The Role of Critical & Constructive Thinking In Education

By Peter Bocchino – Critical Thinking Consultant
Written at the request of Kathy Cox – GA DOE State Superintendent
"The things best to know are first principles and causes, for from them, and through them all other things may be known."

ARISTOTLE

What Is Critical Thinking?

When students are left to their own natural thinking habits in examining positions taken on any issue, their thinking skills most often include many serious flaws and misunderstandings, display fuzziness of thought, engage in the misuse terms, and lack critical insight. This is not because they do not know "how to think." It is the result of not knowing "how to think about the thought process." When we think about thinking, we automatically engage ourselves in the academic discipline known as *logic*. Logic is that branch of philosophy responsible for establishing the laws of argumentation. It involves an understanding of the laws that govern our thought processes. Since all knowledge depends upon the act of thinking, logical thinking skills must be given priority in any academic course. If not, there is the probability that indoctrination will be substituted for education. When students are taught to merely memorize the facts presented and to accept the interpretation of those facts from the point of view given, they are not truly being educated—they are being indoctrinated. The solution to the problem of indoctrination is to teach students how to become critical thinkers.

Below is a comparison of some basic differences between undisciplined thinking and critical thinking:

Undisciplined Thinking	Critical Thinking
Habitual (confusing, no standards or goal)	*Purposeful (clear and precise; end in mind)*
Actual (accepts existing terms and usage)	*Conceptual (tests terms with principles/rules)*
Subjective (biased by point of view)	*Objective (uses first principles and deduction)*
Random (no ordered flow of thought)	*Systematic (think from general to particular)*
Negligent(not able to identify flawed thinking)	*Prudent (recognizes valid/invalid thinking)*
Trivial (not able to draw consequences)	*Inferential (follows thinking to logical outcome)*

Generally speaking, students are rarely taught how to think for themselves with respect to evaluating facts in the context of the discipline in which the facts are being interpreted. Hence, they do not know how to "process" those facts by starting with first principles (starting points of thought) and how to deductively reach a justifiable conclusion apart from a certain point of view. Students are usually given a conclusion on a certain issue and not taught how to test the thinking process that is responsible for that particular conclusion. To truly learn how to evaluate any issue being studied, students need to know how to:

- ❖ Classify the issue with respect to its primary academic discipline
- ❖ Identify the principles and assumptions of that field of knowledge
- ❖ Collect the valid and relevant facts and distinguish between fact and opinion
- ❖ Deductively reason from principles through facts without committing fallacies
- ❖ Carry the reasoning process to its logical conclusion in order to make a valid judgment

What Is Constructive Thinking?

Constructive thinking is the method used to reach a certain point of view through which facts are interpreted and conclusions drawn. This thinking skill consists of the following basic elements:

- ❖ Reliability…...........Anchored in inescapable reasoning
- ❖ Clarity……………Uses appropriate terms to articulate ideas
- ❖ Validity…………..Consistent with deductions and inferences
- ❖ Unity……………..Presents ideas in a prioritized and consistent manner
- ❖ Compatibility……Confirms that facts and theories are valid and harmonized
- ❖ Universality……...Considers a wide range of experience in collecting all facts
- ❖ Plausibility………Explains observations given the academic discipline(s) being utilized

A solid constructive thought process can help to promote healthy discourse in the classroom. The reason for this claim is that the thought process forces students to support their conclusions with reasons and facts. The most compelling feature of constructive thinking is based upon the identification and justification of starting points or first principles. When discussions are shifted from the particular issue being discussed, to the first principle supporting the academic field it is associated with, students are obligated to think more objectively about their view and as a result, will get less emotionally involved (particularly with controversial issues).

What Are The Benefits of Teaching Critical & Constructive Thinking Skills?

The benefits of incorporating critical and constructive thinking skills into the academic arena are too many to list. Some have already been stated or implied above, but here are a few with respect to life skills in general:

- ❖ Promotes self-confidence by using skills to address a wide range of issues
- ❖ Cultivates a desire to become and remain well-informed about such issues
- ❖ Encourages open-mindedness regarding the understanding of divergent opinions
- ❖ Aids in the honest examination of ones own biases, prejudices or egocentric tendencies
- ❖ Enhances the ability to prudently examine issues without making impulsive judgments
- ❖ Helps to foster reconsideration and/or revision of a view through honest reflection

In short, if all teaching required students to think about what is being taught, that by itself would promote critical and constructive thinking. To learn something that is not truly thought about and understood, is nothing but the memorization of facts. That kind of learning results in the formation of mere opinions, not the possession of genuine knowledge and understanding. Yet, genuine knowledge (the *apprehension* of the facts) and an understanding of that knowledge (the *comprehension* of the facts) are not enough. The key to producing good citizens who are well educated lies in the *application* of the facts to real life— wisdom. We should try to be sure that students are coached in thinking in every course that is taught— taught, one hopes, by teachers who know how to think.

I hope that this paper has helped you to evaluate the vital role of critical and constructive thinking as it applies to education. Plato said, "The direction in which education starts a person will determine his future." If this statement is true, and there are many reasons to believe so, then educators are obligated to provide students with a solid academic foundation. That foundation must include these thinking skills, for what is more fundamental then logic? To deny that this is the case, would actually be evidence for its validity because you must have "good reasons" as to why these skills should not be included—that is the inescapable nature of logic. The chart below outlines the some of the fundamental elements of critical/constructive thinking being utilized in the Controversial Issues course at Norcross High School.

Gwinnett County Public Schools

Scientific Thinking	Critical Thinking	Constructive Thinking	Controversial Thinking
How To Think About Past Causes	*How To Think About Thinking*	*How To Think About Worldviews*	*How To Think About Moral Issues*
Forensics	**Philosophy**	**Epistemology**	**Axiology**
First Principles: Causality/Analogy	First Principles: LNC / LID	First Principle: Correspondence	First Principle: Intrinsic Value
Past Singularities	**Positive Discourse**	**Theories of Knowledge**	**Ethics & Human Rights**