world in the way you wish to be perceived, whether in person, online, or on an answering machine."

critical thinking skills in assessing the objectivity or possible bias of a report. And you want to keep an open mind so that you can appreciate all perspectives when you are discussing current issues with people in the work world. Another benefit of keeping up with current events is learning about jobs and careers that are growing, or even made necessary because of what is going on in the world. You will be surprised to find that following current events allows you to learn a lot about what people do in various careers.

The career path you want to follow can also help determine which medium you use to access current events. If you are a journalism or English major, you should be reading at least one or two major newspapers each day—not just for the news but also to get a sense of style and format. Business majors are often required to get a subscription to *BusinessWeek* or *The Wall Street Journal*. Communications majors should watch the news on TV, being sure to check out the styles and points of view of several different channels, which will also yield a sense of who the major players are and why. If you make this a habit, then during a conversation

with someone in the field, you'll be prepared to speak intelligently not just about the news itself but also about the people covering the news. A science or pre-med major should follow the news to keep up on how scientific advancements are being covered in the popular press. He or she would also be well-advised to get a subscription to a major scientific or medical journal. This is a relatively simple way to better prepare yourself, and, in the process, you are turning into the well-rounded person you enrolled in college to become. Taking this extra step shows others how committed you are to your chosen field. And if you find you're not particularly interested in following current events in your chosen field, this may be a sign that you should consider whether a different field related to your major might be a better choice.

How Your Major Defines Your Career Choice, and How It Doesn't

By now, you may realize that more opportunities for you exist than you may have thought. Although your choice of major is important, and it does help define what kinds of opportunities you will have, it does not prevent you from seeking other opportunities not obviously defined by the major. Let's clarify. If Nate is an English major, for example, who does not take more than a science course or two as an undergraduate, Nate will not be prepared for medical school because med schools would expect him to have a solid science background. If Celine majored in studio arts, she should not expect to be offered a job as a high school math teacher, and she would have to go back to school to take quite a few math and education courses before getting her certification and applying for such a job. On the other hand, there are many jobs and graduate programs that are not as interested in your particular major as in the fact that you have a college degree. For example, many companies have training programs for people with any type of college degree—for management, sales, account management, and many other types of positions. A graduate with a psychology degree would be a fine candidate for a sales training program at an insurance company. A graduate with a degree in education would be a possible choice for a training program at an educational software company. As you can see, the career choices you may be familiar with now in connection with your chosen major may be just a few of many other possibilities that will open up to you through good planning and research.

What do you do when you are having trouble narrowing down your choice of major to one? Now, when you are taking general electives, explore the many possibilities you have available to you while you are selecting a major. Let's say you are still attracted by two different majors. You could always just pick one, but there is another possibility: Get creative. At many colleges, you can be creative in your choice of major. You might be able to do a **double major** (biology and criminal justice, for example) or to pick a **minor** that complements your major in a unique way (a photography major with a minor in marketing). At some colleges, you can even **create your own major** by working with a professor or a committee to develop a unique program that draws on several existing programs in such a way as to meet your individual needs.

Let's go back to Nate, the English major who wants to go to medical school. Because he waited until after he graduated to make this decision, he is facing a year or more of science courses before he can even take the entrance exams. If, instead, he had double-majored in English and biochemistry, he would have been able to pursue his interest in literature and prepare himself for medical school at the same time. Celine, if she really wanted to be a math teacher, could have pursued her teaching degree while minoring in studio arts, thus making herself even more marketable as a job applicant because she could do more for the school. Even though your choice of major will play a role in shaping the opportunities you will have upon graduating, this doesn't mean you will have to do one thing for the rest of your life just because you majored in it. And if you do have diverse interests, use a little bit of creativity; you will find that you can study what you really like *and* better prepare yourself for opportunities after college.



In this photo, a student has just finished interviewing for an internship at an architectural firm. What can you do now to become a better candidate for an internship? In what type of company or organization would you seek an internship? Why? Where can you go now to learn more about internships?

Professional Organizations

Ever heard of HOSA? How about AIAS? If you haven't, you might want to find out about some professional organizations related to your field. HOSA is the Health Occupations Students of America (www.hosa.org), and AIAS is the American Institute of Architecture Students (www.aias.org). Most such organizations encourage student membership, and these memberships not only look good on a résumé but can also provide you with some great experience and connections. In addition, such organizations are a good source of information about the field, which can help you decide whether that profession is really what you want. For more information about organizations related to your major or future career, see the Student Website.

Why do you think provision is made for students to be affiliated with professional organizations? You are the future of your profession. Your early involvement benefits you and the profession. Being associated with a professional organization will set you apart from the rest of the pack. And who knows? The local chapter president may end up being a future employer!

Internships

An internship is frequently designed for the student to get specific training, whereas in a “job,” the employee is doing the work that needs to be done. Internships sometimes pay, and sometimes they don’t. An intern will often be assigned to a mentor, will do some job shadowing (observing a person while he or she is working), and will be involved in various activities and projects that are meant to benefit the intern as much as the company or organization. For example, if you had a regular summer job at Disney World, you might find yourself shepherding visitors through the lines at Space Mountain. If you were an intern at Disney World, you could find yourself participating in staff meetings, working on public relations efforts or designs for traffic flow, or helping plan the parade down Main Street. Also, you can frequently get credits toward your graduation for internships. You can earn three or more credits for an internship in your chosen field. Some college degree programs even require internships. If yours doesn’t, you still may be able to arrange one. Talk to your advisor or department chair to find out more, or see the Student Website.

Teamwork Activity

This activity will give you the chance to research the job of your dreams or at least one that you think you might be interested in pursuing. Organize yourselves into groups of four. This is the group you will return to when your research is finished. After introducing yourselves to each other, go around the group and list the career each member would like to research—software engineer, staff reporter for a newspaper, speech pathologist, clinical psychologist—wherever your interests lie. Now, in the library, at the career services office on campus, or on the Web, research the career you listed and fill in the information about that job asked for in the following table.

	1.	2.	3.	4.
Minimum Degree Needed				
Highest Degree for That Field				
Any Certifications That Are Necessary or Desirable				
Starting Salary				
Possible “Pay Your Dues” Starting Position (for example, holding cue cards for local weatherman as starting job for on-air news anchor)				

Reassemble into your original groups and share what you have learned. Each person in your group will have information on each job listed in the table. Allow time for everyone to ask questions, and fill in the table. You may be surprised by what you have discovered about your chosen career and about those of others.

What People Really Do on the Job Every Day

Does being a forensic scientist sound like a really interesting job? How about being an attorney? Or maybe you’ve always wanted to be an accountant—or a sports agent. Everybody has a different dream job. The idea of a forensic scientist may appeal to one student, whereas another may find the idea of doing crime scene investigations stomach-turning. Being an accountant and dealing with numbers all day might strike some students as dull, while others may see accounting as a gratifying challenge. A student’s impression of what his or her dream job might be is shaped in part by what the student *thinks* those jobs are all about. Sometimes it’s based on pretty good second-hand information (“My mother’s been an accountant for twenty years”), sometimes on what the student has seen in movies or on TV (“I like that guy on that one show—that job looks like it’d be fun”).

Chances are, though, that most students don’t know what an accountant or a forensic scientist or a sports agent does in a typical day on the job. How could they?



The people in this photo are researchers at a medical technology company. What do you think of when you think of medical technology? What types of research might these people be working on? What is technology’s role in today’s medical treatments?

Well, there are a couple of things you can do now to find out. Earlier in this chapter, we talked about internships. They are a great way to find out exactly what goes on in a particular workplace. After experiencing an internship, many students feel confident that they’ve chosen the right profession; others, however, decide that a particular field isn’t for them. Because of the internship, they can change their major or explore other courses or options before they go any further. If you’re planning to become a teacher, it is nearly certain that student teaching will be part of the curriculum. But before you even get to that point, you will probably have done numerous classroom observations. Another thing you can do to learn more about a particular workplace is to spend a day in the office. If you know someone in the field, you might be able to “shadow” him or her at work for a day. If you don’t know anyone in the field in which you are most interested, talk to your career center about setting something up for you.

In the meantime, see whether any of these “typical day” scenarios appeal to you, surprise you, or affirm what you already believe.

	Campbell	Krissy	Lorenzo	Michele	Frank
	Financial Analyst for a Major Retailer	Marketing Manager for an Athletic Equipment Maker	Physical Therapist	Attorney Specializing in Contract Law	Corporate Trainer for an Investment Firm
College degree:	B.S. in International Business; Minor in History	B.A. in Journalism	B.S. in Biology; M.S. in Physical Therapy	B.S. in Finance; J.D.	B.A. in English
Describes job as:	<i>“Fun and interesting—I get to work with both the design aspect and the financials.”</i>	<i>“Always something different. I work on everything from the product design to the sales.”</i>	<i>“Physically demanding—but it keeps me in shape. I also have to do a lot of planning.”</i>	<i>“Challenging but it can be stressful—one mistake with a comma could cause major problems. The days can be very long—but the pay is excellent.”</i>	<i>“It’s a very fast-paced environment. I often do several training sessions for different groups in one day. It’s very demanding, but I thrive on the energy of the place.”</i>
7:00–8:00	Home in bed; getting ready for work	Getting ready for work	Meets with first client; reviews chart and teaches patient exercises for sprained ankle	Arrives in office; reviews materials and begins work on contracts	Planning for first session; breakfast at desk
8:00–9:00	Commute time; bagel at coffee shop	Battles traffic into city	Meets with second client for the first time; conducts interview	Works on contracts: proofreading, editing, writing new sections, researching applicable case law	Meeting with support staff to go over the training plan
9:00–10:00	Arrives in office; checks messages; looks at previous day’s financial reports	Has a conference call with ad agency to go over a new ad concept	Staff meeting; discussion of new office procedures	Works on contracts	First training for new computer software for 200 investment analysts
10:00–11:00	Meeting with designers to discuss new product for next year’s lines	Writes copy for a hang tag that will go on a new piece of equipment	Meets with third client	Meets with client to discuss contracts	Training session continues until 10:30; analyzes feedback
11:00–12:00	Meets with designers to discuss new product for next year’s lines	Meets with colleagues to get feedback on copy; reviews layout sent by ad agency	Meets with fourth client	Works on contracts	Prepares for post-lunch session

12:00–1:00	Lunch with friends	Lunch with co-workers	1/2-hour lunch followed by paperwork	Works on contracts; lunch in office	Lunch meeting with senior managers
1:00–2:00	Reviews designers' proposals; begins crunching numbers	Visits local dealers in company equipment to check out displays and talk to managers	Meets with fifth client	Works on contracts	Leads a train-the-trainers session for his staff on a new support network
2:00–3:00	Continues crunching numbers	Visits local dealers of their equipment to check out displays and talk to managers	Meets with sixth client	Works on contracts	Interviews employees for an open position on his staff
3:00–4:00	Continues crunching numbers; meets with senior analyst to discuss projections	Visits local dealers in company equipment to check out displays and talk to managers	Writes up reports for daily activities; leaves at 3:30	Works on contracts	Interviews continue; discusses candidates with other staff and managers
4:00–5:00	Finishes weekly report	Begins a research project on examining the equipment being sold by competitors	Jogs in the park near the office	Works on contracts	Meets with his supervisor
5:00–6:00	Leaves office and goes to the gym for spinning class	Continues research project on examining the equipment being sold by competitors	Home	Works on contracts; has dinner in the office	Has dinner at desk; prepares materials for new training sessions
6:00–7:00	Meets friends for sushi	Meets friends after work		Works on contracts	Prepares materials for new training sessions
7:00–8:00	Continues to have sushi with friends	Leaves for home		Works on contracts	Prepares materials for new training sessions
8:00–9:00	Home			Works on contracts; arrives home by 10:00	Leaves for home

Thinking Out of the Box When Preparing for Your Career

Ultimately, breaking into the career you want isn't necessarily limited to following one straight path from point A to point B: taking the right classes, earning a 4.0, completing the prized internship, and getting the right degree. Sure, these things can help, but sometimes taking a side road can lead you to an unexpected but very pleasant destination. For example, Josie was a special education major who had been a cheerleader in high school. During college, she auditioned for and was given the chance to perform as the college's mascot at games and social functions. This led to a summer job as a mascot for a local radio station, which gave her more experience in a larger public forum. She loved the job so much that after graduating, she auditioned to be the mascot for an NBA team and applied to work in their marketing department. She worked as the mascot for five years and loved being in front of the crowd while also learning the ropes of sports marketing. She is now the team's marketing director, a job in which she was able to create a new team mascot and hire the people for the mascot job. Even though her degree was in special education, she did not confine herself to one type of opportunity. The experience she had working with children in her major has certainly helped her in her current job. Her "detour" into jobs as various mascots led her to her main career.

As another example, Andy always thought he would be "the next Steven Spielberg," but he learned that sometimes life takes you in directions you least expect to go. As a film major at an East Coast college, Andy directed and produced a number of student films that drew rave reviews on his campus—he even won some national student awards. After graduation, he took the standard "direct to Hollywood" route, waiting on tables and looking for his "big break." He did manage to find a job as a production assistant on a couple of direct-to-video movies, but soon he realized that he could take a different direction. He had learned a lot about production by the time he heard about an opportunity working at a major pharmaceutical company in its own video production department. After two years there, he realized he really liked the corporate environment. The following year, Andy came back to the East Coast and is now the head of production at a national chemical company. He learned that interesting and unusual opportunities sometimes exist right in front of you if you are ready to take advantage of them.

How can *you* think outside of the box? It would help to start by remembering the following sage advice:

"Chance favors the prepared mind."—Cicero

What does that mean? It means that you have to be prepared for unexpected opportunities and not be afraid to take chances. Josie did not start out by saying she wanted to portray the mascot for an NBA team, and Andy is very happy even though he did not turn out to be "the next Steven Spielberg." In their experiences, one opportunity led to another. Right now, you may have a major or a particular interest in a major. Starting today, don't let that major define or limit the path you take.

Résumés and Cover Letters

Résumés and cover letters are often your potential employer's first opportunity to form an impression of you. Employers are likely to decide whether or not to meet you on the basis of how you come across in these two important documents. Therefore, investing time preparing effective cover letters and résumés will pay off in your being invited to more interviews, and that, of course, will make it more likely that you will receive offers of employment or an acceptance to graduate school. Even if you have been working for several years and already have a résumé, you will want to rewrite it, keeping in mind where you want to go after college.

Before you even start to write or rewrite your résumé, think about the skills you have gained through courses, sports, extracurricular activities, internships, past employment, summer jobs, and so on. Employers are looking for people with skills that can be used on the job, so it is important that you make your skills known. Many students overlook the significance of their learning how to work on a team while playing basketball in college or of their managing a budget as treasurer of a student organization. You may have gained valuable skills in meeting deadlines as a member of the newspaper staff or stage crew of a campus production. You may have learned creative teaching strategies for preschool children by being an arts and crafts counselor at a summer camp. Even volunteer experience, which you may have gained because you simply love helping people, may be acutely relevant to a particular job. What about delivering meals to the elderly? Or working with disabled children? What about the skills you have gained through hobbies? You may have taught yourself how to design your own webpage or how to edit digital photos. If you have worked before entering college or are still working, look at what you do in your current job. What skills have you learned that can be applied to a whole new career path? On-the-job experience also matters. Let employers know what you can do for them already.

Your Résumé

You should begin drafting or revising your résumé now, in your first year of college. Think of your résumé as a work in progress, just as your experiences in college, work, and volunteering are still works in progress. As you experience new things, take on additional responsibilities, and learn new skills in jobs during the school year or the summer, you should add them to your résumé. Then, in your senior year, you will just have to fine-tune your résumé instead of trying to remember everything you want to add to it from the last four years or more. Remember also that you will add to and subtract from your résumé as your career goals change or come into a clearer focus.

There are basically three types of résumés:

1. **Chronological:** This type of résumé traces the individual's work history by listing his or her jobs in order, *with the most recent first*.
2. **Functional:** This type of résumé highlights areas that are the most pertinent to the job you are seeking.
3. **Combination:** This type of résumé uses elements of both the chronological and the functional résumé.

The type of résumé you are most likely to develop in college is the **chronological résumé**, with your education coming before your work experience. Right out of

college, the most important qualification you will be able to offer is that college degree. The rule of thumb is that if you are a recent graduate or have less than five years of work experience, *your education should come first*. Also, if you are in the academic or scientific professions, your education should come first.

Your **QPA** is another important addition to your résumé if you are a recent graduate. Keep in mind, however, that you generally want to list it only if it is 3.0 or higher. Employers will assume that your QPA is on a 4.0 scale, so if your school does not use this scale, be sure to explain clearly the scale your school does use (for example, a 4.5 or 5.0 scale)

Of course, if you have a high QPA, you may also have earned some **honors** during your years in school. These should be noted on your résumé. For example, if you graduate cum laude, magna cum laude, or summa cum laude, you should note that next to your degree. If you were inducted into any honor societies or won any scholarships or awards during your college career, you should note those as well. Examples include Dean's List, Phi Beta Kappa, and the Senior Science Research Awards.

As a new college graduate, you will want to highlight your **college experiences** on your résumé. This is another good reason to be involved on your campus and in your major. For example, you will want to highlight activities such as senior projects, internships, related course work, and offices held in student organizations.

Here are some specific tips for creating an effective résumé:

- ▶ **Be concise.** Your résumé should be a snapshot of your strengths and qualifications. Your résumé is not your life story. The ideal length, for a new college graduate, is one page. If you have to go on to a second page, do so, but your résumé should never be more than two pages long at this stage of your career.
- ▶ **Be honest.** This really goes without saying. You should never, ever lie about job experiences you don't have or grades you didn't get. Lies will come back to haunt you, even years down the road.
- ▶ **Be neat.** The appearance of your résumé should be as professional as your own appearance when you go to the interview.
- ▶ **Be careful.** Proofread. Make sure you have no typos or spelling errors. Make sure your dates and numbers are correct.
- ▶ **Be professional.** The physical appearance of your résumé should "say" professional. Use high-quality paper in conservative colors such as white, tan, or gray. The envelope should also match your cover letter and résumé paper. Include an e-mail address on your résumé; however, if your address is something like "hotchick99" or "beerman2020," get another e-mail address—and be sure to check that it is active and accessible.
- ▶ **Use action phrases and power verbs.** The words you choose will convey the best message if they are clear and powerful. Be specific about what you have done. For example, words such as "managed," "developed," "designed," "analyzed," "wrote," and "coordinated" create a clear picture in the reader's mind of what you *did*.
- ▶ **Emphasize.** You should emphasize any special accomplishments. Also, you want to emphasize skills you have that will transfer to the job you want, as you read about at the beginning of this section. These may include strong writing, math, or computer skills.

- ▶ **Don't include personal information.** Employers do not need to know your age, your health history, or what you look like at this point.
- ▶ **Have others review it.** After staring at your résumé many times, you may find it hard to really see it anymore, and mistakes may get past you. Always bring in a fresh pair of eyes—not just to catch any mistakes but also to give advice in terms of how you could make your résumé better.

Objective: An entry-level management position that will utilize my leadership skills and computer experience. This is an objective you might see on a typical résumé of a new college graduate. Some career professionals advocate the use of objectives, but others don't. If you use an objective, be sure to keep it simple and to the point, just like the example.

Sean Liu
2057 Lighthouse Dr.
Oakhaven, OH 12345
(456) 555-1212
SLiu57@email.com

- OBJECTIVE** An entry-level management position that will utilize my leadership skills and computer experience.
- EDUCATION** Bachelor of Science, Business Management (Magna Cum Laude), Oakhaven College of Eastern Ohio, May 2008. Minor: Computer Science. QPA: 3.8.
- Related Coursework: Management, Accounting, Finance, Marketing, Leadership for Business Professionals, Organizational Psychology, Structured Programming, Computer Systems Architecture, Visual Basic, C++.
- SPECIAL SKILLS** Bilingual (English/Cantonese), Familiar with Microsoft Windows Operating Systems, PC Hardware, and Microsoft Word. Programming skills in C++ and Visual Basic. Proven organizational and leadership skills.
- HONORS** Dean's List, Senior Leadership Award, Outstanding Senior Thesis Award.
- EXPERIENCE** *May 2006–August 2006*
Intern
Computer Systems International, Cleveland, Ohio
Performed system integration testing on second generation information system product for dental office management. Authored Engineering Verification Test (EVT) documents; recorded test results and met with software developer to review findings.
- August 2005–May 2006*
Student Manager of Computer Help Desk
Oakhaven College of Eastern Ohio, Oakhaven, Ohio
Handled incoming requests. Assigned duties to team of five student employees. Generated monthly reports.
- ACTIVITIES/ INTERESTS** Computer Club President, Residence Hall Assistant, Freelance website designer.
- REFERENCES** References available upon request.

Lifeline



Need help writing your résumé? The staff at your campus career services office can help. But don't wait until the spring semester of your senior year. Start now! As you get involved in campus activities and gain experience in on-campus or summer jobs, get them on your "working résumé" right now. You will be surprised at how easily you can forget details later. Furthermore, the job of writing your résumé will not be as overwhelming—you will just add to it as you go along and then clean it up in your senior year. Remember that offices such as career services are inundated with seniors who wait until the last minute. You won't get the kind of help you really need then. Be smart and write your résumé a little at a time. You also never know when you will need a résumé for a summer job or internship.

Also, make sure that your objective is precise and shows what you have to offer the company. Since you may be sending out many résumés at one time, be sure to alter your objectives for different positions. For example, the objective cited here would not be suitable for a sales position. Many people place an objective at the top of their résumé, where it becomes the first thing a potential employer sees. If it is too general, it really is a waste of time. As you are crafting your résumé, seek advice from your career center staff about whether including an objective will enhance or detract from it.

On page 275 you will find a sample résumé for a new college graduate (you can visit the Student Website for other examples).

Your Cover Letter

You need to develop an effective résumé before you write a cover letter because the cover letter is just what the term implies: a "cover" for your résumé. The cover letter introduces your résumé, and you yourself, to a potential employer. If it is well written, the letter will encourage a potential employer to read more about you.

There are two types of cover letters:

1. A letter of application. This type of letter is used to apply for a specific position that has been advertised. Thus it is a direct response to the employer's account of the qualifications needed for the position. The letter of application shows that your qualifications and experiences match those that the potential employer is looking for in a person to fill that position.
2. A letter of inquiry. This type of letter expresses your interest in working for the company, even though the company is not presently advertising for applicants and, indeed, no specific job opening may exist.

Let's focus on the first type of letter, because this is the type you will write more often and the type that more often gets results.

There are some important things to keep in mind when you write a cover letter:

- ▶ **Sell yourself.** You need to grab the reader's attention right from the beginning.
- ▶ **Be assertive.** Tell the reader what you want (an interview, an application, the job) and why you think you should get it.
- ▶ **Meet the employer's needs.** Address the job requirements and show how you meet them.
- ▶ **Spell correctly and watch your grammar.** This may be obvious but is worth repeating. Many applicants miss errors, but employers don't.
- ▶ **Keep it to one page.** Employers don't have the time to read a book! Get to the point.
- ▶ **Use the person's title.** Find the right person to send the letter to, even if you have to call the company. Make sure you address the letter to that individual and that you use her or his proper title.
- ▶ **Don't overuse the word "I."** Vary your sentence structure.
- ▶ **Use positive words.** Show your strengths, not your weaknesses. Also, remember that you don't want to come across as a complainer.
- ▶ **Review your work.** Proofread! Have someone else read your cover letter as well.

Here is a suggested format for an effective cover letter:

Sample Cover Letter Format

Date

Reader's Name
Title
Company/Organization
Street
City, State, Zip

Dear Mr./Ms./Dr.:

Paragraph One: This should tell what you are writing the letter about and why. Be as specific as possible. For example, "With this letter, I am applying for the position of Management Trainee at Computer Systems International, as advertised in *The Oakhaven Press*." You should also be very specific about why you are applying and who you are: "I am a recent graduate from Oakhaven College of Eastern Ohio with a degree in Business Management and experience in computer programming."

Paragraph Two: This paragraph is the body of your letter. This is where you can really sell yourself. Focus on the skills and experiences you have gained that will directly apply to the position. Don't give too many details—your objective is simply to get the recipient interested enough to read your résumé.

Paragraph Three: This is the closing paragraph. Offer to send recommendations and any additional information the employer might need. End with the words, "Thank you."

Sincerely,
Your Signature

Your Name
Street Address
City, State, Zip
Telephone Number
E-mail Address

Visit the Student Website for more samples of effective cover letters.

Using the Internet to Prepare for the Job Search

Technology is a main focus of this chapter, and now that you understand how to prepare a résumé and write a cover letter, it is important to look at the part that technology plays in the way companies announce job openings and the way people apply for jobs. Given the role that the Internet plays in our everyday lives, it is no surprise that it also plays a key role when it comes to the job market. Right now, there are many websites on which employers post jobs and potential employees

post their résumés, including such sites as monster.com and hotjobs.com. Many sites such as these are general sites, where you can find information about jobs across all fields. There also are very specific job sites; for example, dice.com focuses specifically on jobs in technology.

How can you take advantage of these types of sites now? Browsing these sites will help you see possible job trends, such as where certain types of jobs are now, what types of companies are hiring, or what types of skills are in high demand. These sites will often have information about specific careers, career trends, job searches, and other topics relevant to seeking employment. Becoming familiar with particular companies, what types of jobs are available in places in which you would like to live after you graduate, or what may be “hot” in a particular field can help you be better prepared to make informed decisions about your major and possible careers. These sites, however, should be used in conjunction with other resources available to you on your campus, including the career services office.

When it comes time for you to look for a job, be sure to use such sites wisely. What you post on these sites remains in cyberspace forever. Also, what may look like a reputable site may not be. You need to be careful. On a positive note, such sites can be a useful part of the job search. Many companies use these sites, as do headhunters (job placement agencies), to find potential candidates for jobs. Employers use these sites to find potential employees whose résumés show they have the skill set a particular company is looking for. Technology plays a large role in career exploration and job searches, and it will continue to do so; therefore, it is good to know as much as you can about the best ways in which to use what is available to you.

The Interview Process

An effective résumé may get you an interview, but a successful interview is what will get you the job—or will make a big difference if you’re applying for graduate school. You need to get ready for this part of the process to ensure that what a potential employer or graduate admissions counselor sees on paper will actually be highlighted and enhanced when he or she meets you in person.

Why an Interview?

You may dread the thought of an interview, but interviews are very important and can actually help you if you learn how to succeed at them. The purpose of an interview is to collect as much information as possible about a candidate. An organization, through an interview, will be able to assess whether you are a “good fit” not only for the position but also for the organization as a whole. An interview can also help you assess a potential employer to see whether you think the organization is what you are seeking. You may be so concerned about getting a job that you are tempted to accept any job that is offered. But you also need to be selective. You don’t want to have to start the job search all over again in a few months. That will not help you or the employer. Here are some things to consider when deciding whether a job is right for you.

- ▶ Will the job require frequent relocation? (This of course is not a problem if you are not choosy about where you live or are not trying to stay close to home.)
- ▶ Are there opportunities to grow within the company, or do you think you might be in the same position too long?
- ▶ Do you like the hours? Or does the job entail working nights and weekends when you really don't want to? What may sound fine at first may become a real drag later on.
- ▶ Is there a lot of travel involved? Will you be flying across country frequently? Decide whether or not this appeals to you.
- ▶ Is the pay adequate? Remember to consider where you will be living. You will need a higher salary in some parts of the country than in others. Will you need to find a roommate or will you have to live at home for a while? (Remember that the pay for many jobs starts low, but your salary may increase quickly as you gain experience and prove yourself.)
- ▶ How are the benefits? A lower salary may be acceptable if it is supplemented by excellent benefits, including health insurance, tuition reimbursement, and vacation time.
- ▶ How do you think you will get along with the employees you meet during the interview?
- ▶ How is the working environment? This is important. You will be spending many hours at work.
- ▶ If you're going to graduate school, you want to consider what kinds of jobs you might have as a graduate assistant. Will you teach courses? Will you conduct research? Will you have time to do your own work? What is the pay? Are there any benefits?

Remember that interviews serve a purpose for both the employer and the potential employee. Thinking about interviews this way will help you to see them as a more positive experience. Keep in mind, however, that you also have to be realistic about your employment prospects. There are a couple of variables that will affect how choosy you can be. First, the overall job market is a major factor. In a hot market, employers need to hire people to keep up with the demand for the company's goods and services. They may be much more flexible in what they'll do—offer bonuses, relocation allowances, and the like—to people they want to hire. In a slow market, however, the employer has the upper hand. In either case, there's not much you can do to control that situation. What you *can* control is the image you present in making yourself a desirable prospect. The interview is a factor, as are your grades, the types of courses you take, and the types of experiences you accumulate. Even in a slow market, employers are going to want to find the best new people to hire.

What Is Involved in an Interview and How Do You Survive It?

First of all, interviewing is a skill, and skills can be practiced. The more you interview, the better at it you will become. An interview consists of five major steps:

1. **Preparation.** Find out as much as you can about the organization or graduate school. Consult websites, corporate literature, graduate catalogues, and (if possible)

people you know who have a connection to the organization. Learn about its products and services, organizational philosophy, and company goals. If possible, learn something about the interviewer. This will help you to break the ice and may give you some idea of what to expect. Find out what you should wear from someone in the field. A professor or career counselor can also help with this. Generally, dress conservatively. Make sure you know what time your interview is, where you need to be, and how to get there. If you're driving, be sure you know where to park. Always—*always*—give yourself extra time so that after you arrive, you can calm down, catch your breath, and focus on the interview itself. Do a practice interview with a friend or with a career counselor—or even with someone in the field. Know your résumé inside and out.

2. **Starting off on the right foot.** As the old cliché has it, first impressions last. Be confident. Offer a firm handshake and make eye contact. Listen for the interviewer's name and title so that you can refer to him or her properly. Establish a good rapport with the interviewer by making appropriately casual conversation.

3. **Q & A.** This is the heart of the interview. You will be asked questions and will be expected to provide the best answer possible. Make sure you understand the question and think about your answer before speaking. If any question is unclear to you, don't be afraid to ask for clarification. Interviewers use different techniques—don't be thrown off balance. For example, although many interviewers adopt a friendly, conversational style, others are very formal. They may not respond to your answers at all and, instead, may simply go on to the next question. Their responses may not give you any indication of whether they are impressed with you or not. Also, remember to avoid slang and any bad habits such as throwing "like" and "you know" into your sentences. It is important to keep your answers fairly short and to the point. If your interviewer wants more information, he or she will ask you. Or you can ask, "Would you like me to expand on that?" Make sure that what you say is actually an answer to the question. You will generally also be expected to ask questions. Be prepared with some questions in advance. When asked if you have any questions, you never want to say, "No, not really." The questions you ask will show your interest in the position and the employer.

4. **Wrap-up.** At this point, you should thank the interviewer for his or her time. Interviewers should have no objection to your asking when you can expect to hear from them. You might also invite the interviewer to contact you for more information. Get a business card from the interviewer and re-emphasize your interest in the position. Be sure, within two days, to send a thank-you note that reemphasizes your strengths and interests.

5. **Self-evaluation.** At home, shortly after the interview, take some time to review and reflect on your performance. After all, even if it didn't go well (or didn't seem to go well), you can still learn something from it. Remember, you may be doing this more than once.

Time Out Tip



Many colleges and universities hold

“mock” interviews to help seniors (but you don’t have to wait until your senior year) get ready for the actual interviews they will experience. Take advantage of these—they are often set up by the career services office on campus. During these mock interviews, a staff member or graduate student will ask you questions that you would typically be asked in a professional interview. Usually, these interviews are videotaped so that you can critique your performance. The interviewer will also give you comments and suggestions. You may be surprised to learn you have a bad habit, such as saying “like” or “you know” or pulling on your hair or constantly shifting your weight in the chair. It may be a humbling experience, but it is far better to improve your interview skills now so that the job you really want doesn’t slip away! By the way, if your campus does not hold mock interviews, set them up yourself with some friends.

How Do You Handle Special Interview Situations?

Not all interviews will be face-to-face with one person. You may find yourself in a unique interview situation. If you prepare for these possibilities, you can make the most of them.

- ▶ **The telephone interview.** Phone interviews are not uncommon, particularly if you are a candidate for a job that is geographically distant. They may also be conducted as the first stage of an interview process. Many organizations use phone interviews to whittle down their list of candidates and decide whom to bring onsite. Try to think positively about a phone interview. Think of it as an open-book test. You can have all of your notes in front of you. If a group is interviewing you, write down their names as they introduce themselves. Then address them by name again throughout the interview. Take notes as the interviewers talk to you so that you can refer to the notes as you answer questions. Try to speak slowly and clearly and to be as upbeat as possible. Consider getting a speaker phone or a hands-free attachment so that you can write and page through your notes more easily. Remember that the phone interview may be the deciding factor in whether you get the opportunity to interview in person. Therefore, prepare for a phone interview as seriously as you would a face-to-face interview.
- ▶ **Group interview.** There are two types of group interviews. *In the first and most common, a group of people from the company or graduate school gather together to interview you.* Sometimes you may have a group interview right after you interview with the person who initially contacted you. You may feel intimidated at first because it may seem that you are “on stage” in front of an audience, but the questions will be no different than they would be if each person interviewed you separately. Many companies and schools hold group interviews for the sake of time saving and convenience. Keep in mind that even though one person at a time will ask you a question, when you answer you should make eye contact with the whole group. *In the second and less common type of group interview, more than one candidate is interviewed at the same time.* In this setting, interviewers are often observing how candidates interact with each other as well as how they answer the questions. The type of job you are interviewing for may determine what kind of person the company is seeking. For example, if you are interviewing for a sales position, the company may want to find the candidate who is the friendliest or the most outgoing of the group. In such interviews, then, you want to interact not just with the interviewers, but with the other candidates as well. You want to make sure you stand out without appearing too domineering.
- ▶ **Lunch or dinner interview.** A lunch or dinner interview brings with it the added pressure of having to worry about table etiquette! You may have a lunch or dinner interview for two reasons: This type of interview may be

more convenient for the interviewer, who can do two things at once, or the interviewer may want to see how you perform in a less traditional setting. Perhaps the job you are applying for will require you to attend many lunch and dinner meetings, so this interview will be an indicator of how well you might do at such a job. Because this type of interview has many potential pitfalls, there are a few things you should do, and a few you should not do, to navigate this experience successfully. First, do not order alcohol, even if the interviewer does. Doing so merely adds an unnecessary element of risk. Second, do not send your food back, even if you are not happy with it. This occasion is not about the food. You do not want to appear to be a complainer, and you want to stay focused on the conversation. Also, don't order any messy food (such as pasta with sauce, which you may end up slurping or dripping on your clothes) or food that you need to eat with your fingers (such as hot wings or a burger with the works, which could make you preoccupied with using your napkin after every bite). It is best to stick with clean, easy-to-eat foods such as broiled chicken or fish (without bones—you don't want your interviewer to have to perform the Heimlich maneuver!).

Your interview experience may also end up being a combination of many types of interviews. Your journey with one company may begin with a phone interview, progress to a group interview on site, and conclude with a lunch or dinner meeting. Also, in a given day, you may meet with one person individually and then go on to a small group meeting. You need to be prepared.

How Do You Prepare for Interview Questions?

First, prepare by practicing responses to common interview questions. Give responses that show your strengths such as how you solve problems, make decisions, set priorities and goals, work with others, and plan and organize.

Prepare answers to the specific types of questions you will be asked. First, you will nearly always get at least one *introductory question*: “Can you tell me about yourself?” “How did you choose your college or major?” “How did you become interested in this field?” “Why are you interested in this position?” “What are your strengths and weaknesses?” “Where do you see yourself in five to ten years?” Prepare answers for these ahead of time, no matter what the job. Practice giving these answers until they are second nature. Be ready for behavioral *questions* such as “When did you feel you were best able to solve a problem and how did you do it?” and “When did you need to be in a leadership position and how did you handle it?” Prepare these questions by reviewing the positive and negative experiences you have had so that you can easily recall them during the interview. Finally, be prepared for aggressive follow-up questions such as “We have several candidates applying for this position; what can you offer that they can't?” or “Why should we hire you?” Again, review your strengths before you interview. Ask those who know you what your strengths are.

Be prepared for possible “off-the-wall” questions. Occasionally, interviewers will throw you something completely unexpected. For example, an interviewer might ask, “How many golf balls would it take to fill this room?” When you hear this,

you don't want to say, "Huh?" Yet clearly, there's no way you could know the answer to that question. So what do you do? First, you need to understand why the interviewer is asking you this question. The interviewer doesn't really expect you to know, and he or she doesn't care what the answer is. What the interviewer is trying to find out is whether you can think on your feet and what process you would use to answer the question. You might answer by saying, "Here's what I would do to find out." And then explain your plan.

Overall, the interview process can be very rewarding if you prepare for all possibilities and learn from each and every experience you have. By the time you get to an interview, you want to show a potential employer what you can offer. Interviews are your chance to sell yourself. Make the most of them!



DIY: Do-It-Yourself Activity

If you are interested in practicing your own table etiquette, but your college doesn't schedule dinners for this purpose or you would rather do it in a smaller, private setting, host your own. Get the rules from an etiquette book (which you may find in the library or at your career services office). Then invite a few close friends and, to hold down the cost, ask each of them to bring something to include in the meal. Set the table to mimic an upscale restaurant (even if you have to use paper plates and plastic forks and knives). You may even want to videotape this practice session to view later and critique yourselves. What better way to have fun *and* help each other feel more comfortable later, when it really counts!

The Role of Technology in Our Lives: Connections and Careers

Just as getting prepared now for your future will pay off in the long run, so will learning what role technology can play in your life pay off in more success in school, career planning, and the job search. Also, technology itself is an interesting subject because it is always changing. The future of technology is hard to predict, but what is sure is that it is always moving forward, just as your time in college is always moving forward. In personal ways, also, technology is a part of your everyday life: the cell phone you use; the laptop on which you write your papers, send e-mails, visit social networking sites, or conduct research; or the MP3 player you carry around with you everywhere you go. You may not even be able to imagine your life without technology. Yet, while all of this technology has made your life more enjoyable and your ability to communicate better, there are some downsides. You will want to think about the place technology has in your life as a student in terms of making your time in college more successful and enjoyable, but you will not want technology to take over your life. There should be a positive balance between your use of technology and other areas of your life.

In the same way, you may want to consider the role of technology in your potential career choice. You may not be considering a career in the field of technology, but no matter what career path you choose, you will want to prepare for the

technology that will be involved when you enter the workplace. For example, if you are considering becoming a teacher, you will need to learn and keep up with the latest instructional technology you will find in the classroom. If you are considering a career in business, you will want to learn and be able to use the software many companies use; in fact, experience with different types of software may be a very important factor in being hired in the first place. If you are considering a career in the technology field, you will learn that the field is as varied as technology itself. There are opportunities in medical technology, software engineering, computer animation, music recording or film editing technology, database management, and website design and construction, to name a few. Learn whether or not you really love technology and see it as a career path, and then learn about the many different avenues you can explore in this ever-changing field.

Increasing Your Yield

Readings for Practical Application

This chapter, which closes the textbook, was focused on the future: your future. It explored how what you do this year, your first year, can help you when you graduate from college. To that end, this chapter helped you reflect on what you should be doing now, on how your major may or may not define your career choice, and on how you can learn about careers and graduate schools. Of course, choosing a major and a possible career is much more difficult if you do not have enough information about what you will really be doing in the job you choose. That is why this chapter helped you to look at what people do in certain jobs. Finally, once you feel confident in the direction you want to go with your career, you need to learn the most effective way to present yourself in résumés, cover letters, and interviews.

All of this information can be related to the world of technology because technology is always changing and adapting to the needs of people in business and education, as well as in many other aspects of modern life. Just as technology adapts, so do you need to adapt to the ever-changing field in which you hope to build a career. You need to keep up with developments in your field—even now, as a first-year student. As the field changes, so will your opportunities as well as your responsibilities. One of the responsibilities that every student has, regardless of what career he or she wishes to pursue, is to stay current with technology.

In the Textbook Case reading, we take a look at the programming language known as C++. This selection, titled “Arithmetic Operators and Operator Precedence,” examines some of the basics of programming; if you are not familiar with C++, it really will seem like a foreign language. Yet, if you work your way through the very linear explanation of the basics, you will begin to gain at least a rudimentary understanding of the processes behind computer languages.

The second reading, in the Life After College section, looks at the unique intersection of art and technology by profiling someone who helped found a computer animation company. This article, titled “The Man Who Built Pixar’s Incredible Innovation Machine,” gives you a glimpse into one of the many varied career options that are available to people with backgrounds in computer science.

Both of these readings will give you an opportunity to explore the unique discipline of technology, while also expanding on the content of the chapter. Invest in these readings and discover future growth opportunities.

Reading and Study Tips: Technology

Unique Features and Comprehension Strategies

Unique Feature of Textbooks in Technology

Technology and computer science textbooks tend to be very math-oriented.

Strategies for Comprehension

- Complete the appropriate math courses before taking a computer science course.
- Read a computer science textbook like a math textbook. Complete the problems and understand the logic behind the solutions.

Unique Features and Comprehension Strategies *(continued)*

Unique Feature of Textbooks in Technology

Strategies for Comprehension

Computer science textbooks contain a lot of algorithms.

- These are step-by-step approaches to solving problems. Understanding the steps is necessary.
- Think of algorithms as ways to achieve a goal. Once you understand how to do something, doing it becomes easier.
- Work through the algorithms in your textbooks step by step.

You will see a lot of sample code in these textbooks.

- Don't skip over these! Work through the sample code.
- Try typing the program into the computer and compiling the code. This exercise in understanding the errors the compiler generates and working through your mistakes is worth it.

These textbooks are very abstract.

- Try drawing pictures of what you have read to remember the concepts.
- Use the diagrams as tools to reinforce what you have read. Do not ignore them!

You may see some coding examples that are incorrect.

- These examples give you experience in correcting mistakes, which is important in software development.
- Work through the code, find the mistakes, and then fix them.

Reading 1: A Textbook Case

The following excerpt from an introductory computer science textbook was selected to give you an idea of how such a textbook reads. You'll discover that there is a lot of math in the passage. Many students come out of high school with an interest in computer science because they are experts at finding their way around the Internet or are interested in creating video games. What some of them don't realize is that getting a computer science degree, particularly one with a focus on programming, will require considerable skill in math. When reading the passage below, follow the suggestion of reading it like a math book: Read slowly and work your way through the problems deliberately, with understanding.

BEFORE YOU READ

Computers have had a major impact on everyday life in the last 25 years. Use the following space to make a list of all the ways that you have used computers (or computer technology) in the past week. Referring to this list, reflect on how you would have done—or *could* have done—those things if you had not had access to computer technology.

Arithmetic Operators and Operator Precedence

D. S. Malik

One of the most important uses of the computer is its ability to calculate. You can use standard arithmetic operators to manipulate integral and floating-point data types. There are five arithmetic operators:

1. + addition
2. - subtraction
3. * multiplication
4. / division
5. % remainder (modulus operator)

You can use the operators +, -, *, and / with both integral and floating-point data types. You use % with only the integral data type to find the remainder in ordinary division. When you use / with the integral data type, it gives the quotient in ordinary division. That is, integral division truncates any fractional part; there is no rounding.

Since high school, you have been accustomed to working with arithmetic expressions such as the following:

$$\begin{aligned} &3 + 4 \\ &2 + 3 * 5 \\ &5.6 + 6.2 * 3 \\ &x + 2 * 5 + 6 / y \end{aligned}$$

In these expressions, x and y are some unknown numbers. Formally, an **arithmetic expression** is constructed by using arithmetic operators and numbers. The numbers appearing in the expression are called **operands**. Moreover, the numbers that are used to evaluate an operator are called the operands for that operator.

In the expression $3 + 4$, 3 and 4 are the operands for the operator +. Therefore, when + is evaluated, the result of the expression $3 + 4$ is 7. Note that in the expression $3 + 4$, the operator + has two operands. Operators that have two operands are called **binary operators**.

Operators that have only one operand are called **unary operators**. In the expression

$$-5$$

- has only one operand, which is 5, so - acts as a unary operator. Recall that it is not necessary to put - in front of a positive number. Thus, in the expression

$$+27$$

+ is a unary operator.

Unary operator: An operator that has only one operand.

Binary operator: An operator that has two operands.

In the expressions

$$\begin{aligned} &3 + 4 \\ &23 - 45 \end{aligned}$$

both $+$ and $-$ are binary operators. Thus, $-$ and $+$ are both unary and binary arithmetic operators. However, as arithmetic operators, $*$, $/$, and $\%$ are binary and so must have two operands.

The following examples show how arithmetic operators—especially $/$ and $\%$ —work with integral data types. As you can see from these examples, the operator $/$ represents the quotient in ordinary division when used with integral data types.

Example 2–4

Arithmetic Expression	Result	Description
$2 + 5$	7	
$13 + 89$	102	
$34 - 20$	14	
$45 - 90$	-45	
$2 * 7$	14	
$5/2$	2	In the division $5/2$, the quotient is 2 and the remainder is 1. Therefore, $5/2$ with the integral operands evaluates to the quotient, which is 2.
$14/7$	2	
$34 \% 5$	4	In the division $34/5$, the quotient is 6 and the remainder is 4. Therefore, $34 \% 5$ evaluates to the remainder, which is 4.
$-34 \% 5$	-4	In the division $-34/5$, the quotient is -6 and the remainder is -4. Therefore, $-34 \% 5$ evaluates to the remainder, which is -4.
$34 \% -5$	4	In the division $34/-5$, the quotient is -6 and the remainder is 4. Therefore, $34 \% -5$ evaluates to the remainder, which is 4.
$-34 \% -5$	-4	In the division $-34/-5$, the quotient is 6 and the remainder is -4. Therefore, $-34 \% -5$ evaluates to the remainder, which is -4.
$4 \% 6$	4	In the division $4/6$, the quotient is 0 and the remainder is 4. Therefore, $4 \% 6$ evaluates to the remainder, which is 4.

Note that in the divisions $34/5$ and $-34/-5$, the quotients, which are 6, are the same, but the remainders are different. In the division $34/5$, the remainder is 4; in the division $-34/-5$, the remainder is -4.

The following expressions show how arithmetic operators work with floating-point numbers.

Example 2–5

Expression	Result
$5.0 + 3.5$	8.5
$3.0 + 9.4$	12.4
$16.3 - 5.2$	11.1
$4.2 * 2.5$	10.50
$5.0/2.0$	2.5

Order of Precedence

When more than one arithmetic operator is used in an expression, C++ uses operator precedence rules to evaluate the expression. According to the order of precedence rules for arithmetic operators,

$*, /, \%$

are at a higher level of precedence than

$+, -$

Note that the operators $*, /,$ and $\%$ have the same level of precedence. Similarly, the operators $+$ and $-$ have the same level of precedence.

When operators have the same level of precedence, the operations are performed from left to right. To avoid confusion, you can use parentheses to group arithmetic expressions. For example, using the order of precedence rules,

$$3 * 7 - 6 + 2 * 5/4 + 6$$

means the following:

$$\begin{aligned} & (3 * 7) - 6 + ((2 * 5)/4) + 6 \\ & = 21 - 6 + (10/4) + 6 && \text{(Evaluate *)} \\ & = 21 - 6 + 2.5 + 6 && \text{(Evaluate /)} \\ & = 15 + 2.5 + 6 && \text{(Evaluate -)} \\ & = 17.5 + 6 && \text{(Evaluate first +)} \\ & = 23.5 && \text{(Evaluate +)} \end{aligned}$$

Note that the use of parentheses in the second example clarifies the order of precedence. You can also use parentheses to override the order of precedence rules (see, for instance, Example 2–6).

Example 2–6

In the expression

$$3 + 4 * 5$$

* is evaluated before +. Therefore, the result of this expression is 23. On the other hand, in the expression

$$(3 + 4 * 5)$$

+ is evaluated before * and the result of this expression is 35.

Because arithmetic operators are evaluated from left to right, unless parentheses are present, the **associativity** of arithmetic operators is said to be from left to right.

NOTE (Character Arithmetic) Since the **char** data type is also an integral data type, C++ allows you to perform arithmetic operations on **char** data. You should use this ability carefully. There is a difference between the character '8' and the integer 8. The integer value of 8 is 8. The integer value of '8' is 56, which is the ASCII collating sequence of the character '8.'

When evaluating arithmetic expressions, $8 + 7 = 15$, $'8' + '7' = 56 + 55$ yields 111, and $'8' + 7 = 56 + 7$ yields 63. Furthermore, because $'8' * '7' = 56 * 55 = 3080$ and the ASCII character set has only 128 values, $'8' * '7'$ is undefined in the ASCII character data set.

These examples illustrate that many things can go wrong when you are performing character arithmetic. If you must employ them, use arithmetic operations on the **char** type data with caution.

AFTER YOU READ

How did reading this passage compare to reading the history passage in Chapter 8? How did reading it compare to reading the passage from the speech communications textbook in Chapter 5? Did you read it more slowly or more rapidly? What caused the difference? What does this tell you about the importance of background knowledge in reading?

Reading 2: Life After College

Learning about technology is important in this growing high-tech world, but learning about possible careers in high tech is equally important, especially if you love working with technology. What is even more important is knowing that there are so many avenues to explore within the field of technology: medical technology, information technology, robotics, manufacturing, and even entertainment. In Chapter 7, you were able to take a look at the possibilities of careers related to visual and performing arts. Although this chapter has focused on technology itself, this reading shows the very interesting blending of art and technology in the field of computer animation. Specifically, the article profiles Ed Catmull, the cofounder

and president of Pixar Studios, which, in partnership with Disney, created and produced such computer-animated films as *Toy Story*; *A Bug's Life*; *Monsters, Inc.*; *Cars*; and *The Incredibles*.

BEFORE YOU READ

What do you think is involved in producing computer-animated films? What types of people are involved? What is the creative process? Do you think that people who work at a place like Pixar tend to be more artistic or more technical? Why?

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AFTER YOU READ

Do you agree or disagree with Ed Catmull's assessment that "geeks" and artists are similar? Why? What did you learn from this article about a career path in technology that can combine an interest in more than one area? What do you think it takes to work in the computer-animation field? What other jobs can you think of that can combine technology and art?

Here are some other careers related to technology for you to investigate:

- Computer-aided designer
- Computer installation and test specialist
- Database analyst or manager
- Information scientist
- Information systems manager
- Software engineer
- Systems analyst
- Webmaster
- Online services manager
- Technology consultant
- Telecommunications manager

And there are many more!

Compounding Your Interest: Further Readings

3D Café

www.3dcafe.com

Basta, N. (2007). *Careers in High Tech*. New York: McGraw-Hill.

Computerworld Careers

www.computerworld.com

Farr, M. (2006). *Top 100 Computer and Technical Careers: Your Complete Guidebook to Major Jobs in Many Fields at All Training Levels*. St. Paul, MN: JIST Works.

Heller, S., & Womack, D. (2007). *Becoming a Digital Designer: A Guide to Careers in Web, Video, Broadcast, Game and Animation Design*. Hoboken, NJ: Wiley.

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So, what's your major?

How do *you* answer this question? Are you still searching for that perfect major? College is a time to discover who you are, what you love, where you want to go, and ultimately what major is right for you.

Discover your major in the following places...

Who You Are	What You Value
Your Courses	Your Hobbies
Products You Use Everyday	The Newspaper and Television
Your Dream Jobs	Your Learning Styles and Study Habits
Experiences You Have Had or Hope to Have	What You Read
Internships and Job Shadowing	People You Meet

Deciding on the right major is a journey, but it is one well worth taking.

For more ideas on choosing your major, check out *35 Ways to Discover a Major* by Kathleen Hartman.