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DEPARTMENT OF THE AIR FORCE
Thomas N. Barnes Center for Enlisted Education (AETC)
Maxwell AFB, AL 36118

AIRMAN LEADERSHIP SCHOOL
STUDENT GUIDE

PART I
COVER SHEET

LESSON TITLE: CF03, CRITICAL THINKING

TIME: 2 Hours

METHOD: Guided Discussion and Experiential Exercises

REFERENCES:

Blass, F., Levy, D., and Parco, J., (2010). "The 52nd Floor, Thinking Deeply About Leadership," second edition.

Facione, P., Think Critically. Prentice Hall, 1 Lake Street, Upper Saddle River, NJ (2011)

Paul, Richard Dr. and Elder, Linda Dr., (2009). *A Glossary of Critical Thinking Terms and Concepts*. (pp 42) Foundation for Critical Thinking Press. Available from: www.criticalthinking.org

Paul, Richard Dr. and Elder, Linda Dr., (2008). *The thinkers guide to the nature and functions of critical & creative thinking*. (pp 20) Foundation for Critical Thinking Press. Available from: www.criticalthinking.org

Paul, Richard Dr. and Elder, Linda Dr., (2008). The miniature guide to critical thinking: concepts and tools, Fifth edition, Foundation for Critical Thinking Press. Available from: www.criticalthinking.org

STUDENT PREPARATION: Complete reading assignment, self-test and matching homework assignment (attachment 3) (approximately 5848 words/48 minutes of reading). In addition, come to class prepared to apply Facione's scoring rubric found at attachment 2.

PART IA

GENERAL LEARNING OUTCOME: Students who graduate from Airman Leadership School will understand critical thinking concepts and be able to apply these concepts as a first-level supervisor.

SUPPORTED COMPETENCIES/DIRECTIVES: This *Critical Thinking* lesson supports Air Force Institutional Organizational Competency of Strategic Thinking and AFI 36-2618, *The Enlisted Force Structure*.

TERMINAL COGNITIVE OBJECTIVE: Comprehend Critical Thinking concepts and their impact on NCO, unit, and mission effectiveness.

TERMINAL COGNITIVE SAMPLES OF BEHAVIOR:

1. Explain Critical Thinking issues and their impact on NCO, unit, and mission effectiveness.
2. Give examples of Critical Thinking issues and their impact NCO, unit, and mission effectiveness.
3. Predict the impact of Critical Thinking issues on NCO, unit, and mission effectiveness.

PART IB

ORGANIZATIONAL PATTERN: Topical

ASSOCIATED LESSONS: Since this lesson is a Course Foundation, it is associated with all other ALS lessons.

PART IC**LESSON OUTLINE:**

Content
INTRODUCTION: Attention, Motivation, and Overview
MP 1. The Critical Thinker <ul style="list-style-type: none"> a. Characteristics that Embody a Proficient Critical Thinker b. Approaches for Evaluating Information c. Systems Thinking Approaches to Decision Making
MP 2. Hindrances to Critical Thinking
MP 3. Questions Critical Thinkers Ask <ul style="list-style-type: none"> a. Questions Using Elements of Thought b. Questions Focused on Intellectual Standards
MP 4. Facione's Scoring Rubric w/ Exercise & Discussion
CONCLUSION: Summary, Re-motivation, and Closure
PART II Student Reading

MP 1. THE CRITICAL THINKER

What does it mean to be a critical thinker? Why should the Air Force be concerned with developing critical thinkers? Developing critical thinkers is essential to the success of our Air Force. Critical thinking is important because of rapid and frequent changes, regular deployments, and sometimes even dangerous operations. Critical thinking is also important in our daily duties as supervisors and leaders.

Critical thinking is defined as the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by observation, experience, reflection, reasoning, or communication as a guide to belief and action.

A well cultivated critical thinker:

- raises vital questions and problems, formulating them clearly and precisely;
- gathers and assesses relevant information, using abstract ideas to interpret it effectively;
- comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards;
- thinks open-mindedly within alternative systems of thought, recognizing and

- assessing, as need be, their assumptions, implications, and practical consequences
- and communicates effectively with others in figuring out solutions to complex problems.

Characteristics That Embody A Proficient Critical Thinker

The first step to becoming a proficient critical thinker is to develop the proper attitude. Specifically an attitude that embodies the following characteristics: A) open-mindedness, B) healthy skepticism, C) intellectual humility, D) free thinking, and E) high motivation.

A & B. Open-minded and healthy skepticism

The first two characteristics may appear contradictory, but they are not. Critical thinkers must be willing to investigate viewpoints different from their own view, but at the same time recognize when to doubt claims that do not merit such investigation. A critical thinker must be neither rigid nor gullible. Being both **open-minded** and **skeptical** means seeking out the facts, information sources, and reasoning to support issues we intend to judge; examining issues from as many sides as possible; rationally looking for the good and bad points of the various sides examined; accepting the fact that we may be in error ourselves; and maintaining the goal of getting at the *truth* (or as close to the truth as possible), rather than trying to please others or find fault with their views. Too much skepticism will lead one to doubt everything and commit oneself to nothing, while too little will lead one to gullibility and credulousness.

C. Intellectual humility

Having **intellectual humility** means adhering *tentatively* to recently acquired opinions; being prepared to examine new evidence and arguments even if such examination leads one to discover flaws in one's own cherished beliefs; to stop thinking that complex issues can be reduced to matters of 'right & wrong' or 'black & white', and to begin thinking in terms of 'degrees of certainty' or 'shades of grey'. Sometimes 'I don't know' can be the wisest position to take on an issue. As Socrates noted: *Arrogance does not befit the critical thinker.*

D. Free thinker

A critical thinker must also have an independent mind, i.e., is a **free thinker**. To think freely, one must restrain one's desire to believe because of social pressures to conform. This can be quite difficult or even impossible for some. One must be willing to ask if conformity is motivating one's belief or opinion, and if so, have the strength and courage to at least temporarily abandon one's position until he or she can complete a more objective and thorough evaluation.

E. Highly motivated

Finally, a critical thinker must have a natural curiosity to further one's understanding and be **highly motivated** to put in the necessary work sufficient to evaluate the multiple sides of issues. The only way one can overcome the lack of essential knowledge on a subject is to do the necessary studying to reach a sufficient level of understanding before making

judgments. This may require the critical thinker to ask many questions, which can be unsettling to those asked to respond. A critical thinker cannot be lazy. On another note, critical thinking cannot take place without first receiving information. Let's take a look at approaches for evaluating information.

Approaches for Evaluating Information

Three effective approaches for evaluating information are to ensure information is credible, unbiased, and accurate.

Credible – Information that is believable, from a trustworthy source (experts in a particular field, subject matter experts, Air Force leadership, etc.)

Unbiased – Information that is fair, impartial rather than prejudiced.

Accurate – Information that is free from errors, a correct or truthful representation of something.

Remember to consider the source's qualifications, integrity, and reputation. Does the source have a motive for being inaccurate or overly biased? Actively seek out trusted sources for information.

Systems Thinking Approaches to Decision Making

If you look back to the days when you were a new airman just learning your job, more than likely you had to focus carefully on the tasks that you were doing. Now through repetition, tasks you once thought of as "complex" are nothing more than routine actions, decisions, and/or behaviors. Tasks become routine after many hours of analysis, inference, and effective judgment (decision-making). As long as you can do things the same way every time, decisions seem to come easy. However, what happens when things change? When we move to something new or different we have to think about new ways of doing things—the "old way" or system of thinking is reactive, instinctive, quick and holistic. The "new way" or system is deliberative, analytical, and procedural. The two types of Systems Thinking are described below.

Reactive Thinking (System-1) Many of the judgments that you make every day are automatic or reactive, rather than reflective. Reactive thinking is "quick" thinking. When you wake up in the morning and go to work, chances are that unless something dramatic happens, you are on "auto pilot" until you get to work. You probably do not spend a whole lot of time thinking about how to brush your teeth, how to eat breakfast, or how to drive to work. Drivers avoid many accidents because they can see and react to dangerous situations quickly. Good decisions emerging from system-1 thinking often feel intuitive. Decisions good drivers make in those moments of crisis, just like the decisions practiced athletes make in the flow of the game or the decisions an NCO makes in the heat of battle, are born of expertise, training, and practice. Often the process of reactive thinking involves deciding first, reacting, and then trying to make sense out of all of it! Many times if you make a decision based entirely from reactive thinking you may look back and ask yourself, "What was I thinking?" The answer—"probably not a whole lot!"

Reflective Thinking (System-2) is broad and informed problem-solving and deliberate decision-making. Reflective thinking is “slower” and takes more time and effort. It is useful for judgments in unfamiliar situations, for processing abstract concepts, and for deliberating when there is time for planning and more comprehensive consideration. Argument making is often part of the deliberation process when making system-2 decisions. Critical thinking is considered system-2 thinking because it is often focused on resolving the problem at hand and at the same time monitoring and self-correcting the process of the situation or problem. The reflection part of this process begins with a state of doubt, hesitation or perplexity and moves through the act of searching for information that will resolve, clarify or address a situation or problem.

MP 2. HINDRANCES TO CRITICAL THINKING

Each day there are things that hinder our ability to think clearly, accurately, and fairly. Some of these hindrances result from unintentional and natural human limitations, while others are clearly calculated and manipulative. Some are obvious, but most are subtle or insidious. These hindrances can be divided into four categories: ***Basic Human Limitations, Use Of Language, Faulty Logic Or Perception, and Psychological Or Sociological Pitfalls***

A. Basic Human Limitations

This applies to everyone, including the most proficient critical thinkers. These limitations remind us that we are not perfect and that our understanding of facts, perceptions, memories, built-in biases, etc., precludes us from ever seeing or understanding the world with total objectivity and clarity. Basic Human Limitations include:

Confirmation Bias and Selective Thinking is the process where one tends to notice and look for what confirms one’s beliefs, and to ignore, not look for, or undervalue what contradicts one’s beliefs. For example, if one believes that more murders occur during a full moon, then one will tend to take notice of murders that occur during a full moon and tend *not* to take notice of murders that occur at other times. To overcome confirmation bias and selective thinking you must obtain and objectively evaluate all relevant information and sides of an issue before passing judgment.

False Memories and Confabulation is being unaware that our memories are often “manufactured” to fill in the gaps in our recollection, or that some memories of facts, over time, can be unconsciously replaced with fantasy. Police officers should *not* show a photo of a possible assailant to a witness prior to a police lineup, or the actual memory of the witness may be unconsciously replaced. Overcome this hindrance by relying on proven facts more than memory recollection or testimonies from others. Know your own memory’s limitations.

We each have ***personal biases and prejudices***, resulting from our own unique life experiences and worldview, which make it difficult to remain objective and think critically. Some people are biased against claims made by scientists because their worldview appears too cold and impersonal. Overcome this by resisting your own biases through the deliberate focus on facts, their sources, and the reasoning in support of arguments.

Physical and Emotional Hindrances can severely affect our ability to think clearly and critically. These include stress, fatigue, drugs, and related hindrances. An example would be someone making the statement, “Air traffic controllers often have difficulty making good judgments after long hours on duty.” Avoid this hindrance by restraining from making critical decisions when you are extremely exhausted or stressed.

Testimonial evidence can also be a hindrance to critical thinking. We should not rely on the testimonies and vivid stories of others to substantiate one’s own beliefs, even though testimonies are inherently subjective, inaccurate, unreliable, biased, and occasionally fraudulent. Dramatic stories of Bigfoot sightings do not prove the existence of Bigfoot. Resist making judgments based on testimonies alone. Extraordinary claims generally require extraordinary evidence.

B. The Use of Language

This is highly relevant to critical thinking. The choice of words themselves can conceal the truth, mislead, confuse, or deceive us. From ads, which guarantee easy weight loss to politicians assuring prosperity for everyone, a critical thinker must learn to recognize when words used in an attempt to control thought and behavior. Use of Language includes:

Ambiguity is a word or expression that can be understood in more than one way. For example, think about the following statement; “Lying expert testified at trial” In this statement, is the expert a liar or is the person an expert on telling when someone is lying? If the intended meaning of an ambiguous word or expression cannot be determined, avoid making judgments.

Assuring expressions are those that disarm you from questioning the validity of an argument. Statements such as “As everyone knows.” or “Common sense tells us...” are examples of assuring expressions. Disregard assuring expressions and instead focus on facts and reasoning that support arguments.

Meaningless comparisons include language that implies something is superior but retreats from that view. For example, an ad claims a battery lasts “up to” 30% longer, but does not say it will last 30% longer. What does the battery last longer than? Avoid making judgments or comparisons if it is not exactly clear what is being compared.

Doublespeak jargon is the use of technical language to make the simple seem complex, the trivial seem profound, or the insignificant seem important, all done intentionally to impress others. An example of this would be referring to a family as “a bounded plurality of role-playing individuals” or a homeless person as a “non-goal oriented member of society.” Try to recognize the cognitive (factual) content of jargon words and expressions to be a better critical thinker.

Emotive content is the intentional use of words to arouse feelings about a subject to bias others positively or negatively, in order to gain influence or power. For example, naming detergents “Joy” or “Cheer” (positive) rather than “Dreary” or “Tedious” (negative). A military example would be using the phrase “neutralizing the enemy” (less negative sounding) rather than saying “killing.” Learn to recognize and distinguish the emotive (emotional) content of language. Try to focus on reasoning and the cognitive (factual) content of language when evaluating arguments.

False implications is language that is clear and accurate but misleading because it suggests something false. For example, the dairy industry expresses fat content as a percentage of weight, not of calories. Therefore, 2% “low” fat milk really has 31% fat when the fat is measured as a percentage of calories. Avoid making judgments if it is not exactly clear what is being compared.

C. Faulty Logic or Perception Includes the following:

Apophenia and superstition is the erroneous perception of the connections between unrelated events. An example would be irrationally believing that how one wears their hat while watching a football game can influence the score. Learn to recognize the difference between cause & effect versus unrelated coincidence.

Argument from ignorance is a logical fallacy claiming something is true because it has not been proven false. For example, believing there must be life on Mars because no one has proved that there is not life on Mars.

False analogies is making illogical analogies to support the validity of a particular claim. Arguing that two children sharing the same bedroom is wrong because double-celling of criminals in a penitentiary can lead to bad behavior. Learn to recognize the faulty assumptions behind false analogies.

An **irrelevant comparison** is making a comparison that is irrelevant or inappropriate. Making a claim that Printer A makes better copies than Printer B, while ignoring the important fact that only Printer B can also fax, copy, and scan. Compare “apple with apples” to avoid this type of faulty logic/perception.

A **pragmatic fallacy** is arguing something is true because “it works,” even though the cause of this something and the outcome are not demonstrated. After using a magnetic belt for a while, a woman notices her back pain has decreased, even though there may be a dozen other reasons for the reduced back pain. Try to identify known or possible causal mechanisms for observed effects, starting with those that are *more likely*, not more emotionally appealing.

A **slippery slope fallacy** is an argument that assumes an adverse chain of events will occur, but offers no proof. One example is the following statement: “Because regulators have controlled smoking in public places, their ultimate goal is to control everything else in our lives.” To overcome or eliminate this fallacy, you must evaluate the logic supporting an alleged adverse chain of events.

D. Psychological and Sociological Pitfalls

Perceptions can be misinterpreted due to psychological and sociological pitfalls. Reasoning can be twisted to gain influence and power. Psychological and sociological pitfalls include:

Ad hominem fallacy is criticizing the *person* making an argument, not the argument itself. An example would be “You should not believe a word my opponent says because he is just bitter because I am ahead in the polls.” We should focus on reasons & facts that support an argument, *not* the person making the argument. Independently verify supporting facts if the source is in question.

Ad populum, bandwagon fallacy, is an appeal to the *popularity* of the claim as a reason for accepting the claim. Thousands of years ago the average person believed that the world was flat simply because most other people believed so. A valid claim should be based on sound arguments, not popularity.

An ***emotional appeal*** is making *irrelevant* emotional appeals to accept a claim (since emotion often influences people more effectively than logical reasoning). Advertisements that appeal to one's vanity, pity, guilt, fear, or desire for pleasure, while providing no logical reasons to support their product being better than a competitor. If an argument requires a logical reason to support its claim, do not accept emotional appeals as sufficient evidence to support it.

Evading the Issue, Red Herring, could happen when one has been accused of wrongdoing by diverting attention to an issue *irrelevant* to the one at hand. An example would be making jokes about one's own character in order to disarm critics & evade having to defend policy. Learn to recognize evasion, which implies a direct attempt to avoid facing an issue.

Fallacy of False Dilemma, Either/or Fallacy is intentionally restricting the number of alternatives, thereby omitting relevant alternatives from consideration. An example would be someone making the statement, "You are either with us, or with the terrorists!" Seek opposing arguments on the subject, which may reveal the existence of other viable alternatives.

Poisoning the well is creating a prejudicial atmosphere against the opposition, making it difficult for the opponent to be received fairly. An example would be someone making the statement, "Anyone who supports removing troops from Iraq is a traitor!" When evaluating an argument, focus on the argument, not prejudicial remarks.

MP 3. QUESTIONS CRITICAL THINKERS ASK

Critical thinkers ask why and they are inquisitive. There are eight elements of thought (Purpose, Questions, Information, Inferences/Conclusions, Concepts, Assumptions, Implications/Consequences, and Points of View) that critical thinkers must use. Each of these elements of thought have specific questions you can use to evaluate your information before you complete an assignment, paper, activity or any other type of intellectual activity.³ Practice asking yourself these questions internally before doing anything that requires critical thinking.

Questions Using Elements of Thought

Purpose – What am I trying to accomplish? What is my central aim/purpose?

Questions – What question am I raising? What question am I addressing? Am I considering the complexities in the question?

Information – What information am I using in coming to that conclusion? What experience have I had to support this claim? What information do I need to settle the question?

Inferences/Conclusions – How did I reach this conclusion? Is there another way to interpret the information?

Concepts – What is the main idea here? Can I explain this idea?

Assumptions – What am I taking for granted? What assumption has led me to that conclusion?

Implications/Consequences – If someone accepted my position, what would be the implications? What am I implying?

Points of View – From what point of view am I looking at this issue? Is there another point of view I should consider?

Slowing down your thought process and asking yourself questions using elements of thought will assist you in becoming a more proficient critical thinker. However, it doesn't end there. You must get into the practice of asking questions based on certain intellectual standards.

Questions Focused on Intellectual Standards

There are several intellectual standards associated with critical thinking. Intellectual standards should be applied to thinking to ensure its quality.⁴ Let's take a look at the intellectual standards (*clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness*) and the questions that can be used to apply them. These questions are oftentimes questions you will ask yourself before tackling a topic, issue, etc. that requires critical thinking. Come to class prepared to answer variations of these questions throughout this course.

Clarity is a gateway standard. If a statement is unclear, we cannot determine whether it is accurate or relevant.

- Could you elaborate further?
- Could you give me an example?
- Could you illustrate what you mean?

Accuracy means checking to see if something is accurate or true.

- How could we check on that?
- How could we find out if that is true?
- How could we verify or test that?

Precision means asking for more details or specifics

- Could you be more specific
- Could you give me more details?
- Could you be more exact?

Relevance is the quality of being directly connected with and important to something else.

- How does that relate to the problem?
- How does that bear on the question?
- How does that help us with the issue?

Depth encompasses finding out how your answer addresses the complexities in the

question.

- What factors make this a difficult problem?
- What are some of the complexities of this question?
- What are some of the difficulties we need to deal with?

Breadth is having an open and tolerant view of things, other viewpoints, etc.

- Do we need to look at this from another perspective?
- Do we need to consider another point of view?
- Do we need to look at this in other ways?

Logic is when the combination of thoughts is mutually supporting and makes sense. The thinking is then considered “logical.”

- Does all this make sense together?
- Does your first paragraph fit in with your last?
- Does what you say follow from the evidence?

Significance is the quality of having importance or being regarded as having great meaning.

- Is this the most important problem to consider?
- Is this the central idea to focus on?
- Which of these facts are most important?

Fairness implies the treating of all relevant viewpoints alike without reference to one’s own feelings or interests.

- Do I have a vested interest in this issue?
- Am I sympathetically representing the viewpoints of others?

The more you practice using these questions during guided discussions, activities, or when discussing lesson concepts with classmates...the easier it will be to apply critical thinking as a supervisor and leader. Your instructor will also prompt you to use these critical thinking questions at different times during this course.

MP 4. FACIONE’S SCORING RUBRIC WITH EXERCISE & DISCUSSION

A. Facione’s Scoring Rubric

Dr. Peter Facione is one of the leading international experts in developing critical thinking. He is the author of the Military and Defense Critical Thinking Inventory, one of the leading assessments in the application of critical thinking in national defense. He and his wife, Dr. Noreen Facione, have developed a critical thinking rubric to help us develop critical thinking in the military. This tool, is formally known as the Holistic Critical Thinking Scoring Rubric (HCTSR), it can aid us in evaluating real-life examples of critical thinking because it requires us only to consider four evaluative definitions “strong,” “acceptable,” “unacceptable,” and “weak”.

This simple tool is sufficient to get us started evaluating critical thinking. Naturally, as we

learn more about critical thinking, we will become better at applying the rubric.

Read the scenario below and the four student responses that follow. Review Dr. apply Facione's scoring rubric at attachment 2.

Scenario

Imagine a professor has assigned a group of four students to comment on the *Edward M. Kennedy Serve America Act*. Among other things, the bill, signed into law on April 21, 2009, designates September 11th as a national day of service. The group of four students has access to the information outlined below.⁵

Edward M. Kennedy Serve America Act

"The bill encourages voluntary service. The legislation provides for gradually increasing the size of the Clinton-era AmeriCorps to 250,000 enrollees from its current 75,000. It outlines five broad categories where people can direct their service: 1) helping the poor, 2) improving education, 3) encouraging energy efficiency, 4) strengthening access to health care, and 5) assisting veterans."⁶

"AmeriCorps offers a range of volunteer opportunities including 1) housing construction, 2) youth outreach, 3) disaster response and 4) caring for the elderly. Most receive an annual stipend of slightly less than \$12,000 for working 10 months to up to one year"

"The bill also ties volunteer work to money for college. People 55 and older can earn up to \$1000 education awards by getting involved in public service. Those awards can be transferred to a child, grand-child, or even someone they mentored"

"Students from sixth grade through senior year of high school could earn \$500 education awards for helping in their neighborhoods during a new summer program."⁷

Group Of Four Students' Statements

Label

Student #1: "My take on it is that this bill requires national service. It's like...a churchy-service-sorta-thing. But, you know, like run by the government and all. We all have to sign up and do our bit before we can go to college. That's a great idea. Think about it, how could anyone be against this legislation? I mean, unless they are either lazy or selfish. What excuse could a person possibly have not to serve our country? The president is right, we need to bring back the draft so that our Army has enough soldiers, and we need to fix health care and Social Security. I don't want to pay into a system all my working life only to find out that there's no money left when it's my time to retire."

Student #2: "Well I think this bill is a stupid idea. Who's going to agree to work for a lousy \$12,000 a year? That's nuts. I can earn more working at Target or by enlisting in the Navy. This legislation is just more foolish liberal nonsense that takes our nation one step closer to socialism. Socialism is when the government tries to control too many things. And now the president is trying to control volunteer service. Maybe you want to build houses for poor people or clean up after hurricanes, but I don't see how any of that is going to help me pass physics or get me a better job after college."

Student #3: “I think there are problems with the legislation, too. But you’re wrong about people not wanting to volunteer. The number of hits on the AmeriCorps Web site keeps going up and up each month. Retired people, students, and people who just want to make a difference go there and to Serve.gov to see what opportunities might exist near where they live. On the other hand, I do have issues with the government being the organizing force in this. Volunteerism was alive and well in America before Big Brother got involved. I don’t see why we need to spend 5.7 billion dollars getting people to do what they were already going to do anyway. We shouldn’t pay people to be volunteers.”

Student #4: “That’s the point, some of them wanted to do volunteer service but they need a small incentive. Nobody is going to get rich on the stipends the government is offering. I think that people who want to keep government at arm’s length are going to have problems with this bill. They are right that it is another way that government is worming itself into every facet of our lives. But a lot of people feel that way about religion, too; that’s why they do not want to volunteer in programs sponsored by religious groups, because they don’t want to be seen as agreeing with all the beliefs of that group. The real question for me is the effect that this legislation might have on the future politics of our nation. All these volunteers could become, in effect, people the Administration can call on in the next election. Organizing tens of thousands Americans who basically agree with the idea of public service at public expense is like lining up the Democratic voters who will want to be sure these policies are not reversed by the Republicans. I’m not talking about a vague idea like “socialism,” I’m talking about clever politics, positioning the Democratic Party for success in 2012. On balance, that’s OK with me. But we need to understand that this legislation will result in more than just a lot of wonderful work by a large number of generous Americans who are willing to give of their time to help others.”⁸

You’ve spent quite a bit of time reading information regarding critical thinking. Refer back to this student reading often throughout this course. The information contained in the Critical Thinking lesson is **very** important to your personal development. The information in this student guide is only as powerful as you make it. You have the opportunity to exceed the critical thinking skills of your predecessors. Start recognizing what hinders your thinking. Hindrances such as human limitations, bias, etc. can cripple your development and you must actively use effective approaches to evaluate information. Remember that questioning is a good thing when it comes to honing your critical thinking ability. Ask questions using elements of thought in every paper, activity, or reading assignment to reach the highest level of thinking. Don’t forget to frequently use questions that focus on intellectual standards such as clarity, accuracy, depth, logic, etc. Most importantly, apply critical thinking in your leadership endeavors and teach your subordinates (Airmen) how to become critical thinkers. The work you do today to improve critical thinking in yourself and others will have a positive impact on our Air Force of the future.

A Self-Test For Critical Thinkers

Place a check mark next to each item that you believe is true (most of the time) of your personal thinking patterns.

____ I think for myself and am not easily manipulated by others.

____ I recognize my own values and perspectives, and I can speak insightfully about the influences on my beliefs.

____ I do not simply accept conclusions; I evaluate and critique the underlying reasons.

____ I recognize irrelevant facts and false assumptions, and I discount them.

____ I am able to consider the strengths and weaknesses of my own point of view and that of opposing positions.

____ I admit my tendency toward egocentrism and my capacity for self-deception; I work to overcome them.

____ I am able to distinguish what I know from what I don't know; I am not afraid when "I don't know."

____ I am willing to consider all available information when working on problems or making decisions; and I am also flexible and willing to try any good idea whether it has been done before or not.

____ When evaluating the behavior of myself and others, I am conscious of the standards I use, and I am especially concerned with the consequences of actions.

____ I am a good questioner. I like to probe deeply into issues, to dig down to root ideas, to find out what's really going on.

____ I am comfortable being questioned, and I do not become defensive, confused, or intimidated. I welcome good questions since they help to clarify my thinking.

____ I am a critical reader. I read with healthy skepticism, while reserving judgment until I fully understand the author's perspective.

Holistic Critical Thinking Scoring Rubric (HCTSR) ⁵
<p>4 (Strong): Consistently does all or almost all of the following:</p> <ul style="list-style-type: none"> - Accurately interprets evidence, statements, graphics, questions, etc. - Identifies the salient arguments (reasons and claims) pro and con. - Thoughtfully analyzes and evaluates major alternative points of view. - Draws warranted, judicious, non-fallacious conclusions. - Justifies key results and procedures, explains assumptions and reasons. - Fair-mindedly follows where evidence and reasons lead.
<p>3 (Acceptable): Does most or many of the following:</p> <ul style="list-style-type: none"> - Accurately interprets evidence, statements, graphics, questions, etc. - Identifies relevant arguments (reasons and claims) pro and con. - Offers analyses and evaluations of obvious alternative points of view. - Draws warranted, non-fallacious conclusions. - Justifies some results or procedures, explains reasons. - Fair-mindedly follows where evidence and reasons lead.
<p>2 (Unacceptable): Does most or many of the following:</p> <ul style="list-style-type: none"> - Misinterprets evidence, statements, graphics, questions, etc. - Fails to identify strong, relevant counter-arguments. - Ignores or superficially evaluates obvious alternative points of view. - Draws unwarranted or fallacious conclusions. - Justifies few results or procedures, seldom explains reasons. - Regardless of the evidence or reasons, maintains or defends views based on self-interest or preconceptions.
<p>1 (Weak): Consistently does all or almost all of the following:</p> <ul style="list-style-type: none"> - Offers biased interpretations of evidence, statements, graphics, questions, information or the points of views of others. - Fails to identify or hastily dismisses strong, relevant counter-arguments. - Ignores or superficially evaluates obvious alternative points of view. - Argues using fallacious or irrelevant reasons, and unwarranted claims. - Does not justify results or procedures, nor explain reasons. - Regardless of the evidence or reasons, maintains or defends views based on self-interest or preconceptions. - Exhibits close-mindedness or hostility to reason.

Hindrances to Critical Thinking Matching Exercise	
Instructions: Match the four categories of hindrances to critical thinking to the correct subcategory to the right. The categories can be used more than once for this exercise.	
a. Basic Human Limitations	___ is arguing something is true because “it works,” even though the cause of something and the outcome are not demonstrated.
b. The Use of Language	___ is criticizing the person making an argument, not the argument itself
c. Faulty Logic or Perception	___ is being unaware that our memories are often “manufactured” to fill in the gaps in our recollection.
d. Psychological and Sociological Pitfalls	___ is making a comparison that is irrelevant or inappropriate.
	___ is a word or expression that can be understood in more than one way.
	___ can severely affect our ability to think clearly and critically
	___ is making irrelevant emotional appeals to accept a claim
	___ is the intentional use of words to arouse feelings about a subject to bias others positively or negatively
	___ is making illogical analogies to support the validity of a particular claim
	___ is the process whereby one tends to notice and look for what confirms one’s beliefs, and to ignore what contradicts one’s beliefs.

NOTES

¹ www.criticalthinking.org accessed 15 Nov 2012

² Ibid

³ Paul, Richard Dr., and Elder, Linda Dr., *The Miniature Guide to Critical Thinking, Concepts and Tools*, 2008
Foundation for Critical Thinking Press

⁴ Ibid

⁵ Facione, Peter A. *Think Critically*, 2011, Pearson Education, Inc., Saddle River, NJ

⁶ Ibid

⁷ Ibid

⁸ Ibid