Introduction to Critical Thinking

INTRODUCTION

Welcome, veterinary technology students, to the world of critical thinkers! Educational standards for most professions, including the veterinary, medical and nursing professions, require students to learn and apply the elements of critical thinking. Unfortunately, the concept of critical thinking is sometimes presented as a complicated and rather esoteric idea when, in fact, many people engage in critical thinking as soon as they are old enough to engage in decision making.

WHAT IS CRITICAL THINKING?

Let's consider Lauren, a high school senior. She has worked in a dog training and boarding facility part-time during high school and knows she would like a career working with animals. She is obviously aware that she could manage a boarding facility and she also knows that she could work in a veterinary clinic, but she wonders whether there are any other jobs that she would find interesting. She consults her guidance counselor at school, does some research on the internet, and talks to several adults who are able to provide her with information on alternative careers. As a result, she identifies two additional possibilities: working as a buyer for a pet supply company or as a drug representative for a company that produces drugs for veterinary use.

Lauren then gathers information on all of these careers so that she can answer questions such as: What are the educational requirements for this job; what is the projected pay range; what hours would I be expected to work; how much contact would I have with live animals? After gathering all of this information, Lauren decides to enroll in a veterinary technology program (good choice!). Although her primary goal is to become a veterinary technician, she also reasons that the education she receives would make her an ideal candidate as a drug representative if she later decided to follow that route. Little does Lauren know that she has just engaged in a classic example of critical thinking!

More than fifty years ago, the team of Dressel and Maynard described certain elements of critical thinking, and many additional definitions have been formulated in succeeding years. The authors of this book have adapted these many definitions for best use by veterinary technicians. Let us now examine the elements of the critical thinking process to see how Lauren unknowingly but naturally followed that process.

ELEMENTS OF CRITICAL THINKING

Step One: Identify the problem.

This was easy for Lauren, as she was clearly trying to determine which career would be the best fit for her based on her interests. However, it is not always so easy to recognize the exact question that needs to be answered. Remember, if

you don't know exactly what the question is, it is unlikely that you will develop a good answer!

Step Two: Gather Data.

Lauren already had some information available, as she had identified two careers that might interest her. However, Lauren showed excellent critical thinking skills when she recognized that she might not have all of the information that would be helpful to her in making her decision. Seeking input from other people and doing research on the internet allowed Lauren to identify two additional careers that satisfied her criteria. Next, Lauren learned all she could about the requirements and working conditions for each career. She could then compare the pros and cons of each choice to make the best decision for herself.

This example illustrates the importance of "knowing what you don't know." Lauren knew that she didn't know all of the careers available to her, so she actively sought out more data. This concept is especially crucial for veterinary technicians, as it is unlikely that any one individual can know everything there is to learn about every medical condition that affects various species. Knowing how to locate new information (through reference texts, consulting experts or internet searches, for example) is a key component of the critical thinking process.

Step Three: Identify Possible Answers/ Hypotheses.

Lauren identified two possible answers to her question (veterinary technician and drug representative) and then chose the best fit for herself. In Lauren's case, she wanted only one answer, as she obviously did not want to pursue two full-time careers simultaneously. However, in many situations, especially in the realm of veterinary technology, there may be multiple "correct" answers. For example, consider a cat brought in with symptoms of lethargy, vomiting and general unthriftiness. Blood work reveals that the animal is dehydrated and has dangerously high BUN and Creatinine values. The technician must recognize that proper treatment for this animal (in other words, the answer to this prob-

lem) involves treating BOTH the dehydration and the chronic kidney failure that the veterinarian diagnoses.

Identifying possible answers is a time for creative "brainstorming". Remember that the most obvious answer is not always the correct one. Do not discard any possible answers until you have actively considered all of the information that is available to you. A useful technique is to arrive at the most likely conclusion, but to keep other answers in your mind as alternatives if your initial conclusion proves to be incorrect. Note that this is exactly what Lauren did when she decided that becoming a veterinary technician was the correct choice for her, but kept open the option of becoming a drug representative at some future time.

Step Four: Evaluate Results.

Lauren has not yet had time to evaluate the results of her decision, since she cannot do that until she actually begins practicing as a veterinary technician. However, given Lauren's natural ability for critical thinking, at some point she will be evaluating her decision by asking questions such as: "Do I enjoy my work?", "Is this career compatible with my lifestyle choices?" or "Do I see myself in this job for the next ten years?"

As a veterinary technician, evaluating results means adding to existing data to determine if the initial hypothesis is correct, and developing a new hypothesis if later data are inconsistent with the original hypothesis. For example, consider the cat that was discussed above. The veterinarian orders IV fluid replacement for the dehydration and places the cat on a special diet after its discharge home. One month later, the BUN and creatinine values, while still elevated, are closer to normal. These additional facts indicate to the technician that the treatment for this animal (the answer to the problem) was correct. If the animal had shown no improvement, a new treatment might be warranted.