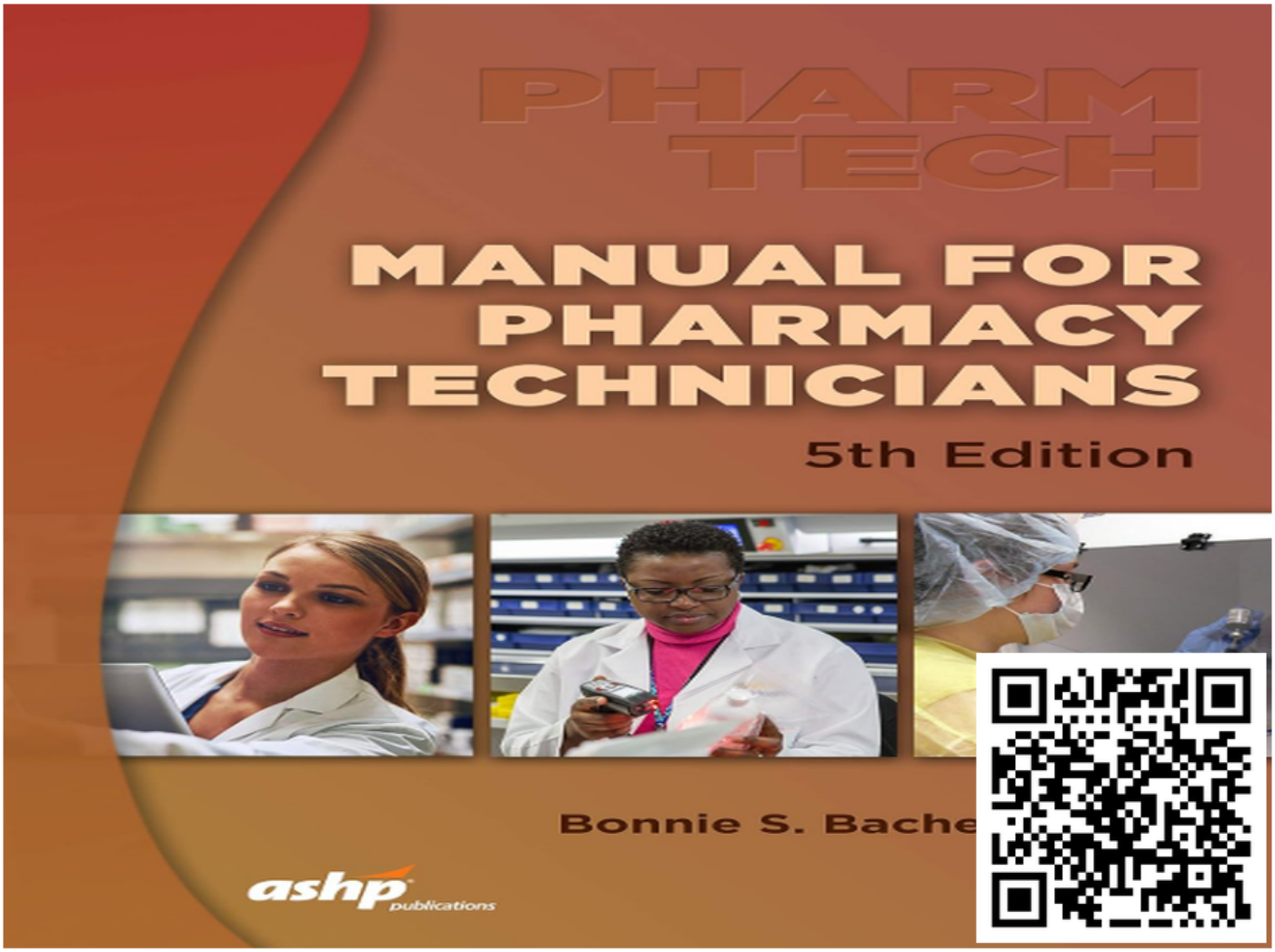

eBook

MANUAL FOR PHARMACY TECHNICIANS

5th Edition

Bonnie S. Bachenheimer

ashp

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Dedication

To the pharmacy technicians I have worked with who are such valuable partners in patient care—your knowledge and dedication to the profession allow us to perform at the highest level possible.

To the future pharmacy technicians and their educators—you must be fearless in using your curiosity and creativity to push the boundaries of current practice so that we can continue to move the profession forward.

Bonnie S. Bachenheimer, PharmD

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I would like to acknowledge the following groups and individuals for their contributions to this book:

- The Illinois Council of Health-System Pharmacists (ICHP), for giving me the opportunity to be editor of this edition.
- The support staff at ASHP—especially Ruth Bloom, Elaine Jimenez, and Daniel Cobaugh—for their patience, encouragement, and assistance throughout the process.
- All of the contributing authors and reviewers. Their efforts are the main reason that this book is such a high quality and highly respected reference book.
- My pharmacy colleagues for their advice and enthusiasm regarding the book and for sharing my passion for the profession of pharmacy.
- My husband Eric, and my children, Sara, Ben, and Max, for their love, support, and understanding throughout the publication of this book.

Bonnie S. Bachenheimer, PharmD

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Preface

This is an exciting time to be in the profession of pharmacy! Pharmacists continue to be more involved in direct patient care, drug therapy continues to become more complex, and ensuring appropriate and safe medication use continues to be a major focus of our profession. Pharmacists rely on the support of pharmacy technicians to provide quality patient care, and technicians are valued members of the healthcare team. As roles continue to expand and evolve in additional responsibilities and leadership, it is imperative that pharmacy technicians be well trained. Technician certification is a minimum requirement for technicians in many states.

The *Manual for Pharmacy Technicians*, 5th Edition, the *Pharmacy Technician Certification Review and Practice Exam*, 4th Edition, and the *Workbook for the Manual for Pharmacy Technicians*, 2nd Edition, were constructed as instructional manuals for pharmacy technicians enrolled in formal training programs, for those wishing to achieve certification, and for training purposes at the workplace. This fifth edition has been updated to reflect the changing roles of pharmacy technicians and of the profession, and additional Web content will also appeal to students and instructors.

The fifth edition has significant changes in its appearance, organization, and content with more graphics, figures, and tables, as well as other features to stimulate students' interest and inspire instructors. The order of the chapters has changed from the previous edition to follow the structure of most curriculums and to complement the ASHP model curriculum.

The fifth edition is divided into six parts:

- **I.** Setting Your Goals and Objectives
- **II.** Introduction to Pharmacy
- **III.** Science Knowledge and Skills
- **IV.** Practice Basics
- **V.** Business Applications
- **VI.** Getting Started

Appendixes: Medical Terminology and Abbreviations; Confusing Drug Names; Top 200 Drugs of 2019; Understanding Drug Information, Drug Names, and Pronunciations; ASHP Statement on the Role of Health-System Pharmacists in Emergency Preparedness; and a Glossary.

The chapters are organized as follows:

- Outline of the chapter
- Key terms
- Learning outcomes
- Introduction
- Summary
- Resources and references
- Self-assessment questions and answers

The pedagogical features in the chapters include the following:

- **Key Points** are highlighted in the chapter.
- **Rx for Success** boxes include practice tips, pearls, and words of wisdom. They provide additional insight into important topics with the goal of helping the reader achieve success on the job and in their career.
- **Safety First** boxes stress prevention, identification, and management of drug-related problems and point out alerts and cautions relating to the safe use of medications.
- **Technology Topics** boxes highlight the use of technology in pharmacy. This edition integrates the latest technology into individual chapters both within the text and by using this feature.

The following are new chapters to this edition:

- **Chapter 1: How to Be a Great Student: Strategies for Effective Learning.** This new chapter provides strategies for effective learning, including self-motivation, emotional intelligence, fixed versus growth mindset, grit, time management, and self-advocacy.
- **Chapter 4: Community, Ambulatory Care, and Home Care Pharmacy Practice.** The topics were combined to form a new chapter in this edition.
- **Chapter 5: Hospital and Specialty Pharmacy Practice.** The topics were combined to form a new chapter in this edition. This chapter describes medication reconciliation and the rapidly expanding field of specialty pharmacy as well as opportunities for pharmacy technicians in that setting.
- **Chapter 16: Pharmacy Informatics and Technology.** This new chapter highlights a growing segment of pharmacy. It provides information on technology used in inpatient and retail settings and describes specialized roles for pharmacy technicians in informatics.
- **Chapter 19: In the Real World.** This chapter covers finding and choosing the right job, creating a resume and cover letter, applying, and interviewing. It offers tips for thriving in the real world, such as creating a vision statement, mentorship and sponsorship, continuing education and professional development, keeping up with practice, working effectively with teams, and becoming involved with professional organizations.

Pharmacy Technician Certification Review and Practice Exam

The *Pharmacy Technician Certification Review and Practice Exam*, 4th Edition, is a self-study guide designed as a companion to the *Manual for Pharmacy Technicians*, 5th Edition. Although the *Manual* is designed to provide a broad overview of essential knowledge and skills, the goal of the *Review and Practice Exam* is to prepare technician students for the pharmacy technician certification exam (PTCE) offered by the Pharmacy Technician Certification Board, as well as other certification exams.

The *Review and Practice Exam* contains chapters focused on each section of the PTCE, as well as a thorough calculations review, a section on commonly prescribed medications, and important test-taking tips and strategies. We recommend using this book in conjunction with the *Manual* as a helpful study aid in preparing for certification.

Workbook for the Manual for Pharmacy Technicians

The *Workbook for the Manual for Pharmacy Technicians*, 2nd Edition, helps technician students master the concepts and skills discussed in the *Manual for Pharmacy Technicians*, 5th Edition. By asking students to apply their knowledge, the exercises in the *Workbook* reinforce key points and allow for targeted assessment. Chapters in the *Workbook* complement those in the *Manual*; thus, instructors and students can easily work between both books. Each chapter includes a wide range of exercises, such as multiple-choice, true and false, fill in the blank, concept and key term matching, short answer, and activity questions. Where appropriate, calculation, conversion, and visual identification questions are included. We recommend using this book alongside the *Manual* to enhance learning.

A lot of hard work, time, and energy have gone into making this *Manual* a valuable resource for pharmacy technicians and their educators. We hope that you are as excited about this new edition as we are!

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Editor

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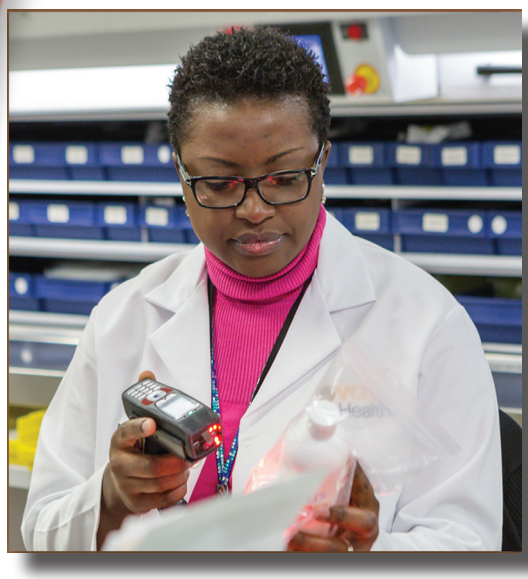

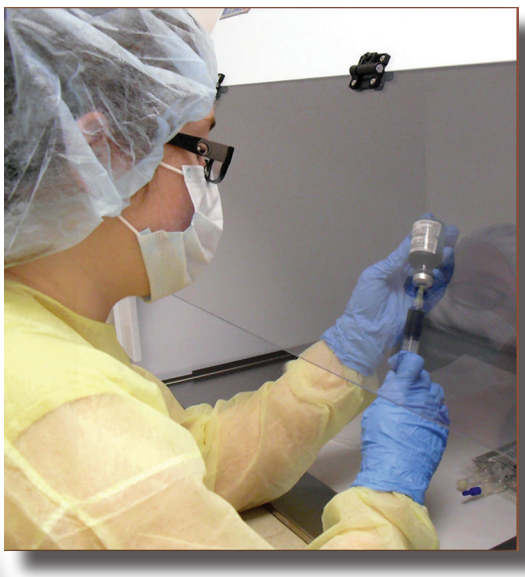

PART ONE
Setting Your Goals and Objectives

1. **How to Be a Great Student: Strategies for Effective Learning..... 3**
   Jennifer Phillips and Sarah M. Wieczorkiewicz

CHAPTER 1

How to Be a Great Student: Strategies for Effective Learning

Jennifer Phillips and Sarah M. Wieczorkiewicz

CONTENTS

Strategies for Effective Learning
Self-Motivation
Emotional Intelligence
Grit
Mindsets
Time Management
Self-Advocacy
Summary
Resources
References
Self-Assessment Questions
Self-Assessment Answers

LEARNING OUTCOMES

After completing this chapter, you will be able to

- List key strategies for effective learning.
- Differentiate between intrinsic and extrinsic motivation.
- Apply the principles of emotional intelligence.
- List characteristics of individuals with high levels of grit.
- Differentiate between fixed and growth mindset.
- Develop time management strategies that can help when learning.
- Identify strategies for self-advocacy.

KEY TERMS

Emotional intelligence	The ability to understand and manage the emotions of oneself and others.
Extrinsic motivation	Motivation based on a reward system such as grades or money.
Fixed mindset	The belief that aptitude is not changeable.
Grit	Perseverance and passion for long-term goals.
Growth mindset	The belief that outcomes can be influenced by how much effort is applied to a task.
Intrinsic motivation	Motivation based on a sense of fulfillment or satisfaction from the task.
Mindset	The way individuals see and interact with the world around them.
Relationship management	The ability to have healthy relationships with those around you.
Self-awareness	The ability to accurately identify emotions while they are happening to you.
Self-management	The ability to control emotions.
Social awareness	The ability to recognize and understand the emotions of those around you.

Although intelligence is important to a learner's success, it is not the only element. There are many examples of highly gifted students who fail at school and students of average intellectual ability who can overcome the challenges with hard work and determination. So, what exactly makes a great student? Many factors, including self-motivation, emotional intelligence, mindset, and grit can have a profound impact on your attitude toward learning. Other attributes, such as time-management and self-advocacy can help make the learning process more efficient. The purpose of this chapter is to provide an overview of some learner-centered strategies that can help you excel in a variety of settings and achieve optimal and effective learning.

STRATEGIES FOR EFFECTIVE LEARNING

Self-Motivation

Motivation can positively influence learning and academic performance. There are two types of motivation: extrinsic and intrinsic.[1] **Extrinsic motivation** involves engaging in behavior or an activity to earn rewards or avoid punishment—the "carrot or stick" approach. An example of extrinsic motivation is getting rewarded with an *A* for performing well on an exam. **Intrinsic motivation** comes from within and arises from a genuine interest in a behavior or an activity because it is perceived to be of value. An example of intrinsic motivation would be auditing a class to learn for the sake of learning. Although extrinsic motivation is often useful in achieving short-term goals, the attraction of the "reward" eventually fades; thus, people with more intrinsic motivation tend to outperform extrinsically motivated counterparts in the long run.[1]

Stefanie Weisman, author of *The Secrets of Top Students*, asked her students to rank how much they attribute specific factors to their academic success on a scale of 1 to 10, with 10 representing the most important factor.[2] What is interesting about their responses is that the top six factors on the list are examples of intrinsic motivation: determination, hard work, desire to learn, self-pressure, ambition, and self-control. These factors reflect an internal aspiration to succeed. Other factors such as parental and peer pressures are at the bottom, suggesting that top performers are usually seeking more than just a grade or class rank. They have a genuine interest in what they are learning and an urge to develop a more in-depth understanding of the material.

Motivation can be influenced by previous failures or negative experiences in a learning environment (e.g., intimidation or ridicule). Remotivating yourself after these types of experiences can be a challenge, but it can definitely be done. Many of the examples so far have been reflective of positive motivation. There can, however, be negative motivation. Negative motivation can be quite destructive and can result in frustration, intimidation, and even reluctance to step outside of your comfort zone to attempt new challenges for fear of failure or consequences.

Motivation is an important component to successful learning. Think about what motivates you to learn. Is it intrinsic or extrinsic in nature? If you find that most of your motivators are extrinsic in nature, do some reflection and try to recognize some of the intrinsic factors that helped peak your desire to go into the pharmacy field to begin with. These will help you stay committed to your learning, even when things are challenging.

Intrinsic motivation, which results from a sincere interest in learning, can lead to enhanced academic performance.

Emotional Intelligence

Emotional intelligence is defined as "the capacity that enables an individual to perceive, use, understand, and manage his or her own and others' emotions."[3] It can be thought of as a kind of social intelligence that enables you to respond to your environment in a rational way

instead of an emotional one. Emotional intelligence can be measured using emotional quotient (EQ). Individuals with high emotional intelligence are less likely to get rattled when a conflict arises and are much more likely to have positive working relationships with their peers. Because short- and long-term stress can affect your ability to learn and remember, taking the time to develop emotional intelligence skills will benefit you while you are learning.[4] It can also have a positive effect on the quality of relationships you have with your peers, your coworkers, and your loved ones. There is an economic advantage as well. Studies have shown that every 1-point increase in the EQ scale translates to an increase of about $1,300 in annual salary.[5]

Emotional intelligence has been described as centering around four domains[5]:

1. Self-awareness
2. Self-management
3. Social awareness
4. Relationship management

Self-awareness pertains to your ability to accurately identify emotions while they are happening. To do this effectively, it is necessary to spend time reflecting on how you respond to a variety of different stressors. Think about who and what triggers extreme emotions in you. To apply this to the learning environment, what kinds of reactions do you have when you earn good or bad scores on exams or assignments? How do you feel when you are learning challenging new material or when you have a big exam coming up? Keep a journal of your emotions and use it to study your reactions so that you can get to know yourself under stress. Seek feedback from teachers, supervisors, and trusted peers, who may be able to offer additional insight on your reactions or advice on alternative ways to handle them.

Self-management pertains to your ability to control the emotions that you are experiencing at any given time and mindfully choose not to express negative emotions that may have unintentional short- or long-term consequences. An example of this is remaining calm when you are in a stressful situation such as during an exam or an argument.

There are many strategies you can use to help manage emotions that might get in the way of your success:

- Counting to 10 before you say or do anything. This can sometimes help quiet the fight-or-flight response that is raising the adrenaline in your body.
- Delaying your response or "sleeping on it" before you have a difficult conversation with a coworker.
- Writing an e-mail but not sending it until you have had time to review it later when you are calmer.
- Seeking advice from someone who is not emotionally connected to the issue.

Social awareness pertains to your ability to recognize and understand the emotions of those around you. This aspect of emotional intelligence is helpful when you are working in voluntary or assigned groups or teams. It involves reading people—paying attention to their body language, tone, and facial expressions. Ways to develop social awareness skills include the following:

- Spending time appreciating, observing, and listening to those around you.
- Being present in the moment. If there is down time in your schedule, talk to those around you, rather than checking your phone. You might learn something interesting or you might form a connection that can help you build your professional network.

Relationship management pertains to your ability to have healthy relationships with those around you. Remember that you are half of every relationship that you are in. This gives you responsibility. All parties involved in a relationship need to put in effort for it to work. Try to find value in every relationship you have—coworkers, peers, loved ones. There is something you can always learn from the people around you if you pay close enough attention. When dealing with conflicts, try the following:

- Instead of worrying about what the other party is or is not doing, focus on the part of the conflict that you "own" and put your energy toward correcting or mending that part. You will find that when you do that, the other person involved in the conflict is much more open to owning their part of the conflict as well.

- Make every effort not to give mixed signals when working with others, let your actions match your words.
- Learn how to give and take feedback well. When receiving feedback, it may be natural to feel disappointed if it is not positive, but try to focus on the facts contained within the message instead of the person giving it or the emotion you feel.
- View feedback as an opportunity to improve, rather than as an attack on you.
- Be respectful and open to change; it will reflect well on others' opinion of your professionalism.

When giving feedback, try the following strategies to increase the quality of your feedback[6]:

- When providing feedback, being as specific as you can is a lot more helpful to the recipient. For example, a general comment such as "you are not doing well on the phone" is not as helpful as a more specific comment, such as "try to answer the phone before the third ring, which will improve customer satisfaction."
- Providing guidance on how to improve will also help the recipient of the feedback get to where they need to be.
- Setting goals and timelines also helps establish accountability. In the example above, you might add "By the end of today, I'd like you to try to answer every phone call by the first or second ring."

When giving or receiving feedback, use the principle of self-awareness and self-management described previously in this section to be mindful of tone and maintain professionalism at all times.

Taking the time to build your emotional intelligence skills can help you be more successful as a student and can ultimately help you be a better member of the healthcare team. The sooner you start, the sooner you will reap the benefits. One study found that second-year nursing students who had a higher level of emotional intelligence were more likely to have a higher annual average grade.[7] Another found a correlation between emotional intelligence and performance in medical school, especially for those who were better with regulating their emotions.[8] Although there are no data on the relationship between emotional intelligence and performance in pharmacy technician students, it is reasonable to assume that the benefits seen with other healthcare education students would also be seen in the pharmacy realm.

If you are looking for more information on how to improve your emotional intelligence, there are numerous print and online resources available. There are many tests you can take to determine what your EQ is. There are also many self-help books with specific strategies for improving each domain of emotional intelligence. Check out your local or online bookstore, library, or do an Internet search to find these resources (see the resource section at the end of this chapter for suggested references).

Grit

Learning is not a risk-free enterprise. Every learner, at some point in time, will experience setbacks or failures. How you interpret and react to these experiences can have an important impact on your future learning and your overall success. What helps some learners persevere and try harder while others give up when things become challenging? One important concept, **grit**, has been linked to individual success and mental well-being.[9]

Grit is defined as "perseverance and passion for long-term goals."[10] One often thinks of grit when considering the physical demands encountered by members of the military or successful athletes. However, grit can also be applied to the learning process. There are many mental and emotional demands associated with studying and learning in a field like pharmacy, where new drugs are constantly emerging, and technology is always evolving.

How can a pharmacy technician or student use the principles of grit to meet these demands? A psychologist and leading researcher in this field notes that the following characteristics separate the grittier people from the rest: interest, practice/study, purpose, and hope.[11]

Interest

Being interested or passionate in the work that you do is crucial to maintaining grit. However, it is important

to note that your job or your studies may not always be interesting. There may be some aspects or topics that you enjoy more than others. In these instances, try to think of how the little things that you do not enjoy as much relate to the bigger picture of what you are doing. Sometimes students do not realize the importance of a given topic they are learning in a classroom until they are actually in the workplace setting. Then, they wish they could go back to the classroom to pay more attention to that topic. If you find yourself struggling with the relevance of a topic or skill, consider asking your instructors or someone who is already practicing where and how they use that skill. That may help pique your interest in that topic once you know how and when you might use it.

Practice/Study

Will Durant said, "We are what we repeatedly do. Excellence, then, is not an act, but a habit."[12] Even the most naturally talented musician has to practice to progress. In fact, people who practice to a greater extent may progress further than those with more natural talent who practice less. The equivalent of practice in a classroom or learning environment is studying. Deliberate studying may have an even greater impact on your success. Take the time to identify the ideas, concepts, or skills that are the hardest for you and allocate more time to studying them as opposed to reviewing the material that you already feel very comfortable with. This will be more uncomfortable, but pushing yourself to study in this way will be a more effective use of your time. A lot of people give up when things get challenging, so when you finally "get it," you will feel proud of yourself and the time invested will have been well worth it.

Purpose

Successful, "grittier" learners are those who see learning as a way of achieving their goal or purpose in life. On days when you feel "burned out," try to re-energize by thinking about why you chose this profession. What do you find meaningful about your current or future role? Some people may choose to write a mission or a vision statement that can be reflected on when they need a little additional motivation. See Chapter 19 for more information on mission and vision statements. Being loyal to your purpose and considering it in everything that you do can help increase your grit. Think about all of the competing priorities that you have in a given day and try to organize your day around the tasks that directly relate to your purpose. If studying and being successful in school is truly important to you, then give yourself the time you need to be able to reach that goal.

Hope

People with high levels of grit believe that their goals are always within their reach. When they have setbacks, they never lose sight of them. They get up, dust themselves off, and keep moving forward. Some strategies to help you stay on track when faced with adversity include the following:

- Develop a growth mindset (see the discussion in the next section).
- Practice optimistic self-talk.
- Ask for help when needed. Your instructors, employers, or peers may be able to help you understand a difficult concept or identify strategies to solve a difficult problem. They may also be able to help you see things from a different perspective.

You may think that a certain setback is a very big deal, but others with more experience may help you see that it is not as significant as you think it is. They can help you identify learning points from the experience that you can use in the future.

Grit has been shown to be an important determinant of success in a variety of different areas independent of natural ability, talent, or intelligence quotient. Think about your own grittiness. Is it where you would like it to be? If not, consider taking the time to work on developing it by reflecting on the characteristics described above (the resources section at the end of this chapter includes links to videos, websites, and other reading materials).

R_x FOR SUCCESS

Developing grit can help you be a more successful student by helping you stay focused on your goals and not letting setbacks or failures keep you from reaching them.

Mindsets

Mindset refers to your ideas and opinions about the world around you. It often shapes your interactions with others as well as your thoughts, behaviors, and actions.[13] Knowing how you look at the world and finding ways to identify and modify mindsets may help promote more effective learning.

Individuals with a growth mindset believe that outcomes can be influenced by how much effort is applied to the task. They believe they can achieve anything if they just put their mind to it. As such, these types of individuals tend to appreciate tasks that require effort and often seek feedback from others. They see setbacks and failures as opportunities to gain valuable information to put themselves back on the right track. They tend to measure success based on successful application of a process or the amount of effort put in, not the outcome.

Individuals with a **fixed mindset**, on the other hand, see the world as unchangeable. They believe that people are born with certain traits or skills, such as intelligence or athleticism and that no amount of practice or training can change what has been predestined for them. Those with this mindset focus on the *outcome* rather than the *process*. They tend to use labels for themselves or others (e.g., "I'm bad at math;" "he's a very good athlete") based on the outcome as opposed to the amount of effort put in. In many instances, having a fixed mindset can hinder learning (**Table 1-1**).

Studies have shown that using a growth versus fixed mindset can lead to better educational outcomes.[14,15] However, the benefits of a **growth mindset** extend well beyond the learning environment. Having a growth mindset can positively affect mood, resilience, and mental health as well as social and professional relationships.

The good news is that mindsets can be changed; a person with a fixed mindset can learn to have a growth mindset. However, this process may take some time and conscientious effort. If you are interested in changing your mindset (especially as it pertains to learning), try the following:

- Consider doing some self-reflection or journaling. Think about your reaction to positive or negative outcomes. Do you tend to focus on the outcome only (fixed mindset) or do you look for information that can help you to be successful the next time you encounter a similar task (growth mindset)?
- Consider alternative ways you can think about the situation. The amazing thing about using this strategy is that just thinking about a growth mindset will help you move closer to having one!

If you are interested in finding out more about your own mindset, a self-assessment can be found at www.mindsetworks.com/assess/.[16] However, it is important to note that you may have a different mindset for each aspect of your life (i.e., educational, professional, social). Being aware of your mindset is the first step

Table 1-1. Fixed Versus Growth Mindset

	Fixed Mindset	Growth Mindset
Attitudes	■ Believes people are born "smart" ■ Questions intelligence when things are challenging ■ Measures self-worth based on outcomes	■ Believes that work and effort results in knowledge ■ Sees challenges as a way to become better ■ Measures self-worth based on effort
Behaviors	■ Dislikes hearing feedback ■ Gets discouraged by negative feedback	■ Asks for feedback ■ Uses negative feedback to grow
Thoughts	■ "I am just not naturally good at this."	■ "I can do this if I put in the time and effort"

in trying to develop strategies to use your mindset to achieve better outcomes. See **Table 1-2** for an example scenario involving mindsets.

A growth mindset is more conducive to the learning process than fixed a mindset.

Time Management

The ability to manage your time effectively is an important component to your success as a student. Not surprisingly, studies have shown a positive relationship between time management skills and academic achievement.[17-20] Moreover, developing time management skills now will also help you be more productive and efficient when you enter the workplace. Below are some time management tips you may find helpful.[21,22]

Table 1-2. Scenario

Mindset Scenario
You start working at a large, inpatient pharmacy with many pharmacists and technicians. Your previous job was in a very small, critical access hospital with only one technician and one pharmacist. After hiring, you undergo a training period for several weeks. At the end of the first week, your trainer gives you formal feedback. The trainer lists several mistakes but also good performance in other areas. How would individuals with a fixed mindset or a growth mindset react to this feedback differently?
Fixed Mindset People with a fixed mindset might feel discouraged after hearing this feedback. They might have feelings of inadequacy or self-doubt. They might react defensively to the feedback, argue with the trainer, or choose to only focus on the negative feedback and use that to determine their attitude or self-worth. An example remark from someone with a fixed mindset might be, "Maybe this is not the right job for me. I only know how to work in a small hospital. Maybe I should stick with that."
Growth Mindset People with a growth mindset might feel disappointed. However, they will try to use the trainer's feedback to help improve performance. They are more willing to ask questions that focus on what can be done to improve and use that to help guide future performance. They might balance the negative and positive feedback and will develop a sense of self-worth based on how much effort they have put in that week. An example remark from someone with a growth mindset might be, "This week was hard, but I have learned a lot. I am proud of how much effort I have put in to try to learn all of these new processes. I made a few mistakes, but I will use my trainer's suggestions to try and do even better next week."

Work Habits

Get organized. Design a productive workplace. Find a place that allows you to work efficiently with a minimum number of distractions. Also ensure that you have enough space to spread your work out, if needed. Organize your workspace so that you have quick and easy access to everything you need. You may want to stock this area with pens, pencils, notepads, sticky notes, calculators, and other materials you might need. This will help eliminate time spent looking for materials to complete your work. Ensure an adequate amount of lighting and supplies are available. If you are using technology, make sure you have access to the Internet and chargers.

Make a "to do" list. Keep a running list of all of the projects and assignments that are due. This will help ensure that you do not forget about any major obligations. An article on time management recommends creating three lists[21]:

1. ***Daily to-do list***—All of the tasks that need to be completed that day, such as homework due tomorrow.
2. ***Projects to-do list***—All of the projects you have and when they are due. This list should be used to create the daily to-do list and should be reviewed several times a week.
3. ***Long-term to-do list***—The projects that you would like to or need to work on sometime in the future, but for which there are not currently any assigned deadlines. This list should be reviewed about once a week to see if you can move any of these projects to the projects to-do list. Spending as little as one hour a week working on these long-term projects can lead to meaningful progress over time.

Prioritize work activities. Often you will have many things you are working on simultaneously. Obviously, you cannot work on all of them at the same time. Take time each day to prioritize what needs to be done first and work on things in that order. It is tempting to work on the easier things or the things you are most

interested in first, but although this may make today easier, if it is at the expense of missing an important deadline, it will make your future stressful. Be mindful of deadlines and work first on things that have the earliest due dates.

Eliminate distractions. It is essential that you create an area with few distractions so you can concentrate. Toward that end, the following is suggested:

- Attach a "do not disturb" sign if you are working in a room with a door. This lets others know not to bother you and will help minimize unwanted interruptions.
- Stay in the zone. When people are talking around you, avoid getting pulled into the discussion, especially if it is not relevant to your work.
- Stay focused on the task at hand.
- Consider using earplugs or headphones if you have to work in shared areas. This helps minimize the chance that you will be distracted by a nearby conversation.

Avoid procrastination. Nearly everyone has procrastinated at some point in time. However, most will testify that it caused more harm than good in the long run. Putting off an unpleasant task is human nature, but those who muster the self-discipline to see the task through will ultimately be successful in the end. Strategies to help avoid procrastination include the following:

- Break down larger projects into smaller "chunks." This can make the project seem less overwhelming, and it allows you to work on the project piece-by-piece.
- Schedule time to work on one piece of a project on multiple days, and you will be amazed at how much you get done over time.
- Use friends or colleagues to motivate you by working on the task with a group. Even if the project is an individual one, you can all go to the same place (e.g., library, coffee shop) to work on it. The peer pressure of watching others stay committed to the project may help keep you on task as well.
- Think of the reward at the end. Imagine how proud you will feel when you are done tackling a big project and how much less stress will be on your shoulders.

When you do finish a big project or task, consider using a journal to write a note to yourself to document how you feel once it is over. Save the note somewhere in your workspace to read the next time you are faced with a large project. This may help motivate you to put in the work. Reward yourself with a little treat every time you meet your goal. Use little rewards (e.g., a delicious treat, or 30 minutes of "you" time) for each part of the project that you finish and a big reward for completing the whole project (e.g., a trip to the spa, or a night out with friends).

Determine if you are a rabbit or a turtle. Rabbits work fast, throwing down ideas as fast as they come to them. They do not worry about having the perfect word or perfect grammar. As a result, they usually have a lot of ideas, but they need to allocate time at the end to clean them up. Turtles, on the other hand, work slowly, getting hung up on finding the perfect word or phrase, and they cannot move on until they do. As a result, it takes some time for them to get a finished draft, but when they do, it is almost perfect and requires only minor revisions. Both of these styles have their advantages. However, if you find that you are losing momentum or having a great idea that escapes you, try adopting the rabbit style. This helps keep the flow of ideas going. Just be sure to schedule time at the end to revise the final product.

Creative Scheduling

Schedule down time. In addition to scheduling all of your responsibilities, do not forget to also schedule time for yourself. Too often, we forget about ourselves in the hustle and bustle of everyday life, but having time to relax is an important component to being healthy and resilient. Here are a few suggestions for down times:

- Schedule time with your family and friends to help you reconnect.
- Schedule time for yourself to do the things you like to do; this will help reduce the effects of stress and will help you rejuvenate.
- Schedule time for sleep! Most adults need between 7.5–9 hours of sleep a night, and sleep has a huge impact on memory. Research has shown that people who are sleep deprived are 19% less efficient in their ability to recall memories.[23]

Allocate more time than you think you will need. A general rule of thumb is that it will almost always take you more time to finish something than you think it will. Unexpected issues always arise; you get distracted, you have technology issues, or you are not as productive as you thought you would be that day. This is especially true when things are new because it takes time to learn the process in addition to the material. To avoid this, get in the habit of allocating more time on your calendar than you think you will need. For example, if you generally spend 30 minutes on homework, allocate 45 minutes. If you do not need the extra time, you can always spend it working on something else or use it to reward yourself for a job well done—take a walk, relax, or take time to talk to a friend.

Change the deadline. Some people find it helpful to aim for finishing a major project a few days in advance of when it is actually due. This way, if things do not go quite as planned, there is extra time built in to finish it. Alternatively, if the project is finished early, there is time to review it, proofread it, and refine the final product.

Time-Saving Technologies

Use a portable calendar. If you use a day planner to schedule your life, make sure to have it with you at all times. Alternatively, you may want to consider using an online calendar. Many e-mail clients offer an online calendar with their e-mail service. This is especially helpful if you are able to access it on mobile devices, such as tablets or smart phones. This helps you keep track of all of your obligations for that day. Many e-mail clients also give you the ability to have multiple calendars. You can view them separately or merge them into a master calendar and also share different calendars with different people (i.e., members of your family or study groups). Finally, many calendars also integrate GPS location and driving directions into calendar entries. You can enter the meeting place's address to the "location" section of a calendar entry and, when this is clicked (e.g., on a smart phone or tablet), driving directions will automatically appear. This can help save you time as well.

Use shared documents. There are many online programs you can use to collaborate with others when working on projects such as GoogleDocs, SharePoint, and Dropbox. These programs allow multiple users to edit documents from any place where they have access to the Internet. The "owner" of the document sets permissions for who can access and edit the documents. Using these programs means that all members of a group do not have to be in the same physical space to work on a group project. Even if you are not working on a group project, these types of document servers can be used individually as a place to store all of your documents in one place. In most instances, as long as you have access to the Internet, you can retrieve all of your documents. This means you do not have to lug around paper copies or flash drives everywhere you go. However, be aware that certain employers block access to some of these sites, so it may be wise to do some investigating first and use the site that offers you access in the greatest number of places.

Use reminders to keep you on track. Many online calendars offer the option of setting an alarm a few minutes before an event starts. This can help ensure that you arrive on time for an event. However, these reminders do not have to be limited to events. Consider using notifications to remind you to start studying or to remind you that it is time to move on to the next subject or topic you are studying. In addition, creating calendar entries for due dates or deadlines can help you stay on track as well.

Flag e-mails. In addition to calendar reminders, certain e-mail clients also give you the option of flagging certain e-mails. This option is helpful if you need time to research or think about an e-mail before responding, but you are afraid that it might get "buried" in your daily inbox e-mail. When an e-mail is flagged, it is usually made to have a different color, font, or shading, or it is brought to the top of your mailbox queue.

Use recordings. If your training program involves attending live lectures, consider recording them and listening to them when you are walking, cleaning, or driving. Just be sure to get permission to record the lectures, as many colleges do not allow it without permission from the instructor. If you are studying independently or with a group, record yourself or a group member reviewing the study material and do the same. This is a great way to use down time in a more productive way.

Delegate Effectively

Complete chores more efficiently. You may think you have no one to delegate anything to, but you might be surprised. In today's world, it is becoming increasingly easy for everyone to delegate. For example, many grocery stores allow you to order your groceries online and pick them up at the entrance to the store. This can save you time as you no longer have to walk down the aisles. In addition, many restaurants (including fast-food establishments) offer the service of placing your order ahead of time and picking it up when you arrive. Or to save even more time, many restaurants offer delivery service right to your door.

Use group work effectively**.** Many colleges and higher education programs utilize group work. When working on group projects, make sure to do the following:

- Divide all work fairly.
- Make expectations clear.
- Make sure everyone knows what they have to do and when the deadline is.

These clarifications will help make the process more efficient and can eliminate the problem of "double" work or team members feeling overwhelmed or disgruntled with the division of tasks.

Join study groups. Working with others may help you understand the material on a deeper level. Other members of your group may offer insight, perspectives, or study tips that you were unaware of, which can also help save time. Have your study group members divide up the content and take turns presenting a review of the material or putting together study aids. This can save all of you time!

Reduce Information Overload

Manage e-mail burden. Unsubscribe from e-mail listservs if you do not read the content on a regular basis. Some e-mail clients have evolved to automatically send certain types of e-mail to its own folder or tab. For instance, some have a "promotional" tab, and a "social" tab in addition to the "inbox" tab. If your e-mail does not automatically do this, do some investigating to see if you can change the settings to manually allow such filtering. If you receive e-mail on your phone, you may also consider changing the settings to turn off notification alarms, especially when your work requires focus and concentration, such as when you are working on an important project or studying for a big test. In addition, some e-mail clients have a pop-up notification that lets you know when you have an incoming message. You may want to consider deactivating that setting to avoid the distraction.

Manage social media alerts. Social media adds to information overload. When studying or working on tasks that require your full attention, turn off notifications for incoming social media applications. Most people have a high number of friends/followers and receive many, many notifications a day. Every time you stop to read one, it not only takes time away from the task you were working on, but it also distracts you, which can cause a break in your train of thought or lead you to lose a great idea.

Let them wait. Do not feel the need to instantaneously respond to every e-mail, call, or text message that you receive. This might seem like an efficient use of your time, but it has the unintended consequence of ruining the momentum for the task you were working on. Therefore, unless it is truly an emergency, most things can wait. In some instances, it might be better to not open an e-mail or a text message, as in some instances, the sender will get a "read receipt," which may lead to anticipation of an immediate response from the sender. If you do not read the message, most individuals will assume that you are preoccupied with something else.

Although some individuals may be naturally better at time management than others, the good news is that these types of skills can be taught and learned. Time management training courses have been used successfully to improve student success.[19] These programs have also shown a benefit in improving job satisfaction.[20] If your school or workplace offers this type of training, take advantage of it. Even people who have great time management skills can benefit from tips and tricks to improve. If you do not have access to programs, start by using the strategies outlined above.

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Having good time management skills is very important to being an effective student. Also, developing them now will help prepare you for the busy pharmacy work environment.

Self-Advocacy

One of the most important things you can do to maximize your learning is to be your own advocate. This means making sure that you have all of the information and training you need to safely and effectively get the job done in a school, or in an experiential or work environment. Asking questions, being proactive during training, and asking for help are strategies for self-advocacy.

Ask Questions

When you are introduced to new material, there is often a steep learning curve in the beginning. Be patient with yourself and have realistic expectations. Try to be a curious student. Curious students not only ask questions, but also actively seek out answers to their questions. Without this desire to seek new information, many important discoveries may have never been identified (**Table 1-3**). If you have read the material and still do not understand it, reach out to your instructor or other faculty member to help you. The instructor may be able to explain it in a different way or point you to additional resources.

When you are in an experiential or work environment setting, take notes when being trained, and do not be afraid to ask clarifying questions if you do not understand what you need to do. Sometimes students or new employees are afraid to ask questions. They are trying to make a good impression and they are afraid that admitting they do not know something may cause others to view them in a lesser light. In most instances, however, asking questions conveys a message to the trainer and supervisor that you are concerned with getting the task done correctly.

Table 1-3. Curiosity

Consider Alexander Fleming and his incidental discovery of penicillin. As suggested via historical accounts, Dr. Fleming, a microbiologist at St. Mary's Hospital, returned from a vacation to find an untidy laboratory.[24] While examining some Petri dishes containing colonies of *Staphylococcus aureus* (*S. aureus*), an organism known most commonly to cause skin infections, Dr. Fleming noticed mold growth with what appeared to be a lack of *S. aureus* near the mold. He decided to review the dishes further under a microscope and observed a lack of normal bacterial growth around the areas covered in mold. This mold, *Penicillium notatum*, prevented the *S. aureus* from growing. His curiosity led to the discovery of penicillin, a now widely used antimicrobial. He is known to have said, "I did not invent penicillin. Nature did that. I only discovered it by accident."

The only reason this "accident" occurred is because he was curious enough to ask why when he observed something unexpected. Consider what may have happened had he chosen to throw away the Petri dishes assuming they were garbage. Would penicillin have been discovered?

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Take notes when learning. Ask questions that are clarifying in nature as opposed to asking the instructor to repeat the information multiple times.

Be Proactive During Training

When you are starting a new job, or if you are working in an experiential setting, make sure you feel comfortable performing the task on your own before it becomes your sole responsibility. This can help prevent medication errors. If you do not feel that you understand exactly what is being asked of you, speak up and ask for more training. Many managers or supervisors will see this as being appropriately assertive, especially if the request is done in a professional and courteous manner. See Chapter 10 for an overview of communication strategies.

SAFETY FIRST

Ask questions when you are being trained until you feel 100% comfortable doing the task. This helps prevent medication errors.

Ask for Help

For students in a didactic setting, many colleges have an office of student services to assist students who are experiencing academic difficulty by providing tutoring services or study tips/strategies workshops. Take the time to research what services or programs are offered at your institution and take advantage of them. Even if you are not having academic difficulty at the moment, attending workshops or seminars can help make sure you stay on the right track. Everyone can benefit from tutorials on optimal learning strategies!

If you have completed your coursework and you are working in a pharmacy environment, consider finding a mentor. A mentor can give you tips and advice on how to do your job more efficiently, how to navigate logistics, and how to work with different kinds of people. See Chapter 19 for more information on mentoring.

SUMMARY

There are many strategies you can employ to help enhance your learning experience. Successful learning is not based solely on aptitude alone. Taking an active role in your learning can improve your self-confidence and help you achieve your educational goals. Challenge yourself to use some or all of the techniques contained in this chapter when learning or applying the information contained within the rest of this book. Good luck on your journey!

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PART 1

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SELF-ASSESSMENT QUESTIONS

1. Which of the following strategies can be used to help a student become a better learner?
   a. Adopting a growth mindset
   b. Using time management strategies
   c. Being their own advocate
   d. All of the above

2. Which of the following would be an intrinsic source of motivation?
   a. Getting an "A" in a course
   b. Getting a raise for a good performance evaluation
   c. Getting a certificate and trophy for the "technician of the month" award
   d. Feeling good about helping a patient

3. Which of the following is *not* a component of emotional intelligence?
   a. Self-awareness
   b. Social awareness
   c. Time management
   d. Self-management
   e. Relationship management

4. Ben helps Max, a peer he works with occasionally, on a difficult task. Max complains that Ben's work is not the way that he likes it done, and Ben responds that Max should be grateful because he is doing him a favor. They argue. What action is the most effective in managing this relationship?
   a. Ben apologizes to Max.
   b. Ben decides to never help Max again.
   c. Ben tries harder so that Max appreciates his work.
   d. Ben diffuses the argument by asking Max how he would prefer things are done.

5. Which of the following is the best illustration of emotional intelligence?
   a. You feel "down" today. You do not know why, but you make the most of your day and are able to get through most of your assigned tasks.
   b. Sally has not talked to you in 2 weeks. You have no idea why. You send her an e-mail suggesting that she attend an emotional intelligence class/seminar.
   c. You are working in a hospital setting. While in a patient's room delivering medications, the patient yells at you. You react in a calm, rational voice and address his concerns.
   d. While clarifying a prescription, a patient becomes very angry with you. You say, "sorry to bother you" and hand the prescription to another technician to process.

6. Which of the following characteristics are found in individuals with a lot of grit?
   a. Hope
   b. Practice
   c. Interest
   d. Purpose
   e. All of the above

7. Which of the following is an example of something that someone with a growth mindset might say?
   a. "I am just not naturally good at music."
   b. "If I have to study hard, that means that I am not naturally smart."
   c. "I know I can succeed at that new job if I try hard and listen to the advice and feedback that is given to me."
   d. "There is no way I can learn how to use this new computer system. I am not good with technology."

8. Which of the following mindsets is more beneficial to learning, resilience, and work relationships?
   a. Fixed mindset
   b. Growth mindset

9. Which of the following is a way you can use creative scheduling to help with time management?
   a. Avoid scheduling time for personal needs.
   b. Schedule less time that you think you will need.
   c. Change the deadline to a later date in your calendar.
   d. None of the above.

10. Which of the following is *not* an effective time management strategy?
    a. Making a to-do list
    b. Using online calendars
    c. Delegating effectively
    d. Responding to e-mails immediately

11. When learning a new process, which of the following is true?
    a. Asking questions should be avoided, because it will bother the trainer.
    b. Asking for help may indicate that you are not the right person for the job.
    c. Asking questions in a professional manner is a sign that you are being appropriately assertive.
    d. It is considered rude to take notes when being trained.

SELF-ASSESSMENT ANSWERS

1. **d.** All of these strategies were discussed in this chapter and can be used to help a student become a better learner.

2. **d.** Extrinsic sources of motivation are "carrots" or "sticks" used to reward or punish an individual. Intrinsic motivation involves doing something because you value the activity itself or have a deep interest in it. Motivation that is intrinsic does not need rewards such as an "A," a trophy, or a financial incentive (i.e., raise).

3. **c.** Self-awareness, self-management, social awareness, and relationship management are all components of emotional intelligence. Although time management is important, it is not related to emotional intelligence.

4. **d.** Apologizing is a passive approach, especially if Ben did nothing wrong. An emotionally intelligent individual would not try to get "revenge" or would not avoid future situations with a potential for conflict. Trying harder may not work in this instance if Ben does not know what Max wants. Therefore, diffusing the argument and asking for Max's preferred method would be the best way to handle this situation.

5. **c.** Not knowing why you feel down means that you do not have a high level of self-awareness. If a coworker has not talked to you in a while, the best thing to do would be to seek out information before coming to a conclusion that could be wrong. Avoiding conflict (answer D) is not an emotionally intelligent way of handling problems. Therefore, answer C is correct. In this instance, you recognize the anger in the patient (social awareness), but you remain calm (self-management) and aim to resolve the problem (relationship management).

6. **e.** There are five characteristics associated with higher degrees of grit: interest, practice/study, purpose, and hope.

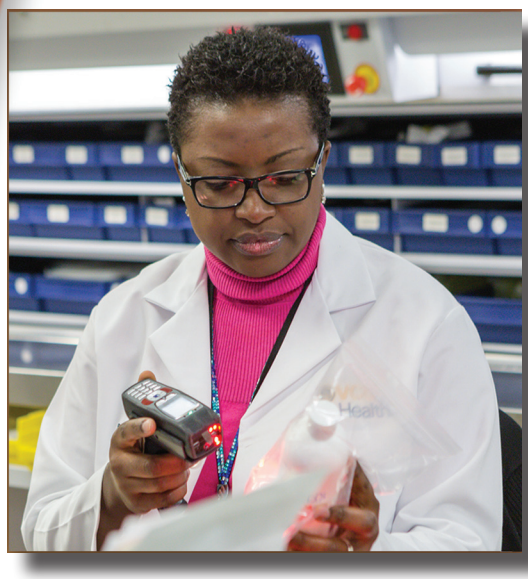
7. **c.** A person with a growth mindset judges their performance based on the effort applied to the task, not the outcome. They welcome feedback and use it to improve. They do not use blanket statements such as "I am not good at music" or "I am not good with technology." They also do not believe that intelligence is innate; rather they believe that success is based on effort.

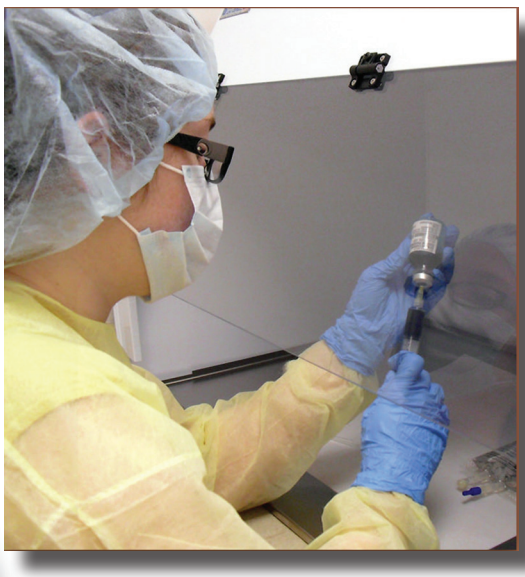
8. **b.** Several studies have demonstrated positive educational outcomes when a growth mindset is used.

9. **d.** None of these are effective ways at using scheduling. You should remember to schedule time for yourself; this is important for mental and physical well-being and it will keep you from over-scheduling yourself. You should always schedule *more* time than you think you might need. This builds in extra time in case you need it. Similarly, if changing a deadline, you should change it to an *earlier* time period for the same reason.

10. **d.** Replying to e-mails immediately might slow your momentum for the task you were working on before you were interrupted. Making a to-do list, using online calendars, and delegating are all time-savers.

11. **c.** You should feel free to ask as many questions as you need in order to understand the job's expectations. It is also appropriate to take notes, especially in situations where the steps involved for a task may be complicated. Asking for help does not mean you are not the right person for the job. Rather, asking questions in a professional manner shows the trainer that you are paying attention and interested in doing a good job.





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CHAPTER 2

The World of Pharmacy and Pharmacy Technicians

Michele F. Shepherd

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LEARNING OUTCOMES

After completing this chapter, you will be able to

- Compare and contrast the responsibilities of pharmacy technicians and pharmacists.
- Describe the differences between licensure, certification, and registration.
- Outline advantages of formal training for pharmacy technicians.
- Describe differences between the ambulatory and institutional pharmacy practice settings.
- List specific examples of ambulatory and institutional pharmacy practice settings.
- Describe at least six characteristics of a professional.
- List five tasks that pharmacy technicians perform in various pharmacy settings.
- Identify five ethical principles pharmacy technicians follow as they perform their duties.
- Define medication therapy management.
- Explain why the use of outpatient pharmacy and medical services is increasing.

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