chapter ten

STUDY

DEVELOPING YOUR MEMORY, STUDY, AND TEST-TAKING SKILLS

"We can learn something new at any time we believe we can." —Virginia Satir

of my family, advisors, and my mentor, Karen Morris, I knew I would have amazing success."

Kayla quickly learned that time management, organization, and personal effort are needed to succeed in college. She found that it took dedication, but she also realized that she could do it if she tried and stayed focused. "It wasn't easy stepping back into the classroom after so many years and after such a negative experience in school. Starting at North Central Texas College changed my life. It made my transition to Texas Woman's University and then on to the workplace manageable for me and my family. It also showed me that I am capable and able to achieve my goals. Because of the help and support of those around me, my hard work, and my dedication to excellence, I earned my Associate's and Bachelor's degrees in teaching and am now living my dream of being a teacher."

It was also during Kayla's time at North Central Texas College that she realized her own love of learning and her desire to obtain more than a Bachelor's degree, so she began working toward a Master's of Education degree.

"Those who thought I wouldn't amount to much were wrong—including me. Even though I made some poor decisions, I made some good ones, too. By far, going back to school was the best decision I ever made and has changed my life. I would say never doubt your potential if you follow it up with hard work, focus, and passion."

THINK about it

1. Kayla states that she could not imagine explaining to her children the importance of education when she was a dropout. How important do you think obtaining your education is to those around you like your children, siblings, parents, or friends? Why?
2. Kayla found a mentor in Ms. Morris. Who do you think could be a mentor for you at your college? Why? What qualities do they possess that you admire and would like to emulate?

THE THREE TYPES OF MEMORY

Can Information Really be Stored and Easily Retrieved?

Psychologists have determined that there are three types of memory: **sensory** memory; **short-term, or working** memory; and **long-term** memory.

Sensory memory stores information gathered from the five senses: taste, touch, smell, hearing, and sight. Sensory memory is usually temporary, lasting about one to three seconds, unless you decide that the information is of ultimate importance to you and make an effort to transfer it to long-term memory.

Short-term, or working memory holds information for a short amount of time. Consider the following list of letters:

jmplngtoplntstsevng

Now, cover them with your hand and try to recite them.

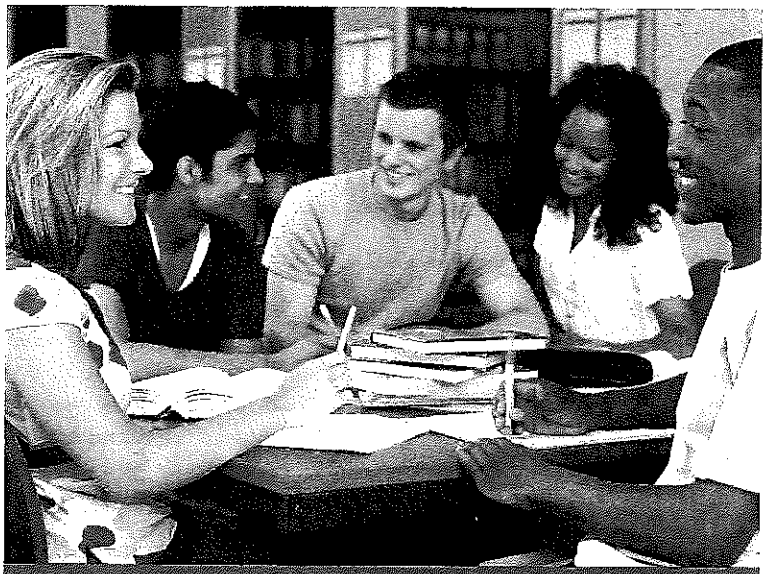
It is almost impossible for the average person to do so. Why? Because your working memory bank can hold a limited amount of information, usually about five to nine separate new facts or pieces of information at once (Woolfolk, 2009). However, consider this exercise. If you break the letters down into smaller pieces and add *meaning* to them, you are more likely to retain them. Example:

jum lng to plnts ts evng

This may still not mean very much to you, but you can probably remember at least the first three sets of information—jum lng to.

Now, if you were to say to yourself, this sentence means "Jump Long To Planets This Evening," you are much more likely to begin to remember this information. Just as your memory can "play tricks" on you, you can "play tricks" on your memory.

Although it is sometimes frustrating when we "misplace" information, it is also useful and necessary to our brain's survival that every piece of information that we hear and see is not in the forefront of our minds. If you tried to remember everything, you would not be able to function. As a student, you would never be able to remember all that your instructor said during a 50-minute lecture. You have to take steps to help you to remember important information. Taking notes, making associations, drawing pictures, and visualizing information are all techniques that can help you move information from your short-term memory to your long-term memory bank.



What study techniques have you used in the past to help you commit information to long-term memory?

Long-term memory stores a lot of information. It is almost like a hard drive on your computer. You have to make an effort to put something in your long-term memory, but with effort and memory techniques, such as rehearsal, practice, and mnemonic devices, you can store anything you want to remember there. Long-term memory consists of information that you have heard often, information that you use often, information that you might see often, and information that you have determined necessary and/or important to you. Just as you name a file on your computer, you name the files in your long-term memory. Sometimes, you have to wait a moment for the information to come to you. While you are waiting, your brain's CD-ROM is spinning; if the information you seek is in long-term memory, your brain will eventually find it if you stored it properly. You may have to assist your brain in locating the information by using mnemonics and other memory devices.

POWERFUL VISUALIZATION TECHNIQUES

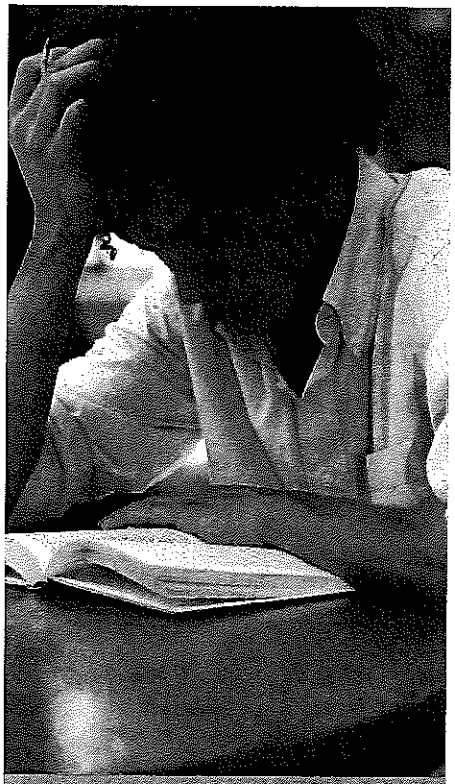
How Can VCR3 Be Used to Increase Memory Power?

Countless pieces of information are stored in your long-term memory. Some of it is triggered by necessity, some may be triggered by the five senses, and some may be triggered by experiences. The best way to commit information to long-term memory and retrieve it when needed can be expressed by:

- **V**isualizing
- **C**oncentrating
- **R**elating
- **R**epeating
- **R**eviewing

Consider the following story:

As Katherine walked to her car after her evening class, she heard someone behind her. She turned to see two students holding hands walking about 20 feet behind her. She was relieved. This was the first night that she had walked to her car alone.



Do you find that studying at the library, at home, or somewhere else is most effective for you? Why?

Katherine pulled her book bag closer to her as she increased her pace along the dimly lit sidewalk between the Salk Biology Building and the Horn Center for the Arts. "I can't believe that Shana didn't call me," she thought to herself. "She knows I hate to walk to the parking lot alone."

As Katherine turned the corner onto Suddith Street, she heard someone else behind her. She turned but did not see anyone. As she continued to walk toward her car, she heard the sound again. Turning to see if anyone was there, she saw a shadow disappear into the grove of hedges along the sidewalk.

Startled and frightened, Katherine crossed the street to walk beneath the streetlights and sped up to get closer to a group of students about 30 feet in front of her. She turned once more to see if anyone was behind her. Thankfully, she did not see anyone.

By this time, she was very close to her car. The lighting was better and other students were around. She felt better, but vowed never again to leave class alone at night.

Visualizing information means that you try to create word pictures in your mind as you hear or read the information. If you are being told about a Revolutionary War battle in Camden, SC, try to see the soldiers and the battlefield, or try to paint a "mind picture" that will help you to remember the information. You may also want to create visual aids as you read or study information.

As you read Katherine's story, were you able to visualize her journey? Could you see her walking along the sidewalk? Did you see the two buildings? What did they look like? Could you see the darkness of her path? Could you see that shadow disappearing into the bushes? Could you see her increasing her pace to catch up to the other students? What was she wearing?

If you did this, then you are using your visual skills—your ***mind's eye***. This is one of the most effective ways to commit information to long-term memory. See it, live it, feel it, and touch it as you read and study it, and it will become yours.

Concentrating on the information given will help you commit it to long-term memory. Don't let your mind wander. Stay focused. If you find yourself having trouble concentrating, take a small break (2–5 minutes) and then go back to work.

Relating the information to something that you already know or understand will assist you in filing or storing the information for easy retrieval. Relating the appearance of the African zebra to the American horse can help you remember what the zebra looks like. You may not know what the building in Katherine's story looked like, but try to see her in front of a building at your school. Creating these types of relationships increases memory retention of the material.

Repeating the information out loud to yourself or to a study partner facilitates its transfer to long-term memory. Some people have to hear information many times before they can commit it to long-term memory. Memory experts agree that repetition is one of the *strongest* tools to increase the retention of material.

Reviewing the information is another means of repetition. The more you see and use the information, the easier it will be to remember it when the time comes. As you review, try to remember the main points of the information.

Walter Pauk (2010), educator and inventor of the Cornell note-taking method, concluded from a research study that people reading a textbook chapter forgot 81 percent of what they had read after 28 days. With this in mind, it may be beneficial for you to review Katherine's story (and other material in your texts) on a regular basis. Reviewing is a method of repetition and of keeping information fresh.

Remembering Katherine

Without looking back, answer the following questions about Katherine. Use the power of your visualization and concentration to recall the information.

1. What was the name of the biology building?

_____

2. Did she see the shadow before or after she saw the two people behind her?

_____

3. What were the two people behind her doing?

_____

4. What was the name of the arts building?

_____

5. Why did she cross the street?

_____

6. How far ahead of her was the group of students?

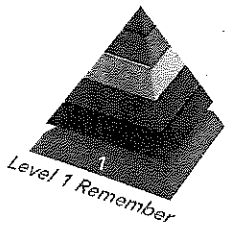
_____

7. When she saw the group of students in front of her, how far was she from her car?

_____

8. What was Katherine's friend's name?

_____



THE CAPABILITY OF YOUR MEMORY

What Is the Difference Between Memorizing and Owning?

Why don't you forget your name? Why don't you forget your address? The answer is that you *know* that information. ***You own it.*** You didn't just "rent it." It belongs to you. You've used it often enough and repeated it often enough that it is highly unlikely that you will ever forget it. Conversely, why can't you remember the details of Erickson's Stages of Development or Maslow's Hierarchy of Basic Needs or Darwin's Theory of Evolution? Most likely because you memorized it and never "owned" it.

Knowing something means that you have made a personal commitment to make this information a part of your life. For example, if you needed to remember the name Stephen and his phone number, 925-6813, the likelihood of your remembering this depends on your *attitude.* Do you need to recall this information because he is in your study group and you might need to call him, or because he is the caregiver for your infant daughter while you are in class? How badly you need that name and number will determine the commitment level that you make to either *memorizing* it (and maybe forgetting it) or *knowing* it (and making it a part of your life).

In Figure 10.1 you will find two photos. Follow the directions above each photo.

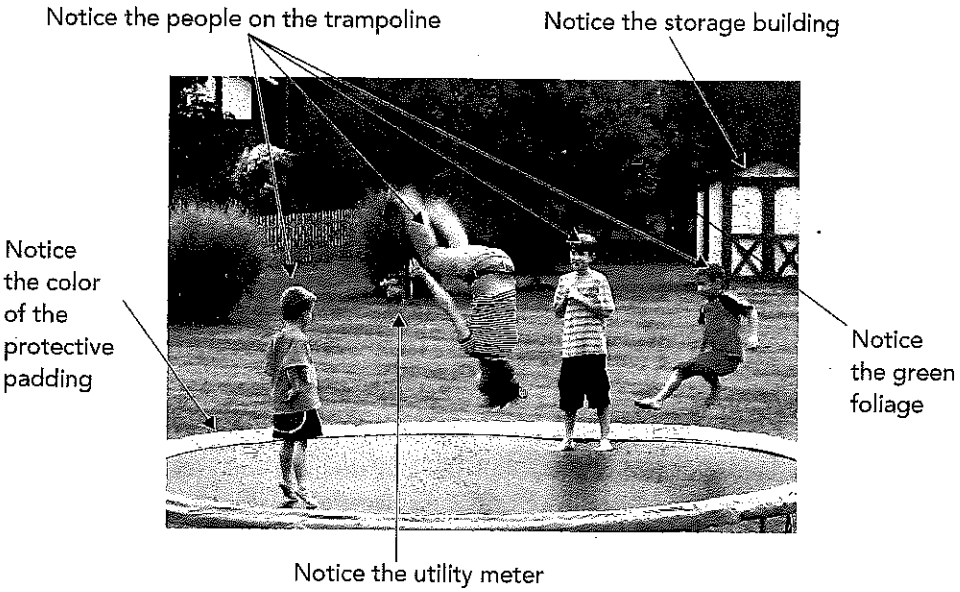
"The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn."

—Alvin Toffler

Figure 10.1 Seeing Clearly

Consider this picture. Study it carefully.
Look at everything from left to right, top to bottom.

Now, notice the picture and pay close attention to the areas marked.



Now, cover both photos and answer the following questions:

1. How many people are on the trampoline? _____
2. What color is the protective padding on the edge? _____
3. What is the season of the year based on the foliage color? _____
4. What colors are used on the storage building? _____
5. Is there one utility meter or two? _____

6. How many children are in the air? _____
7. Are the children all male, female, or mixed? _____
8. How many people are wearing striped shirts? _____
9. What type of fence surrounds the house? _____
10. What colors are used on the house? _____
11. Is the house made of one material or more? _____
12. What color are the flowers on the bush? _____

"Not fair!" you may be saying right now. "We were not asked to look at the fence, colors on the house, or what people are wearing." Regardless, could you answer all of the questions without looking? The purpose of this exercise is to help you understand the real difference between casually looking at something and *really* looking at something. To truly know something, you have to go beyond what is on the surface—even looking beyond reading and studying what was asked of you. You have to look and examine more than you are told or more than what is pointed out to you. In order to own information, you have to be totally committed to examining every detail, every inch, and every angle of it. You will need to practice and master the technique of "going beyond."

USING MNEMONIC DEVICES

What Does a Greek Goddess Have to Do with My Memory?

The word *mnemonic* is derived from the Greek goddess of memory, ***Mnemosyne*** (pronounced ne-mo-ze-knee). She was considered one of the most important goddesses because it was believed that memory separated us from lower animal life forms. It was believed that memory was the very foundation of civilization (The Goddess Path, 2009). Memory was so very important because most of the transmission of human history depended on oral stories and parables committed only to memory, not on paper.

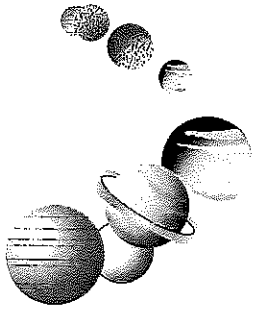
In modern times, ***mnemonic devices*** are memory tricks or techniques that assist you in putting information into your long-term memory and pulling it out when you need it. According to research into mnemonics and their effectiveness, it was found that mnemonics can help create a phenomenon known as the ***bizarreness effect***. This effect causes us to remember information that is "bizarre" or unusual more rapidly than "normal," everyday facts. "The bizarreness effect occurs because unusual information and events trigger heightened levels of our attention and require us to work harder to make sense of them; thus we remember the information and its associated interaction better" (McCornack, 2007). The following types of mnemonic devices may help you with your long-term memory.

Jingles/Rhymes. You can make up rhymes, songs, poems, or sayings to assist you in remembering information; for example, "Columbus sailed the ocean blue in fourteen hundred and ninety-two."

Jingles and rhymes have a strong and lasting impact on our memory—especially when repetition is involved.

Sentences. You can make up sentences, such as "Some men can read backward fast," to help you remember information. Another example is "**P**lease **e**xcuse **m**y **d**ear **A**unt **S**ally," which corresponds to the order of mathematical operations: **p**arentheses, **e**xponents, **m**ultiplication, **d**ivision, **a**ddition, and **s**ubtraction.

The Greek goddess of memory, Mnemosyne.



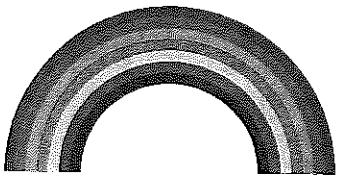
Other sentences used in academic areas include:

1. **M**y **V**ery **E**lderly **M**other **J**ust **S**aved **U**s **N**icely is a sentence mnemonic for the eight planets, in order from the sun: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.

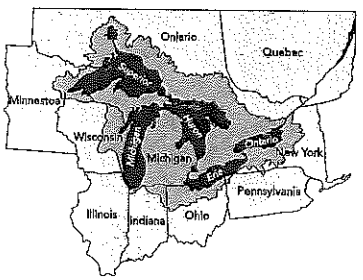
Words. You can create words. For example, **Roy G. Biv** may help you to remember the colors of the rainbow: **r**ed, **o**range, **y**ellow, **g**reen, **b**lue, **i**ndigo, and **v**iolet.

Other word mnemonics include:

1. **HOMES** is a word for the Great Lakes in no particular order: **H**uron, **O**ntario, **M**ichigan, **E**rie, **S**uperior.



Story lines. If you find it easier to remember stories than raw information, you may want to process the information into a story that you can easily tell. Weave the data and facts into a creative story that can be easily retrieved from your long-term memory. This technique can be especially beneficial if your instructor gives essay exams, because the "story" that you remember can be what was actually told in class.



Acronyms. An acronym is a word that is formed from the first letters of other words. You may see reruns for the famed TV show *M*A*S*H.* This is an acronym for **m**obile **a**rmy **s**urgical **h**ospital. If you scuba dive, you know that *scuba* is an acronym for **s**elf-contained **u**nderwater **b**reathing **a**pparatus. Other common acronyms include:

- *NASA* (**N**ational **A**eronautic **S**pace **A**dministration)
- *NASCAR* (**N**ational **A**ssociation of **S**tock **C**ar **A**uto **R**acing)
- *NASDAQ* (**N**ational **A**ssociation of **S**ecurities **D**ealers **A**utomated **Q**uotation)
- *NATO* (**N**orth **A**tlantic **T**reaty **O**rganization)
- *BART* (**B**ay **A**rea **R**apid **T**ransit)

Pegging. The pegging system uses association, visualization, and attachment to aid in memory. With this system, you literally "attach" what you want to remember to something that is already familiar to you—the pegs that you create. This is a visual means to remember lists, sequences, and even categories of information.

Pretend that you are looking at a coat rack mounted on the wall with 10 pegs sticking out of it, as shown in Figure 10.2. Just as you would hang a hat or coat on the pegs of a rack, you can hang information there, too.

For the sake of explaining this technique more thoroughly, we have named 10 pegs for you with corresponding rhyming words. You, however, can name your pegs anything that would be easy for you to remember. Once you memorize these pegs, you can attach anything to them with visualization and imagination. The key to using the pegging mnemonic system is to name your pegs *once* and use those names each time you hook information to them. This way, they become second nature to you.

For our example, our 10 pegs are named:

1 = sun	2 = shoe	3 = bee	4 = shore	5 = alive
6 = sticks	7 = heaven	8 = gate	9 = line	10 = sin

Repeat these until you have memorized them.

To attach the information that you want to remember to the peg, you use visualization to attach a term or word to that peg. For example, if you wanted to remember a shopping list that included (1) ice cream, (2) rice, (3) Ajax, (4) milk, (5) water, and (6) cookies, this might be your visualization plan.

1–sun	You see ice cream melting in the **sun.**
2–shoe	You see a **shoe** being filled with rice.

3–bee	You see Ajax being sprinkled on a **bee.**
4–shore	You see milk instead of water rushing to the **shore** in waves.
5–alive	You see water keeping you **alive** on a deserted island.
6–sticks	You see cookies being offered to you on a **stick** (like a s'more).

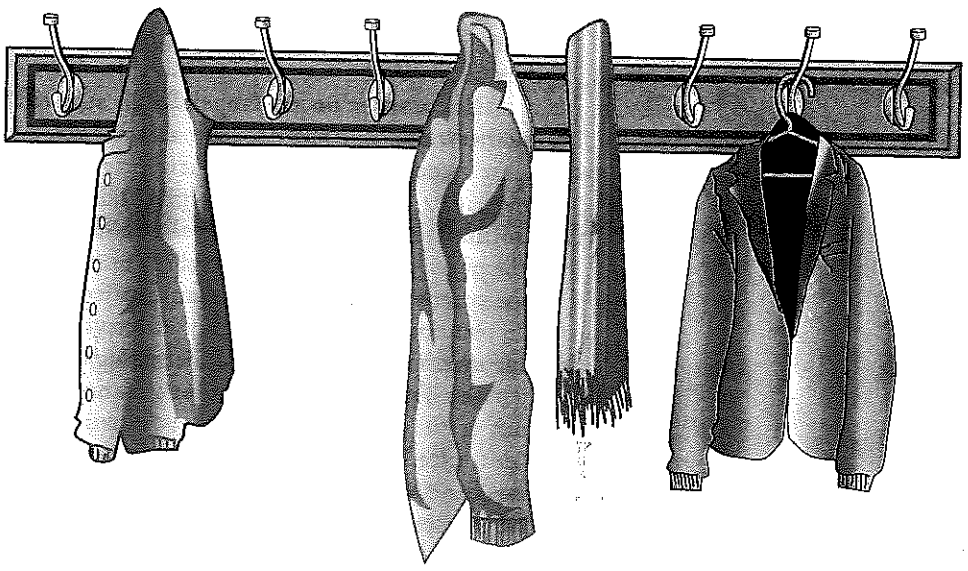
Read over this list one more time and you'll be surprised at how easy it is to remember your shopping list. It becomes even easier when *you* name your pegs and *you* create the visualization. If you need more than 10 pegs, you can create as many as you need.

Suppose that we wanted to remember a list for ***"personal and professional success"*** (passion, motivation, knowledge, resourcefulness, creativity, adaptability, open-mindedness, communication, accountability, and vision). If your instructor suggests that you need to know this list, in order, for your midterm exam, use the pegging system to memorize it.

1–sun	I look at the ***sun*** on a beautiful day with ***passion.***
2–shoe	I walk in my ***shoes*** with ***motivation.***
3–bee	I see a ***bee*** flying around that seems to be very ***knowledgeable.***
4–shore	The ***shore*** washes many ***resources*** to the beach.
5–alive	My brain is ***alive*** because I use ***creativity.***
6–sticks	I see a ***stick*** bending into a half circle, making it very ***adaptable.***
7–heaven	Believing in ***heaven*** takes ***open-mindedness.***
8–gate	Many ***gates*** open for people who know how to ***communicate.***
9–line	If you walk a straight ***line,*** you will be ***accountable.***
10–sin	It is a ***sin*** to lack ***vision.***

Read over these one more time, then cover the list and you'll be amazed at how easy it is to repeat it. You will, of course, need to study each one to know what it means, but now you have the list memorized, in order.

Figure 10.2 The Pegging System



HAKUNA MATATA

How in the World Can I Study with Small Children in the House?

For many college students, finding a place or time to study is the hardest part of studying. Some students live at home with younger siblings; some students have children of their own. If you have young children in the home, you may find the following hints helpful when it comes time to study.

Study at school. Your schedule may have you running from work to school then directly to home. Try to squeeze in even as little as half an hour at school for studying, perhaps immediately before or after class. A half hour of uninterrupted study time can prove more valuable than five hours at home with constant interruptions.

Create crafts and hobbies. Your children need to be occupied while you study. It may help if you have crafts and hobbies available that they can do while you are involved with studying. Choose projects your children can do by themselves, without your help. Depending on their ages, children could make masks from paper plates, color, do pipe cleaner art or papier-mâché, use modeling clay or dough, or build a block city. Explain to your children that you are studying and that they can use this time to be creative; when everyone is finished, you'll share what you've done with each other. Give them little rewards for their work and for helping you have quiet time to study.

Study with your children. One of the best ways to instill the value of education in your children is to let them see you participating in your own education. Set aside one or two hours per night when you and your children study. You may be able to study in one place, or you may have separate study areas. If your children know that you are studying and you have explained to them how you value your education, you are killing two birds with one stone: you are able to study, and you are providing a positive role model as your children study with you and watch you.

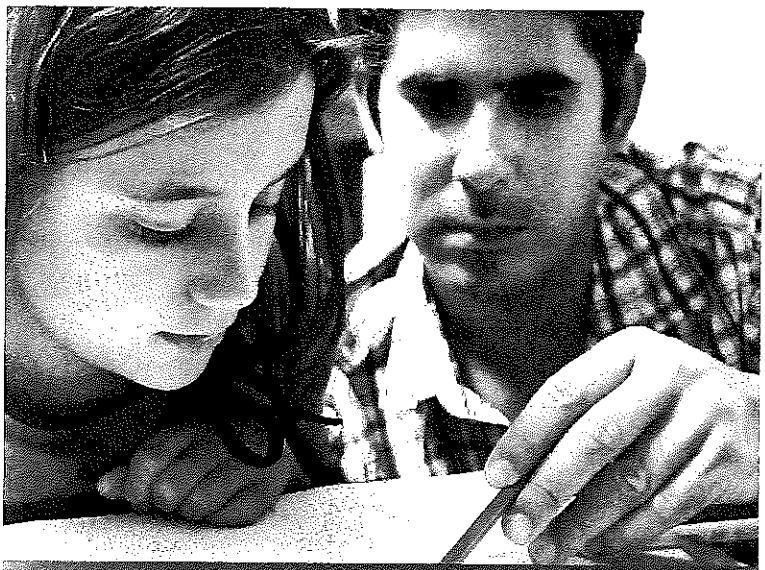
Rent movies or let your children watch TV. Research has shown that viewing a limited amount of educational television, such as *Sesame Street, Reading Rainbow,* or *Barney and Friends,* can be beneficial for children. If you do not like what is on television, you might consider renting or purchasing age-appropriate educational videos for your children to keep them busy while you study, and it could help them learn as well.

Invite your children's friends over. What?! That's right. A child who has a friend to play or study with may create less of a distraction for you. Chances are your children would rather be occupied with someone their own age, and you will gain valuable study time.

Hire a sitter or exchange sitting services with another student. Arrange to have a sitter come to your house a couple of times a week if you can afford it. If you have a classmate who also has children at home, you might take turns watching the children for each other. You could each take the children for one day a week, or devise any schedule that suits you both best. Or you could study together, and let your children play together while you study, alternating homes.

Ask if your college has an on-site daycare center such as the Boys and Girls Club. Some colleges provide daycare facilities at a reduced cost, and some provide daycare at no charge. It is certainly worth checking out.

Talk to the financial aid office at your institution. In some instances, there will be grants or aid to assist you in finding affordable daycare for your child.



Do you think it is a good idea to involve your children (or younger siblings) in your education? Why or why not?