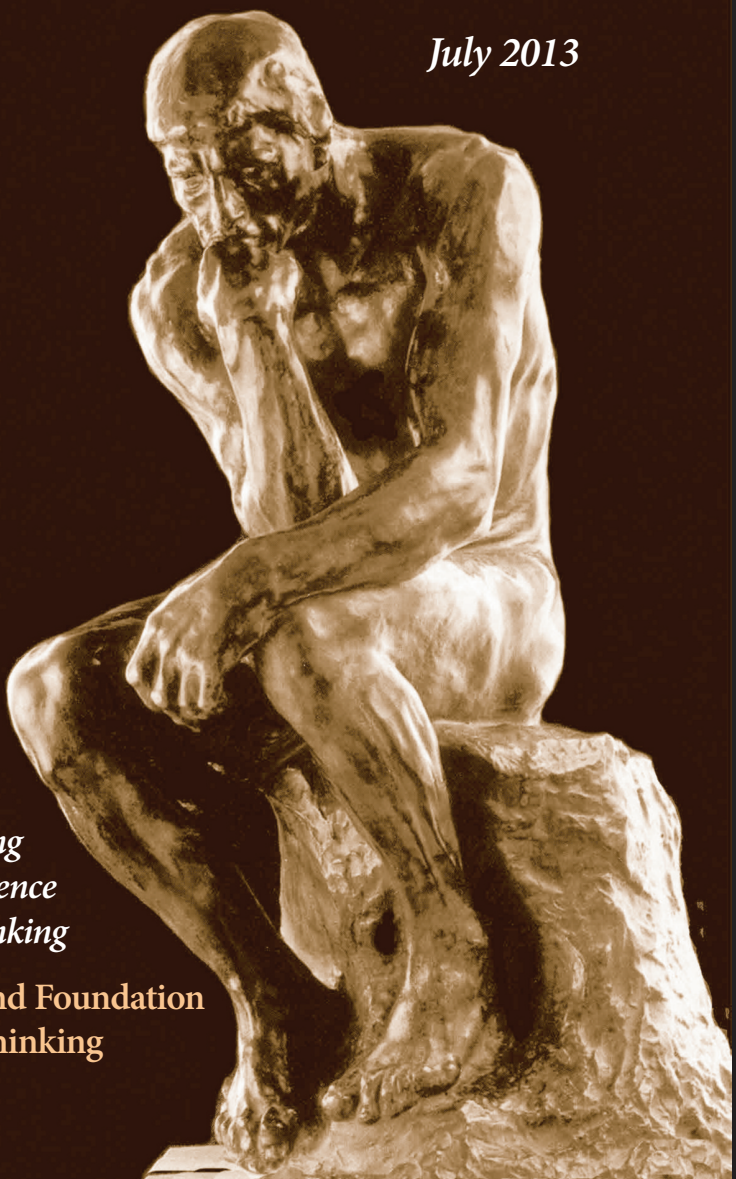
# The 33rd Annual International Conference on Critical Thinking and Educational Reform

*July 2013*



*The world's longest-running annual conference on critical thinking*

The Center and Foundation for Critical Thinking

# Proceedings of the 33rd Annual International Conference on Critical Thinking and Educational Reform

July 20 - 25, 2013

## Socrates

The proceedings of the 33rd International Conference on Critical Thinking are dedicated to the memory of Socrates, an exemplar of the fairminded critical thinker who was willing to die for his right to educate and emancipate the mind.

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George Hanford
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Michael Shermer
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William Robinson
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# Introduction to the Conference

The Center and Foundation for Critical Thinking have together hosted critical thinking academies and conferences for more than three decades. During that time, we have played a key role in defining, structuring, assessing, improving, and advancing the principles and best practices of fairminded critical thought in education and society. Our annual conference provides delegates from around the world a unique opportunity to improve their understanding of critical thinking, as well as their ability to foster it more substantively in the classroom and in all aspects of their work and life.

Throughout our work we emphasize the importance of fostering a substantive conception of critical thinking. Such a conception not only highlights the qualities of the educated person, but also implies the proper design of the educational process. There are essential minimal conditions for educating minds. These entail modes of instruction that facilitate development of the standards, abilities, and traits of the educated person. For example, when history is substantively taught, it is taught as historical thinking; the major goal is to give students practice in thinking historically (analyzing, evaluating, and reconstructing historical interpretations and problems). As a result, students learn not only how to read historical texts with insight and understanding, but also how to gather important facts and write well-developed historical essays of their own. Through this mode of instruction, students come to see the significance of historical thinking, both in their own lives and in the life of culture and society. History becomes—in such a transformed mind—not random facts from the past, but a way to reason about the past in order to make intelligent decisions in the present, as well as reasonable plans for the future.

When students are taught using a substantive concept of education as the guide to the design of instruction, they learn to initiate, analyze, and evaluate their own thinking and the thinking of others (within all the content areas they study). Doing so, they come to act more reasonably and effectively in every part of life. They are able to do this because they have acquired intellectual tools and intellectual standards essential to sound reasoning, as well as to personal and professional judgment. Self-assessment becomes an integral part of their lives. They are able to master content in diverse disciplines. They become proficient readers, writers, speakers, and listeners. They become reasonable and fairminded persons capable of empathizing with views with which they disagree. They are able to use their reasoning skills to contribute to their own emotional life, and therefore to transform their desires and motivations accordingly. They come to think, feel, and act effectively and with integrity.

All of our work and thus all of our conference sessions are based on this substantive conception of critical thinking. We are committed to a concept that interfaces well within the disciplines, that integrates critical with creative thinking, and that applies directly to the needs of everyday and professional life.

All conference sessions are designed to converge on basic critical thinking principles and to enrich a core concept of critical thinking with practical teaching and learning strategies.

# Conference Overview

**The conference consists in the following three types of sessions:**

1. *Focal Sessions* that focus fundamentally on the core concepts and principles explicit in critical thinking. These sessions are led primarily by Fellows of the Foundation for Critical Thinking.

2. *Concurrent Sessions and Roundtable Discussions,* which are led by guest faculty and administrators attempting to bring critical thinking into instruction and in various domains of life.

3. *Bertrand Russell Distinguished Scholars Series,* which highlights the contributions of important scholars to the conception of critical societies.

# Conference at a Glance

## Preconference

**Saturday, July 20 and Sunday, July 21**

**(9:00 am - 4:00 pm)**

(Preconference registrants have chosen one of the following sessions)

- Internalizing the Foundations of Critical Thinking– Richard Paul and Brian Barnes
- Using the Oral Examination to Foster Internalization of Essential Concepts– Linda Elder and Rush Cosgrove
- Helping Students Improve Their Writing Through the Tools of Critical Thinking– Gerald Nosich

## DAY ONE - Monday, July 22

## Opening Ceremony

**(8:45 - 10:00 am)**

Keynote address:

**Dr. Richard Paul**
Empire Ballroom

## Focal Sessions Day One

**(10:30 am - 4:00 pm)**

(Conference registrants have chosen one of the following sessions)

- Placing a Substantive Conception of Critical Thinking at the Heart of Teaching and Learning– Rush Cosgrove and Brian Barnes
- Teaching Students to Think Within a Field or Discipline– Gerald Nosich
- For Administrators: Understanding the Long-Term Nature of Professional Development in Critical Thinking– Linda Elder
- Dialogue with Richard Paul: Objections and Replies– Richard Paul *(advanced session)*

# Conference at a Glance

## DAY TWO - Tuesday, July 23
## FOCAL SESSIONS

### Morning Focal Sessions
**(9:00 am - 11:45 am)**

(Conference registrants have chosen one of the following sessions for the morning)

- Teaching Students Fundamental and Powerful Concepts– Gerald Nosich
- Critical Thinking and the Common Core State Standards– Brian Barnes
- Helping Students Come to Terms With Their Own Self-Defeating Attitudes and Behavior– Linda Elder and Rush Cosgrove
- Dialogue with Richard Paul on the Importance of Intellectual Virtues in Teaching and Learning– Richard Paul

### Afternoon Focal Sessions (Tues.)
**(1:15 pm - 4:00 pm)**

(Conference registrants have chosen one of the following sessions for the afternoon)

- Using the Tools of Critical Thinking to Teach Students How to Study and Learn– Gerald Nosich
- Emancipating the Mind Through Critical Thinking– Linda Elder
- How to Prove You are Fostering Critical Thinking in Your Instruction: Designing Your Own Research Project– Rush Cosgrove
- From the Trenches: Classroom Strategies for Equipping Students to Think Critically– Laura Ramey and Gary Meegan

### Bertrand Russell Distinguished Scholars Lecture
### Dr. Elizabeth Loftus

Illusions of Memory

(5:00 – 6:00 pm
Empire Ballroom
Tuesday)

*All are invited.*

# Conference at a Glance

## DAY THREE - Wednesday, July 24

### Concurrent Sessions

(see concurrent session program)

**Concurrent Session I: 8:30 am- 9:30 am**

- Critical Thinking in the College Classroom– Jeffery Swain, Augustus Henry, Derek Ford
- Long-Term Professional Development in Critical Thinking: Lessons from Ten Years of Educational Reform– Paul Bankes
- Using the Paul-Elder Framework as a Basis for GenEd Courses in Public Health– Pete Walton
- Critical Thinking for Mentors: Directing Conversations with the Elements of Thought to Model Healthy Relationships– Justin Garcia
- Critical Thinking in the Primary Classroom– Carmen Polka

**Concurrent Session II (Wed.): 9:40 am - 10:40 am**

- Learning to Think Within a Discipline ...by Doing It–Christopher Petrie
- In Vivo: Facilitating Critical Thinking in Medical Education/ Training Using a Case-Based Modality– Gilbert Villela, David Elkin
- Mentoring: Using the Paul/Elder Critical Thinking Model to Assist Others in Fostering the Pursuit of an Examined Life– Paula Fraser
- Using Intellectual Virtues to Frame the K-16 Common Core– Heather Barrack
- Critical Thinking and Ethical and Social Issues: Critical Thinking, Ethics, and the Rights of Animals– Robert Schlim

### Russell Scholar Conversation: Elizabeth Loftus

10:55 am – 12:25 pm
Empire Ballroom
(Wednesday)

**Concurrent Session III (Wed.): 1:45 pm - 2:45 pm**

- Using Assessment Tools to Promote Faculty Members' Understanding and Use of Critical Thinking Teaching Strategies– Bill Watson, Christopher Petrie
- Developing Critical Thinking Within a Master of Science in Leadership Program– Daryl Watkins
- Creating & Assessing Fairminded Critical Thinkers; Improving Our Thinking to Save the World– Juliet Mohnkern, Krista Ferraro
- Improving Student Critical Thinking Through Direct Instruction in Rhetorical Analysis– Lauren McGuire
- Better Living Through Better Thinking: The Impact of Incorporating the Paul-Elder Framework of Critical Thinking into a Campus-Community Partnership– Edna Ross

# Conference at a Glance

- Actualizing Critical Thinking Principles Through Second Language Instruction in Iran as a Non-Western Society– Mohammad Bagher Bagheri

**Concurrent Session IV (Wed.): 3:00 pm - 4:00 pm**

- Critical Thinking in Teacher Education: Perceptions and Practices of Teacher Candidates and College Faculty– Spencer Wagley
- Assessing Critical Thinking using Scientific Reasoning Tests– Joseph D'Silva
- Using the Elements of Thought and Intellectual Standards to Analyze, Transform, and Resolve Interpersonal Conflicts– Shawn Queeney
- Developing Course Assignments to Guide Students in Their Development and Use of Critical Thinking Skills– Mel Manson
- Critical Thinking Beyond the Academic Setting: Engaging Our Fellow Citizens– Doug Matheson
- A Proven Critical Thinking Strategy: Teaching Students the Art of Reason Through the Logic of Global Health Care– Juanita Holliman

## Round Table Discussions

7:00 pm - 8:30 pm
Sonoma Room

## DAY FOUR - Thursday, July 25

**(9:00 am - 11:30 am)**

## Focal Sessions

(Conference registrants have chosen one of the following sessions for the morning)

- Fostering Critical Thinking Through Close Reading– Rush Cosgrove
- Designing Instruction so That Students Learn to Think Things Through– Gerald Nosich
- Reaching for Self-Command and Self-Actualization Through Critical Thinking– Linda Elder
- Dialogue With Richard Paul on the Possibility of Cultivating Fairminded Critical Societies– Richard Paul and Brian Barnes

## Closing Session (Thurs.)

*Where Do We Go From Here?*

(11:50 am – 12:30 pm
Empire Ballroom)

Led by Dr. Richard Paul and the Fellows of the Foundation for Critical Thinking.

All conference attendees are invited.

# Preconference Schedule
# Daily Schedule July 20-21, 2013

## Saturday - July 20

| | | |
|---|---|---|
| 7:30 a.m. | - 9:00 a.m. | Registration & Check In – Horizon Room |
| 9:00 a.m. | - 10:30 a.m. | Preconference Workshops begin |
| 10:30 a.m. | - 10:45 a.m. | Break – Horizon Room |
| 10:45 a.m. | - 11:45 a.m. | Preconference Workshops continue |
| 11:45 a.m. | - 1:15 p.m. | Lunch — on your own |
| 1:15 p.m. | - 2:45 p.m. | Preconference Workshops continue |
| 2:45 p.m. | - 3:00 p.m. | Break – Horizon Room |
| 3:00 p.m. | - 4:00 p.m. | Preconference Workshop sessions end |

## Sunday - July 21

| | | |
|---|---|---|
| 9:00 a.m. | - 10:30 a.m. | Preconference Workshops begin |
| 10:30 a.m. | - 10:45 a.m. | Break – Horizon Room |
| 10:45 a.m. | - 11:45 a.m. | Preconference Workshops continue |
| 11:45 a.m. | - 1:15 p.m. | Lunch — on your own |
| 1:15 p.m. | - 2:45 p.m. | Preconference Workshops continue |
| 2:45 p.m. | - 3:00 p.m. | Break – Horizon Room |
| 3:00 p.m. | - 4:00 p.m. | Preconference Workshop sessions end |

# Conference Begins
# Daily Schedule July 22-23, 2013
# Days One and Two

## Monday - July 22

| | | |
|---|---|---|
| 7:30 a.m. | - 8:40 a.m. | Registration & Check In – Horizon Room |
| 8:45 a.m. | - 10:00 a.m. | Opening Ceremony – Empire Ballroom |
| 10:00 a.m. | - 10:30 a.m. | Break – Horizon Room |
| 10:30 a.m. | - 12:00 p.m. | Day One Focal Sessions Begin |
| 12:00 p.m. | - 1:30 p.m. | Lunch — on your own |
| 1:30 p.m. | - 2:45 p.m. | Day One Focal Sessions Continue |
| 2:45 p.m. | - 3:00 p.m. | Break – Horizon Room |
| 3:00 p.m. | - 4:00 p.m. | Day One Focal Sessions Continue |

## Tuesday - July 23

| | | |
|---|---|---|
| 9:00 a.m. | - 10:30 a.m. | Morning Sessions Begin |
| 10:30 a.m. | - 10:45 a.m. | Break – Horizon Room |
| 10:45 a.m. | - 11:45 a.m. | Morning Focal Sessions Continue |
| 11:45 a.m. | - 1:15 p.m. | Lunch — on your own |
| 1:15 p.m. | - 2:45 p.m. | Afternoon Focal Sessions Begin |
| 2:45 p.m. | - 3:00 p.m. | Break – Horizon Room |
| 3:00 p.m. | - 4:00 p.m. | Afternoon Focal Sessions Continue |
| 5:00 p.m. | - 6:00 p.m. | Bertrand Russell Lecture - Dr. Elizabeth Loftus* |

# Conference Continues
# Daily Schedule July 24-25, 2013
# Days Three and Four

## Wednesday - July 24…concurrent sessions.

## Choose sessions from the concurrent session program.

| | | |
|---|---|---|
| 8:30 a.m. | - 9:30 am | Concurrent Sessions I |
| 9:40 a.m. | - 10:40 am | Concurrent Sessions II |
| 10:40 am | - 10:55 am | Break – Horizon Room |
| 10:55 am | - 12:25 pm | Bertrand Russell Scholar Conversation with Elizabeth Loftus* |
| 12:25 pm | - 1:45 pm | Lunch — on your own |
| 1:45 pm | - 2:45 pm | Concurrent Sessions III |
| 2:45 pm | - 3:00 pm | Break – Horizon Room |
| 3:00 pm | - 4:00 pm | Concurrent Sessions IV |
| 7:00 pm | - 8:30 pm | Round-Table Discussions |

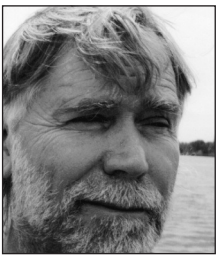
## Thursday - July 25

| | | |
|---|---|---|
| 9:00 a.m. | - 10:15 a.m. | Morning Sessions Begin |
| 10:15 a.m. | - 10:30 a.m. | Break – Horizon Room |
| 10:30 a.m. | - 11:30 a.m. | Morning Sessions Continue |
| 11:50 a.m. | - 12:30 p.m. | Closing Session – Empire Ballroom |

** See Bertrand Russell Distinguished Scholars Critical Thinking Series*

# Fellows of the Foundation for Critical Thinking and Focal Session Presenters



**Dr. Richard Paul** is Director of Research and Professional Development at the Center for Critical Thinking and Chair of the National Council for Excellence in Critical Thinking. Dr. Paul is an internationally recognized authority on critical thinking, with eight books and over 200 articles on the subject. He has written books for every grade level and has done extensive experimentation with teaching tactics and strategies, as well as devising—among other things—novel ways to engage students in rigorous self-assessment. Dr. Paul has received four degrees and has given lectures on critical thinking at many universities in both the United States and abroad, including Harvard, the University of Chicago, the University of Illinois, and the universities of Puerto Rico, Costa Rica, British Columbia, Toronto, and Amsterdam. He taught beginning and advanced courses in critical thinking at the university level for over 20 years. He has been the recipient of numerous honors and awards, including Distinguished Philosopher (by the Council for Philosophical Studies, 1987), O.C. Tanner Lecturer in Humanities (by Utah State University, 1986), Lansdown Visiting Scholar (by the University of Victoria, 1987), and the Alfred Korsybski Memorial Lecturer (by the Institute for General Semantics, 1987). His views on critical thinking have been canvassed in the *New York Times, Education Week, The Chronicle of Higher Education, American Teacher, Reader's Digest, Educational Leadership, Newsweek,* and *U.S. News and World Report*.

**Dr. Linda Elder** is an educational psychologist and a prominent authority on critical thinking. She is President of the Foundation for Critical Thinking and Executive Director of the Center for Critical Thinking. Dr. Elder has taught both psychology and critical thinking at the college level, and has given presentations to more than 20,000 educators at all levels. She has coauthored four books and 24 thinker's guides on critical thinking. Dr. Elder has developed an original stage theory of critical thinking development. Concerned with understanding and illuminating the relationship between thinking and affect, and the barriers to critical thinking, Dr. Elder has placed these issues at the center of her thinking and her work.

## Fellows of the Foundation for Critical Thinking and Focal Session Presenters, cont.

**Dr. Gerald Nosich** is an authority on critical thinking. He has given more than 150 national and international workshops on critical thinking. He has worked with the U.S. Department of Education on a project for the National Assessment of Higher Order Thinking skills, has served as the Assistant Director of the Center for Critical Thinking, and been featured as a Noted Scholar at the University of British Columbia. He is Professor of Philosophy at Buffalo State College in New York. He is the author of two books including *Learning to Thinking Things Through.*

**Mr. Rush Cosgrove** is Historian for the Foundation for Critical Thinking and is engaged in research for a PhD at the University of Cambridge. He holds Masters degrees from both the University of Oxford, New College and the University of Cambridge, Darwin College. He has conducted research on critical thinking and the Oxford Tutorial and is currently conducting research on the Paulian Framework for critical thinking as contextualized at a major research university in the U.S. He conducts workshops in critical thinking for both faculty and students, in English as well as Spanish.

## Guest Focal Session Presenters

**Mr. Brian Barnes** has taught Critical Thinking courses for seven years at the university level. He is a PhD candidate at the University of Louisville, which fosters the Paulian Approach to critical thinking. Barnes has made critical thinking presentations for a wide variety of educational audiences, often presenting critical thinking through the lens of sustainable systems. With his teaching experience and deep connection to the logic of student thought, Barnes brings a wealth of knowledge to the conference setting. He is a visiting scholar of the Foundation for Critical Thinking.

**Gary Meegan** is Chair of Theology at Junipero Serra High School in San Mateo, California. He has taught both in public and private school settings, from Kindergarten through twelfth grade. He has presented sessions on critical thinking to the American Men's Association, the American Academy of Religion, the California Association of Teachers of English, and to elementary and secondary schools. This is his fourth year presenting at the International Conference on Critical Thinking and Educational Reform.

**Laura Ramey** teaches theology, the history of Christianity, and social justice at Serra High School in San Mateo. She has incorporated critical thinking in her high school classes for the last five years. She holds Masters degrees in business and theology and is currently completing research for her EdD at the University of San Francisco. With partner teacher Gary Meegan, Laura has presented papers and workshops for the Foundation and Center for Critical Thinking, the American Academy of Religion, and the National Catholic Educational Association on the practical aspects of teaching critical thinking. This is Laura's fourth year presenting at the International Conference on Critical Thinking and Education Reform.

# The Bertrand Russell Distinguished Scholars Critical Thinking Series

This year's conference marks our second year to include the Bertrand Russell Distinguished Scholars Critical Thinking Series. This new feature of the conference highlights the work and thinking of distinguished thinkers within subjects, fields, disciplines, or about specific topics or issues. We honor the thinking, the philosophy, and the contributions of Bertrand Russell through this series.

Bertrand Russell was one of the most influential 20th century philosophers. In the following passages, he emphasizes the importance of open and free inquiry. He stresses the critical need to create education systems that foster fairminded pursuit of knowledge, and warns of the dangers inherent in dogmatic ideologies.

> The conviction that it is important to believe this or that, even if a free inquiry would not support the belief, is one which is common to almost all religions and which inspires all systems of state education...A habit of basing convictions upon evidence, and of giving to them only that degree of certainty which the evidence warrants, would, if it became general, cure most of the ills from which the world is suffering. But at present, in most countries, education aims at preventing the growth of such a habit, and men who refuse to profess belief in some system of unfounded dogmas are not considered suitable as teachers of the young…
>
> The world that I should wish to see would be one freed from the virulence of group hostilities and capable of realizing that happiness for all is to be derived rather from cooperation than from strife. I should wish to see a world in which education aimed at mental freedom rather than at imprisoning the minds of the young in a rigid armor of dogma calculated to protect them through life against the shafts of impartial evidence. The world needs open hearts and open minds, and it is not through rigid systems, whether old or new, that these can be derived (Russell, 1957, pp. vi-vii).

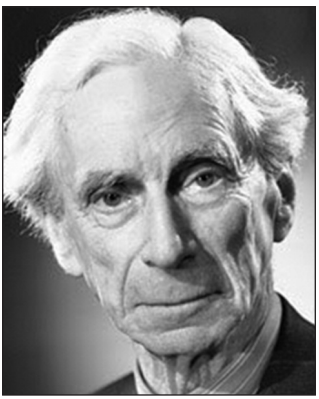
 

In his book, *Portraits from Memory*, "Reflections on My Eightieth Birthday," Russell (1956) comments on the long-term nature of change and the importance of moving ever closer toward the creation of critical societies:

> ...beneath all this load of failure I am still conscious of something that I feel to be victory. I may have conceived theoretical truth wrongly, but I was not wrong in thinking that there is such a thing, and that it deserves our allegiance. I may have thought the road to a world of free and happy human beings shorter than it is proving to be, but I was not wrong in thinking that such a world is possible, and that it is worth while to live with a view to bringing it nearer. I have lived in the pursuit of a vision, both personal and social. Personal: to care for what is noble, for what is beautiful, for what is gentle; to allow moments of insight to give wisdom at more mundane times. Social: to see in imagination the society that is to be created, where individuals grow freely, and where hate and greed and envy die because there is nothing to nourish them. These things I believe, and the world, for all its horrors, has left me unshaken.

Russell (1919) also illuminates the fact that the vast majority of people today do not think critically, or indeed ethically, and that those who do will seek a "new system of society." He says:

> The great majority of men and women, in ordinary times, pass through life without ever contemplating or criticizing, as a whole, either their own conditions or those of the world at large. They find themselves born into a certain place in society, and they accept what each day brings forth, without any effort of thought beyond what the immediate present requires…they seek the satisfaction of the needs of the moment, without much forethought, and without considering that by sufficient effort the whole condition of their lives could be changed...It is only a few rare and exceptional men who have that kind of love toward mankind at large that makes them unable to endure patiently the general mass of evil and suffering, regardless of any relation it may have to their own lives. These few, driven by sympathetic pain, will seek, first in thought and then in action, for some way of escape, some new system of



of society by which life may become richer, more full of joy and less full of preventable evils than it is at present (p. viii).

Bertrand Russell's thoughts and writings on social issues are intimately linked with the ideals of critical thinking and the concept of fairminded critical societies.


References:

Russell, B. (1919). *Proposed Roads to Freedom*. NY: Henry Holt and Co. Russell, B. (1956). *Portraits From Memory and Other Essays* . New York: Simon and Schuster.

Russell, B. (1957). *Why I am Not a Christian*. New York: Simon and Schuster.

# Bertrand Russell Distinguished Scholar for the 33rd International Conference

This feature of the conference highlights the work and thinking of distinguished thinkers within subjects, fields, disciplines, or about specific topics or issues. This year's scholar is Dr. Elizabeth Loftus. All conference participants are invited to these presentations.

**Dr. Elizabeth Loftus**

Dr. Loftus is Distinguished Professor at the University of California, Irvine. Since receiving her Ph.D. in Psychology from Stanford University, she has published 22 books (including the award-winning *Eyewitness Testimony*) and 500 scientific articles. Loftus's research of the last 30 years has focused on the malleability of human memory. She has been recognized in the Review of General Psychology as one of the 100 most eminent psychologists of the 20th century.


## The Bertrand Russell Scholars Program

**Lecture by Russell Scholar Dr. Elizabeth Loftus**

*Illusions of Memory*

Tuesday, July 24 5:00 p.m. - 6:00 pm

**Conversation with Dr. Loftus**

Wednesday 10:55- 12:25

*Both to be held in the Empire Ballroom*

## Bertrand Russell Series Format

To draw out the critical thinking implicit in the thinking of the Russell Scholars, the following unique design for the conversation is used:

A fellow of the Foundation for Critical Thinking will lead a Socratic dialogue with the Scholar (45 minutes). This will be followed by 20 minutes of questions to the Scholar by conference delegates and attendees. There will then be another 20-30 minutes of Socratic dialogue between moderator and Scholar.

The presentation will be followed by a book signing. Books by Dr. Loftus will be available for sale at that time. These books will also be available for sale throughout the conference. The number of books is limited.

*From the archives...*

# Critical Thinking: Basic Questions and Answers

*By Richard Paul*

*Abstract*
*In this interview for* Think *magazine (April '92). Richard Paul provides a quick overview of critical thinking and the issues surrounding it: defining it, common mistakes in assessing it, and its relation to communication skills, self-esteem, collaborative learning, motivation, curiosity, job skills for the future, national standards, and assessment strategies.*

***Question:*** *Critical thinking is essential to effective learning and productive living. Would you share your definition of critical thinking?*

***Paul:*** First, since critical thinking can be defined in a number of different ways consistent with each other, we should not put a lot of weight on any one definition. Definitions are at best scaffolding for the mind. With this qualification in mind, here is a bit of scaffolding: critical thinking is thinking about your thinking while you're thinking in order to make your thinking better. Two things are crucial: 1) critical thinking is not just thinking, but thinking which entails self-improvement and 2) this improvement comes from skill in using standards by which one appropriately assesses thinking. To put it briefly, it is self-improvement (in thinking) through standards (that assess thinking).

To think well is to impose discipline and restraint on our thinking—by means of intellectual standards—in order to raise our thinking to a level of "perfection" or quality that is not natural or likely in undisciplined, spontaneous thought. The dimension of critical thinking least understood is that of intellectual standards. Most teachers were not taught how to assess thinking through standards; indeed, often the thinking of teachers themselves is very "undisciplined" and reflects a lack of internalized intellectual standards.

***Question:*** *Could you give me an example?*

***Paul:*** Certainly, one of the most important distinctions that teachers need to routinely make, and which takes disciplined thinking to make, is that between reasoning and subjective reaction. If we are trying to foster quality thinking, we don't want students simply to assert things; we want them to try to reason things out on the basis of evidence and good reasons. Often, teachers are unclear about this basic difference. Many teachers are apt to take student writing or speech which is fluent and witty or glib and amusing as good thinking. They are often unclear about the constituents of good reasoning. Hence, even though a student may just be asserting things, not reasoning things out at all, if she is doing so with vivacity and flamboyance, teachers are apt to take this to be equivalent to good reasoning. This was made clear in a recent California state-wide writing assessment in which teachers and testers applauded a student essay, which they said illustrated "exceptional achievement" in reasoned evaluation, an essay that contained no reasoning at all, that was nothing more than one subjective reaction after another.

The assessing teachers and testers did not notice that the student failed to respond to the directions, did not support his judgment with reasons and evidence, did not consider possible criteria on which to base his judgment, did not analyze the subject in the light of the criteria, and did not select evidence that clearly supported his judgment. Instead the student 1) described an emotional exchange, 2) asserted—without evidence—some questionable claims, and 3) expressed a variety of subjective preferences. The assessing teachers were apparently not clear enough about the nature of evaluative reasoning or the basic notions of criteria, evidence, reasons, and well-supported judgment to notice the discrepancy. The result was, by the way, that a flagrantly misgraded student essay was showcased nationally (in ASCD's Developing Minds), systematically misleading the 150,000 or so teachers who read the publication.

***Question:*** *Could this possibly be a rare mistake, not representative of teacher knowledge?*

***Paul:*** I don't think so. Let me suggest a way in which you could begin to test my contention. If you are familiar with any thinking skills programs, ask some one knowledgeable about it the "Where's the beef?" question, namely,

"What intellectual standards does the program articulate and teach?" I think you will first find that the person is puzzled about what you mean. And then when you explain what you mean, I think you will find that the person is not able to articulate any such standards. Thinking skills programs without intellectual standards are tailor-made for mis-instruction. For example, one of the major programs asks teachers to encourage stu dents to make inferences and use analogies, but is silent about how to teach students to assess the inferences they make and the strengths and weaknesses of the analogies they use. This misses the point. The idea is not to help students to make more inferences but to make sound ones, not to help students to come up with more analogies but with more useful and insightful ones.

***Question:*** *What is the solution to this problem? How, as a practical matter, can we solve it?*

***Paul:*** Well, not with more gimmicks or quick-fixes. Not with more fluff for teachers. Only with quality long-term staff development that helps the teachers, over an extended period of time, over years not months, to work on their own thinking and come to terms with what intellectual standards are, why they are essential, and how to teach for them. The city of Greensboro, North Carolina has just such a long-term, quality, critical thinking program. So that's one model your readers might look at. In addition, there is a new national organization, the National Council for Excellence in Critical Thinking Instruction, that is focused precisely on the articulation of standards for thinking, not just in general, but for every academic subject area. It is now setting up research-based committees and regional offices to disseminate its recommendations. I am hopeful that eventually, through efforts such as these, we can move from the superficial to the substantial in fostering quality student thinking. The present level of instruction for thinking is very low indeed.

***Question:*** *But there are many areas of concern in instruction, not just one, not just critical thinking, but communication skills, problem solving, creative thinking, collaborative learning, self-esteem, and so forth. How are districts to deal with the full array of needs? How are they to do all of these rather than simply one, no matter how important that one may be?*

***Paul:*** This is the key. Everything essential to education supports everything else essential to education. It is only when good things in education are viewed

superficially and wrongly that they seem disconnected, a bunch of separate goals, a conglomeration of separate problems, like so many bee bees in a bag. In fact, any well-conceived program in critical thinking requires the integration of all of the skills and abilities you mentioned above. Hence, critical thinking is not a set of skills separable from excellence in communication, problem solving, creative thinking, or collaborative learning, nor is it indifferent to one's sense of self-worth.

***Question:*** *Could you explain briefly why this is so?*

***Paul:*** Consider critical thinking first. We think critically when we have at least one problem to solve. One is not doing good critical thinking, therefore, if one is not solving any problems. If there is no problem there is no point in thinking critically. The "opposite" is also true. Uncritical problem solving is unintelligible. There is no way to effectively solve problems unless one thinks critically about the nature of the problems and of how to go about solving them. Thinking our way through a problem to a solution, then, is critical thinking, not something else. Furthermore, critical thinking, because it involves our working out afresh our own thinking on a subject, and because our own thinking is always a unique product of our self-structured experience, ideas, and reasoning, is intrinsically a new "creation", a new "making", a new set of cognitive and affective structures of some kind. All thinking, in short, is a creation of the mind's work, and when it is disciplined so as to be well-integrated into our experience, it is a new creation precisely because of the inevitable novelty of that integration. And when it helps us to solve problems that we could not solve before, it is surely properly called "creative".

The "making" and the "testing of that making" are intimately interconnected. In critical thinking we make and shape ideas and experiences so that they may be used to structure and solve problems, frame decisions, and, as the case may be, effectively communicate with others. The making, shaping, testing, structuring, solving, and communicating are not different activities of a fragmented mind but the same seamless whole viewed from different perspectives.

***Question:*** *How do communication skills fit in?*

***Paul:*** Some communication is surface communication, trivial communication —surface and trivial communication don't really require education. All of

us can engage in small talk, can share gossip. And we don't require any intricate skills to do that fairly well. Where communication becomes part of our educational goal is in reading, writing, speaking and listening. These are the four modalities of communication which are essential to education and each of them is a mode of reasoning. Each of them involves problems. Each of them is shot through with critical thinking needs. Take the apparently simple matter of reading a book worth reading. The author has developed her thinking in the book, has taken some ideas and in some way represented those ideas in extended form. Our job as a reader is to translate the meaning of the author into meanings that we can under stand. This is a complicated process requiring critical thinking every step along the way. What is the purpose for the book? What is the author trying to accomplish? What issues or problems are raised? What data, what experiences, what evidence are given? What concepts are used to organize this data, these experiences? How is the author thinking about the world? Is her thinking justified as far as we can see from our perspective? And how does she justify it from her perspective? How can we enter her perspective to appreciate what she has to say? All of these are the kinds of questions that a critical reader raises. And a critical reader in this sense is simply someone trying to come to terms with the text.

So if one is an uncritical reader, writer, speaker, or listener, one is not a good reader, writer, speaker, or listener at all. To do any of these well is to think critically while doing so and, at one and the same time, to solve specific problems of communication, hence to effectively communicate. Communication, in short, is always a transaction between at least two logics. In reading, as I have said, there is the logic of the thinking of the author and the logic of the thinking of the reader. The critical reader reconstructs (and so translates) the logic of the writer into the logic of the reader's thinking and experience. This entails disciplined intellectual work. The end result is a new creation; the writer's thinking for the first time now exists within the reader's mind. No mean feat!

***Question:*** *And self esteem? How does it fit in?*

***Paul:*** Healthy self-esteem emerges from a justified sense of self-worth, just as self-worth emerges from competence, ability, and genuine success. If one simply feels good about oneself for no good reason, then one is either

arrogant (which is surely not desirable), or, alternatively, has a dangerous sense of misplaced confidence. Teenagers, for example, sometimes think so well of themselves that they operate under the illusion that they can safely drive while drunk or safely take drugs. They often feel much too highly of their own competence and powers and are much too unaware of their limitations. To accurately sort out genuine self-worth from a false sense of self-esteem requires, yes you guessed it, critical thinking.

***Question:*** *And finally, what about collaborative learning? How does it fit in?*

***Paul:*** Collaborative learning is desirable only if grounded in disciplined critical thinking. Without critical thinking, collaborative learning is likely to become collaborative mis-learning. It is collective bad thinking in which the bad thinking being shared becomes validated. Remember, gossip is a form of collaborative learning; peer group indoctrination is a form of collaborative learning; mass hysteria is a form of speed collaborative learning (mass learning of a most undesirable kind). We learn prejudices collaboratively, social hates and fears collaboratively, stereotypes and narrowness of mind, collaboratively. If we don't put disciplined critical thinking into the heart and soul of the collaboration, we get the mode of collaboration which is antithetical to education, knowledge, and insight.

So there are a lot of important educational goals deeply tied into critical thinking just as critical thinking is deeply tied into them. Basically the problem in the schools is that we separate things, treat them in isolation and mistreat them as a result. We end up with a superficial representation, then, of each of the individual things that is essential to education, rather than seeing how each important good thing helps inform all the others.

***Question:*** *One important aim of schooling should be to create a climate that evokes children's sense of wonder and inspires their imagination to soar. What can teachers do to "kindle" this spark and keep it alive in education?*

***Paul:*** First of all, we kill the child's curiosity, her desire to question deeply, by superficial didactic instruction. Young children continually ask why. Why this and why that? And why this other thing? But we soon shut that curiosity down with glib answers, answers to fend off rather than respond to the logic of the question. In every field of knowledge, every answer generates more questions, so that the more we know the more we recognize we don't know. It is only people who have little knowledge who take their

knowledge to be complete and entire. If we thought deeply about almost any of the answers which we glibly give to children, we would recognize that we don't really have a satisfactory answer to most of their questions. Many of our answers are no more than a repetition of what we as children heard from adults. We pass on the misconceptions of our parents and those of their parents. We say what we heard, not what we know. We rarely join the quest with our children. We rarely admit our ignorance, even to ourselves. Why does rain fall from the sky? Why is snow cold? What is electricity and how does it go through the wire? Why are people bad? Why does evil exist? Why is there war? Why did my dog have to die? Why do flowers bloom? Do we really have good answers to these questions?

***Question:*** *How does curiosity fit in with critical thinking?*

***Paul:*** To flourish, curiosity must evolve into disciplined inquiry and reflection. Left to itself it will soar like a kite without a tail, that is, right into the ground! Intellectual curiosity is an important trait of mind, but it requires a family of other traits to fulfill it. It requires intellectual humility, intellectual courage, intellectual integrity, intellectual perseverance, and faith in reason. After all, intellectual curiosity is not a thing in itself—valuable in itself and for itself. It is valuable because it can lead to knowledge, understanding, and insight, because it can help broaden, deep en, sharpen our minds, making us better, more humane, more richly endowed persons. To reach these ends, the mind must be more than curious, it must be willing to work, willing to suffer through confusion and frustration, willing to face limitations and overcome obstacles, open to the views of others, and willing to entertain ideas that many people find threatening. That is, there is no point in our trying to model and encourage curiosity, if we are not willing to foster an environment in which the minds of our students can learn the value and pain of hard intellectual work. We do our students a disservice if we imply that all we need is unbridled curiosity, that with it alone knowledge comes to us with blissful ease in an atmosphere of fun, fun, fun. What good is curiosity if we don't know what to do next, how to satisfy it? We can create the environment necessary to the discipline, power, joy, and work of critical thinking only by modeling it before and with our students. They must see our minds at work. Our minds must stimulate theirs' with questions and yet further question, questions that probe information and experience, questions that call for reasons and evidence, questions that lead

students to examine interpretations and conclusions, pursuing their basis in fact and experience, questions that help students to discover their assumptions, questions that stimulate students to follow out the implications of their thought, to test their ideas, to take their ideas apart, to challenge their ideas, to take their ideas seriously. It is in the totality of this intellectually rigorous atmosphere that natural curiosity thrives.

***Question:*** *It is important for our students to be productive members of the work force. How can schools better prepare students to meet these challenges?*

***Paul:*** The fundamental characteristic of the world students now enter is ever accelerating change, a world in which information is multiplying even as it is swiftly becoming obsolete and out of date, a world in which ideas are continually restructured, retested, and rethought, where one cannot survive with simply one way of thinking, where one must continually adapt one's thinking to the thinking of others, where one must respect the need for accuracy and precision and meticulousness, a world in which job skills must continually be upgraded and perfected—even transformed. We have never had to face such a world before. Education has never before had to prepare students for such dynamic flux, unpredictability, and complexity, for such ferment, tumult, and disarray. We as educators are now on the firing line. Are we willing to fundamentally rethink our methods of teaching? Are we ready for the 21st Century? Are we willing to learn new concepts and ideas? Are we willing to learn a new sense of discipline as we teach it to our students? Are we willing to bring new rigor to our own thinking in order to help our students bring that same rigor to theirs? Are we willing, in short, to become critical thinkers so that we might be an example of what our students must internalize and become?

These are profound challenges to the profession. They call upon us to do what no previous generation of teachers was ever called upon to do. Those of us willing to pay the price will yet have to teach side by side with teachers unwilling to pay the price. This will make our job even more difficult, but not less exciting, not less important, not less rewarding. Critical thinking is the heart of well-conceived educational reform and restructuring because it is at the heart of the changes of the 21st Century. Let us hope that enough of us will have the fortitude and vision to grasp this reality and transform our lives and our schools accordingly.

***Question:*** *National standards will result in national accountability. What is your vision for the future?*

***Paul:*** Most of the national assessment we have done thus far is based on lower-order learning and thinking. It has focused on what might be called surface knowledge. It has rewarded the kind of thinking that lends itself to multiple choice machine-graded assessment. We now recognize that the assessment of the future must focus on higher—not lower—order thinking, that it must assess more reasoning than recall, that it must assess authentic performances, students engaged in bona fide intellectual work.

Our problem is in designing and implementing such assessment. In November of this last year, Gerald Nosich and I developed and presented, at the request of the U.S. Department of Education, a model for the national assessment of higher order thinking. At a follow-up meeting of critical thinking, problem-solving, communication, and testing scholars and practitioners, it was almost unanimously agreed that it is possible to assess higher-order thinking on a national scale. It was clear from the commitments of the Departments of Education, Labor, and Commerce that such an assessment is in the cards. [See figure 1, "Today's and Tomorrow's Schools".]

The fact is we must have standards and assessment strategies for higher order thinking for a number of reasons. First, assessment and accountability are here to stay. The public will not accept less. Second, what is not assessed is not, on the whole, taught. Third, what is mis-assessed is mistaught. Fourth, higher-order thinking, critical thinking abilities, are increasingly crucial to success in every domain of personal and professional life. Fifth, critical thinking research is making the cultivation and assessment of higher-order thinking do-able.

The road will not be easy, but if we take the knowledge, understanding, and insights we have gained about critical thinking over the last twelve years, there is much that we could do in assessment that we haven't yet done at the level of the individual classroom teacher, at the level of the school system, at the level of the state, and at the national level. Of course we want to do this in such a way as not to commit the "Harvard Fallacy", the mistaken notion that because graduates from Harvard are very successful, that the teaching at Harvard necessarily had something to do with it. It may

be that the best prepared and well-connected students coming out of high school are going to end up as the best who graduate from college, no matter what college they attend. We need to focus our assessment, in other words, on how much value has been added by an institution. We need to know where students stood at the beginning, to assess the instruction they received on their way from the beginning to the end. We need pre- and post-testing and assessment in order to see which schools, which institutions, which districts are really adding value, and significant value, to the quality of thinking and learning of their students.

Finally, we have to realize that we already have instruments available for assessing what might be called the fine-textured micro-skills of critical thinking. We already know how to design prompts that test students' ability to: identify a plausible statement of a writer's purpose; distinguish clearly between purposes, inferences, assumptions, and consequences; discuss reasonably the merits of different versions of a problem or question; decide the most reasonable statement of an author's point of view; recognize bias, narrowness, and contradictions in the point of view of an excerpt; distinguish evidence from conclusions based on that evidence; give evidence to back up their positions in an essay; recognize conclusions that go beyond the evidence; distinguish central from peripheral concepts; identify crucial implications of a passage; evaluate an author's inferences; draw reasonable inferences from positions stated; and so on.

With respect to intellectual standards, we are quite able to design prompts that require students to: recognize clarity in contrast to unclarity; distinguish accurate from inaccurate accounts; decide when a statement is relevant or irrelevant to a given point; identify inconsistent positions as well as consistent ones; discriminate deep, complete, and significant accounts from those that are superficial, fragmentary, and trivial; evaluate responses with respect to their fairness; distinguish well-evidenced accounts from those unsupported by reasons and evidence; tell good reasons from bad.

With respect to large scale essay assessment we know enough now about random sampling to be able to require extended reasoning and writing without having to pay for the individual assessment of millions of essays.

What remains is to put what we know into action: at the school and district

level to facilitate long-term teacher development around higher-order thinking, at the state and national level to provide for long-term assessment of district, state, and national performance. The project will take generations and perhaps in some sense will never end. After all, when will we have developed our thinking far enough, when will we have enough intellectual integrity, enough intellectual courage, enough intellectual per severance, enough intellectual skill and ability, enough fairmindedness, enough reasonability? One thing is painfully clear. We already have more than enough rote memorization and uninspired didactic teaching, more than enough passivity and indifference, cynicism and defeatism, complacency and ineptness. The ball is in our court. Let's take up the challenge together and make, with our students, a new and better world.

## Today's and Tomorrow's Schools

| *Schools of Today* | *Schools of Tomorrow* |
|---|---|
| • Focus on development of basic skills | • Focus on development of thinking skills |
| • Testing separate from teaching | • Assessment integral to teaching |
| • Students work as individuals | • Cooperative problem solving |
| • Hierarchically sequenced—basics before higher order | • Skills learned in context of real problems |
| • Supervision by administration | • Learner-centered, teacher-directed |
| • Elite students learn to think | • All students learn to think |

From "What Work Requires of Schools" A Scans Report for America 2000, The Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor, June 1991

# Conference Focal Sessions Program

All conference delegates and attendees have registered for their choices of the following sessions. See your confirmation sheet (in your packet) if you are unclear which focal sessions you have selected. Please attend the sessions you chose, as room assignments have been determined based on enrollment totals for each session. If any problems arise, visit the registration desk.

## Preconference Session Descriptions

**Saturday and Sunday (9:00 am - 4:00 pm)**

**Internalizing The Foundations of Critical Thinking... Richard Paul and Brian Barnes**

This session will lay the foundation for all conference sessions and is therefore highly recommended for new conference attendees. It will introduce you to some of the most basic understandings in critical thinking – namely, how to analyze thinking, how to assess it, and how to develop and foster intellectual virtues or dispositions.

One conceptual set we will focus on is the elements of reasoning, or parts of thinking. These elements or parts of reasoning are those essential dimensions of reasoning that are present whenever and wherever reasoning occurs, independent of whether we are reasoning well or poorly. Working together, these elements shape reasoning and provide a general logic to the use of thought. They are presupposed in every subject, discipline, and domain of human thought. A second conceptual set we will focus on is universal intellectual standards. One of the fundamentals of critical thinking is the ability to assess reasoning. To be skilled at assessment requires that we consistently take apart thinking and examine its parts with respect to standards of quality. We do this using criteria based on clarity, accuracy, precision, relevance, depth, breadth, logicalness, and significance. Critical thinkers recognize that whenever they are reasoning, they reason for some purpose (element of reasoning). Implicit goals are built into their thought processes. But their reasoning is improved when they are clear (intellectual standard) about that purpose or goal. Similarly, to reason well, they need to know that—consciously or unconsciously—they are using relevant (intellectual standard: relevance) information (element of reasoning) in their thinking. Furthermore, their reasoning improves if and when they make sure that the information they are using is accurate (intellectual standard: accuracy).

A third conceptual set in critical thinking is intellectual virtues or traits. Critical thinking does not entail merely intellectual skills. It is a way of orienting

## Preconference Session Descriptions Continued

oneself in the world. It is a way of approaching problems that differs significantly from that which is typical in human life. People may have critical thinking skills and abilities, and yet still be unable to enter viewpoints with which they disagree. They may have critical thinking abilities, and yet still be unable to analyze the beliefs that guide their behavior. They may have critical thinking abilities, and yet be unable to distinguish between what they know and what they don't know, to persevere through difficult problems and issues, to think fairmindedly, and to stand alone against the crowd. Thus, in developing as a thinker and fostering critical thinking abilities in others, it is important to develop intellectual virtues— the virtues of fairmindedness, intellectual humility, intellectual perseverance, intellectual courage, intellectual empathy, intellectual autonomy, intellectual integrity, and confidence in reason.

### Using the Oral Examination to Foster Internalization of Essential Concepts… Linda Elder and Rush Cosgrove

A common objection to teaching critical thinking concepts in a class not focused exclusively on critical thinking is this: "there isn't time to teach these concepts." Another is "I shouldn't have to teach these concepts and take time away from my content." It is true that when we introduce critical thinking, we are introducing new "content." But if we want students to think critically within our content, they need tools for doing this—the explicit tools of critical thinking. With these in place, we (and more importantly, they) can then use the language of critical thinking as we think through the "content" of the course. The oral examination is a powerful (and efficient) way to help students begin to internalize foundational concepts in the first few weeks of class—critical thinking concepts and indeed all powerful concepts. Contrary to images the term "oral exam" might conjure up, students typically enjoy the process.

In this session we will focus on the structure of the oral examination, an instructional process Paul and Elder have used for many years with their students. One key assumption behind the oral exam is that if students are to deeply internalize foundational ideas within the content, they should begin articulating their understanding of these ideas early in a course, and they should continue to work these ideas into their thinking throughout the course (and beyond). Further, through such an understanding, students are better able to integrate ideas and to springboard from foundational ideas to secondary ones as they move through their coursework. Another assumption behind the oral exam is that when students have an explicit understanding of the foundations of critical

## Preconference Session Descriptions Continued

thinking, they will potentially reason better within any field of study. We will begin by focusing on the primary concepts in critical thinking. Participants will learn and teach these concepts to each other in preparation for the classroom "oral examination," which we will simulate to some degree. We will then take the same oral exam approach, focusing on the primary concepts in one of your courses.

With both sets of foundational concepts in place, the language of critical thinking and the language of your content interact with each other and come alive in the minds of students. Participants will work together in teaching ideas to one another and orally "assessing" one another's understandings (with some guidance from the "instructors" or session facilitators). The process will be intellectually challenging, lively, and engaging.

### Helping Students Improve Their Writing Through the Tools of Critical Thinking… Gerald Nosich

Skilled writing presupposes skilled reflection while writing. Unlike the impressionistic mind, the reflective mind seeks meaning, monitors what it writes, and draws a clear distinction between its thinking and the thinking of its audience. The reflective mind, being purposeful, adjusts writing to specific goals. Being integrated, it interrelates ideas it is writing about with ideas it already commands. Being critical, it assesses what it writes for clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness. Being open to new ways of thinking, it values new ideas and learns from what it writes. It engages in research whenever it is needed, and it reflects on the quality and interpretation of that research. The reflective mind improves its thinking by thinking (reflectively) about it. Likewise, it improves its writing by thinking (reflectively) about writing. It moves back and forth between writing and thinking about how it is writing. It moves forward a bit, and then loops back upon itself to check on its own operations. It rises above itself and exercises oversight. This applies to the reflective mind while writing—or while reading, listening, or making decisions. This session focuses on bringing the tools of critical thinking to the writing process, and offers suggestions for fostering substantive writing in instruction.

# Conference Focal Session Descriptions

## Day One: Monday (10:45 am - 4:00 pm)

### Placing a Substantive Conception of Critical Thinking at the Heart of Teaching and Learning… Rush Cosgrove and Brian Barnes

Bringing critical thinking into instruction entails understanding the concepts and principles within critical thinking, then applying those concepts throughout the curriculum. It means developing powerful strategies that emerge when we begin to understand critical thinking. In this session we will focus on strategies for engaging the intellect at potentially all levels of instruction. These strategies are powerful and useful, because each is a way to get students actively engaged in thinking about what they are trying to learn. Each represents a shift of responsibility for learning from the teacher to the student. These strategies suggest ways to get your students to do the hard work of learning.

### Teaching Students to Think Within a Field Or Discipline… Gerald Nosich

A primary goal of instruction should be to help students internalize the most basic concepts in the subject and learn to think through questions in everyday life using those concepts. Critical thinking in biology is biological thinking. Critical thinking in anatomy is anatomical thinking. Critical thinking in literature is thinking the way a knowledgeable, sensitive, reasonable reader thinks about literature. A discipline is more than a body of information. It is a distinctive way (or set of ways) of looking at the world and thinking through a set of questions about it. It is systematic and has a logic of its own. In this session, participants will think through the logic of a discipline of their choosing. They will also focus on teaching the logic of their discipline so that students internalize the subject's inherent way of thinking as a life-long acquisition.

### For Administrators: Understanding the Long-Term Nature of Professional Development in Critical Thinking… Linda Elder

Critical thinking, deeply understood, provides a rich set of concepts that enable us to think our way through any subject or discipline as well as through any problem or issue. With a substantive concept of critical thinking clearly in mind, we begin to see the pressing need for a staff development program that fosters critical thinking within and across the curriculum. As we come to understand a substantive concept of critical thinking, we are able to follow out its implications in designing a professional development program. By means of it, we begin to see important implications for every part of the institution—redesigning policies; providing administrative support for critical thinking; rethinking the mission; coordinating and providing faculty workshops in critical thinking;

## Conference Focal Sessions Continued

redefining faculty as learners as well as teachers; assessing students, faculty, and the institution as a whole in terms of critical thinking abilities and traits. We realize that robust critical thinking should be the guiding force for all of our educational efforts. This session introduces the foundations of critical thinking, relates those foundations to instruction, and presents a professional development model that can provide the vehicle for deep change across the institution. We will utilize Dr. Elder's article on professional development, which has been published in TIMES HIGHER EDUCATION.

**Advanced Session: Dialogue with Richard Paul – Objections and Replies… Richard Paul**

In this session, Richard Paul will lead a discussion that interweaves basic problems and issues in making sense of critical thinking theory and practice. He will deal with typical objections to critical thinking that might dovetail with any of the following:

- the problem of concept
- the problem of definition
- the problem of absolutism
- the problem of relativism
- the problem of divergent forms and manifestations of critical thinking
- the problem of content
- the problem of human nature
- the problem of divergent cultures and societies
- the problem of history
- the problem of self-critique
- the problem of egocentrism
- the problem of sociocentrism
- the problem of vested interest
- the problem of prejudice
- the problem of power
- the problem of rationality

This session will be largely guided by participant questions and is designed for returned conference attendees who have internalized the foundations of critical thinking.

# Conference Focal Sessions Continued

## Day Two: Tuesday Morning (9:00 am - 11:45 am)

### Teaching Students Fundamental and Powerful Concepts… Gerald Nosich

Concepts are ideas we use in thinking. They enable us to group things in our experience in different categories, classes, or divisions. They are the bases for the labels we give things in our minds. They represent the mental map (and meanings) we construct of the world, the map that tells us the way the world is. Through our concepts we define situations, events, relationships, and all other objects of our experience. All our decisions depend on how we conceptualize things. All subjects or disciplines are defined by their foundational concepts. "Cell" versus "mitochondria" is an example. A cell is a much more fundamental and powerful concept in biology than is a mitochondrion. Students who achieve a deep understanding of the concept of a cell will be able to think though, and gain insight into, a very large number of topics in biology. It will give them a powerful entrance into thinking biologically. Not only that, but a good grasp of the concept "cell" will enable students to think critically about a range of topics they will encounter outside the course. By contrast, a student who achieves a good grasp of the concept "mitochondria" will not, thereby, gain insight into nearly as large a range of other biological topics.

When students master foundational concepts at a deep level, they are able to use them to understand and function better within the world. Can you identify the fundamental concepts in your discipline? Can you explain their role in thinking within your discipline? How can you help students take command of these concepts? These are some of the questions to be explored in this session.

### Critical Thinking and the Common Core State Standards … Brian Barnes

The majority of states in the U.S. have adopted the Common Core Standards. Many, if not most, of these standards presuppose critical thinking. In this session we will begin to explore some of the important relationships between the common core standards and the concepts and principles of critical thinking. Using understandings of the elements of reasoning, intellectual standards, and intellectual traits (introduced earlier in the conference), participants will draw links between these essential understandings in critical thinking and the common core standards. Participants will continue to develop an integrated understanding of critical thinking that, when deeply internalized, will increase student achievement in the common core standards.

## Conference Focal Sessions Continued

### Helping Students Come to Terms With Their Own Self-Defeating Attitudes and Behavior… Linda Elder and Rush Cosgrove

Students do not come to us as blank slates. They come to us with an established, but still developing, worldview. This worldview has unfortunately emerged from a largely impoverished world culture that tends not to highlight problems in thinking, nor to offer substantive approaches to those problems. Most students have no sense that within each of us are self-defeating attitudes and behavior. Most students have little understanding of how these attitudes might affect their learning, and hence their long-term futures. It is therefore important for students to clearly understand these tendencies and how they can—and do—impede learning. It is important for students to see that they, like all people, are often intellectually arrogant, and that this tendency gets in the way of their learning. It is important for students to see that they, like all people, often fail to persevere through difficulties when learning complex ideas—and that this tendency also gets in the way of their learning. It is important, in short, for students to understand the general problems in thinking experienced by all humans that lead to self-defeating attitudes and behavior. Students can then use these understandings to uncover their own particular, dysfunctional patterns of thought. This session will focus on these general patterns of pathological thought and offer conceptual tools for student self-intervention.

### Dialogue with Richard Paul on the Importance of Intellectual Virtues in Teaching and Learning… Richard Paul

Critical thinking is not just a set of intellectual skills. It is a way of orienting oneself in the world, and a way of approaching problems that differs significantly from that which is typical in human life. People may have critical thinking skills and abilities, and yet still be unable to enter viewpoints with which they disagree. They may have critical thinking abilities, and yet still be unable to analyze the beliefs that guide their behavior. They may have critical thinking abilities, and yet be unable to distinguish between what they know and what they don't know, to persevere through difficult problems and issues, to think fairmindedly, and to stand alone against the crowd. This session focuses on designing instruction that transforms the mind—instruction that fosters the development of fairmindedness, intellectual humility, intellectual perseverance, intellectual courage, intellectual empathy, intellectual autonomy, intellectual integrity, and confidence in reason. Join the dialogue on intellectual virtues with Richard Paul, Founder of the Center and Foundation for Critical Thinking. This session will largely be guided by participant questions in connection with activities for internalizing the ideas discussed.

# Conference Focal Sessions Continued

**Day Two: Tuesday Afternoon (1:15 pm - 4:00pm)**

### Using the Tools of Critical Thinking to Teach Students How to Study and Learn… Gerald Nosich

To study well and learn any subject is to learn how to think with discipline in that subject. It is to learn to think within its logic, to:

- raise vital questions and problems within it, formulating them clearly and precisely.
- gather and assess information, using ideas to interpret that information insightfully.
- come to well-reasoned conclusions and solutions, testing them against relevant criteria and standards.
- adopt the point of view of the discipline, recognizing and assessing—as need be—its assumptions, implications, and practical consequences.
- communicate effectively with others using the language of the discipline and that of educated public discourse.
- relate what one is learning in the subject to other subjects, and to what is significant to human life.

To become a skilled learner is to become a self-directed, self-disciplined, self-monitored, and self-corrective thinker who has given assent to rigorous standards of thought and mindful command of their use. Skilled learning of a discipline requires that one respect the power of it, as well as its—and one's own—historical and human limitations. This session will offer strategies for helping students begin to take learning seriously.

This session focuses on a number of instructional ideas based on the notion that substantive teaching and learning can occur only when students take ownership of the most basic principles and concepts within a subject. These strategies are rooted in a vision of instruction implied by critical thinking, and in an analysis of the weaknesses typically found in most traditional didactic lecture/quiz/test formats of instruction. This session focuses on some basic instructional strategies that foster the development of student thinking, and strategies that require students to think actively within the concepts and principles of the subject.

## Conference Focal Sessions Continued

### Emancipating the Mind Through Critical Thinking … Linda Elder

People want to be free. We want to be free to think and do as we wish. But enlightened people recognize that to free the mind is to discipline the mind, and to discipline the mind we must first comprehend it. To comprehend the mind is to understand, among other things, the intrinsic barriers to emancipatory thought. Consider, for instance, this "How-To List for Dysfunctional Living," taken from *30 Days to Better Thinking and Better Living Through Critical Thinking* by Linda Elder and Richard Paul. (As you read it, ask yourself: to what extent are these, and related habits of thinking and living, barriers to emancipating your mind?)

1. **Surround yourself with people who think like you.** Then no one will criticize you.
2. **Don't question your relationships.** You then can avoid dealing with problems within them.
3. **If critiqued by a friend or lover, look sad and dejected** and say, "I thought you were my friend!" or "I thought you loved me!"
4. **When you do something unreasonable, always be ready with an excuse.** Then you won't have to take responsibility. If you can't think of an excuse, look sorry and say, "I can't help how I am!"
5. **Focus on the negative side of life.** Then you can make yourself miserable and blame it on others.
6. **Blame others for your mistakes.** Then you won't have to feel responsible for your mistakes nor will you have to do anything about them.
7. **Verbally attack those who criticize you.** Then you don't have to bother listening to what they say.
8. **Go along with the groups you are in.** Then you won't have to figure out anything for yourself.
9. **Act out when you don't get what you want.** If questioned, look indignant and say, "I'm just an emotional person. At least I don't keep my feelings bottled up!"
10. **Focus on getting what you want.** If questioned, say, "If I don't look out for number one, who will?"

All these ways of thinking stand as barriers to emancipating the mind. All come, ultimately, from native egocentric and sociocentric tendencies. All people engage in these sorts of dysfunctional, imprisoning habits of thought. In this session we will consider these tendencies to free the mind and reach our potential.

# Conference Focal Sessions Continued

### How to Prove You are Fostering Critical Thinking in Your Instruction: Designing Your Own Research Project… Rush Cosgrove

Participants will explore the concept of qualitative educational research, and will design an empirical study given their own unique educational contexts, objectives, and perspectives. This will include a focused consideration of specific methodological tools (e.g. interviews, video recordings of classroom instruction and student interaction, and analysis of student work) and research strategies (e.g. "supportive research stance" and "triangulation of data collection methods") essential to effectively documenting the teaching and learning of critical thinking. This session will launch the twin empirical investigations, currently titled the "One Year" and "One Semester" research projects. In these projects, Foundation for Critical Thinking scholars will support the efforts of teachers and researchers (at all levels and across the curriculum) in pursuing—again, from a research perspective—potential answers to the question "what can an enthusiastic and disciplined teacher do (in one year or semester) to improve students' critical thinking abilities and dispositions in contextually relevant ways?"

### From the Trenches: Classroom Strategies for Equipping Students to Think Critically… Laura Ramey and Gary Meegan

Each day, students should use simple but powerful tools to challenge their thinking and deepen their understandings. In addition, the Common Core State Standards rely on critical thinking approaches to literacy. This session will offer concrete strategies and activities that can be used right away in the classroom. Included will be ways to approach reading, questioning, discussion, and using the essential questions of the course. The Elements of Thought, Intellectual Standards, and Intellectual Traits will be the touchstones for this session. Rubrics and PowerPoints will be provided so that participants can begin using the strategies on the first day of class. This session focuses on how two high school teachers who have been using the Paulian Approach to critical thinking bring it into the classroom on a typical day. While the workshop focuses on high school, the strategies can be modified for any grade level.

## Conference Focal Sessions Continued

### Day Four: Thursday Morning (9:00 am - 11:30 am)

#### Fostering Critical Thinking Through Close Reading… Rush Cosgrove

Educated persons are skilled at, and routinely engage in, close reading. They do not read blindly, but purposely. They have an agenda, goal, or objective. Their purpose, together with the nature of what they are reading, determines how they read. They read differently in different situations for different purposes. Of course, reading has a nearly universal purpose: to figure out what an author has to say on a given subject.

When we read, we translate words into meanings. The author has previously translated ideas and experiences into words. We must take those same words and re-translate them into the author's original meaning, using our own ideas and experiences as aids. Accurately translating words into intended meanings is an analytic, evaluative, and creative set of acts. Unfortunately, few students are skilled at this translation. Few are able to accurately mirror the meaning the author intended. They project their own meanings into a text. They unintentionally distort or violate the original meaning of the authors they read.

Reading, then, is a form of intellectual work. And intellectual work requires willingness to persevere through difficulties. But perhaps even more important, intellectual work requires understanding what such work entails. In this session you will be introduced to five levels of close reading and, will work through one or two of them closely (as "students").

## Conference Focal Sessions Continued

### Designing Instruction So That Students Learn to Think Things Through… Gerald Nosich

Students learn content within any subject only to the extent that they learn to think through the subject. But they can't just use their own thinking. They have to use skilled, disciplined, reasonable, rational thinking —in other words, critical thinking. To do this, they need consistent practice over time in taking important ideas and following out their implications, in integrating ideas, and in questioning them when it makes sense. They need consistent practice in applying intellectual standards to thought as they reason through problems, and issues, within academic disciplines. They need to start with essential intellectual standards, and to apply those over and over again to problems and issues as they think through content. In short, they can't just learn the theory of critical thinking in an abstract way. Rather, they need to learn the theory in relation to practice in applying it (that is, applying it to learning and ultimately to every domain of human life). This session focuses on taking the foundational theory of critical thinking and helping students internalize it through practice in thinking through content.

### Reaching for Self-Command and Self-Actualization Through Critical Thinking… Linda Elder

Most faculty tend to think of critical thinking in connection with their academic disciplines or professions. But if we are to create fairminded critical societies, our focus on critical thinking should—perhaps most importantly—lead to self-discipline and self-command in life generally. When we take our thinking seriously in all domains of our lives, over many years of committed practice, we should experience what might be termed self-actualization. In this session we will first consider the terms "self-command," "self-actualization," and "enlightenment" through a critical thinking lens. We will briefly consider the intrinsic barriers to thought that stand in the way of our achieving self-actualization. We will consider the tools we can use, from our understanding of critical thinking, to intervene in our thought when it is neurotic or otherwise dysfunctional. We will consider the stages of critical thinking and how they might be used as conceptual tools for self-development. We will draw on the thinking and work of Albert Ellis (Rational Emotive Behavior Therapy) and illuminate some of their important connections with critical thinking. We will come away with deep, powerful ideas that can transform our thought and hence our lives... as long we are committed to applying these ideas systematically to how we live.

## Conference Focal Sessions Continued

### Dialogue With Richard Paul on the Possibility of Cultivating Fairminded Critical Societies… Richard Paul and Brian Barnes

> *The critical habit of thought, if usual in society, will pervade all its mores, because it is a way of taking up the problems of life. Men educated in it can not be stampeded by stump orators ... They are slow to believe. They can hold things as possible or probable in all degrees, without certainty and without pain. They can wait for evidence and weigh evidence, uninfluenced by the emphasis or confidence with which assertions are made on one side or the other. They can resist appeals to their dearest prejudices and all kinds of cajolery. Education in the critical faculty is the only education of which it can be truly said that it makes good citizens.*
>
> – William Graham Sumner, Folkways, 1906

It is becoming increasingly clear that the survival and well-being of humans largely depends on our ability to work together successfully and productively, to reach out to one another, and to help one another. Yet, problems of nationalism and ethnocentrism are pervasive across the world. People are raised to see their country, or their group, as better than other countries or groups. They tend to favor the groups to which they belong. This is a natural tendency of the human mind. And it is a tendency fostered within most, if not all, cultures across the world.

If we are to create a world that advances justice for the vast majority of people across the globe, we must become citizens of the world. We must denounce nationalism and ethnocentrism. We must think within a global, rather than a national, view. We must take a long-term perspective. We must begin to relegate the status of any given country, including our own, to that of one of many: no more worthy, no more needy, no more deserving of the world's resources than any other on the planet. We must see the lives of people in other countries as no less precious than the lives of people in our own country. We must oppose the pursuit of narrow selfish or group interests. Integrity and justice must become more important to us than national advantage and power. This session will focus on these essential ingredients of a critical society and briefly explore the possibilities for the creation of such a society in the future. The session content will be largely guided by participant questions.

## Bertrand Russell Conversation

The Russell Scholars presentation is an important part of the conference experience. Please join us for this lively discussion, which will follow a question/answer format.

**Lecture by Russell Scholar Dr. Elizabeth Loftus**

*Illusions of Memory*

Tuesday, July 23 5:00 p.m. - 6:00 pm

**Conversation with Dr. Loftus**

Wednesday 10:55- 12:25

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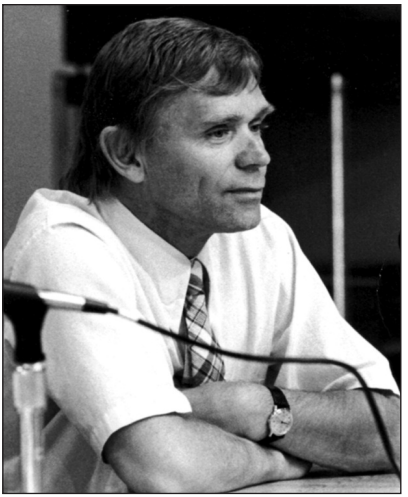
*Both to be held in the Empire Ballroom*

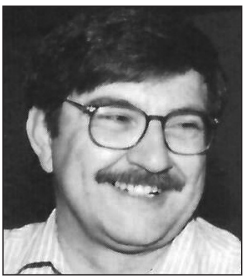
## Bertrand Russell Series Format

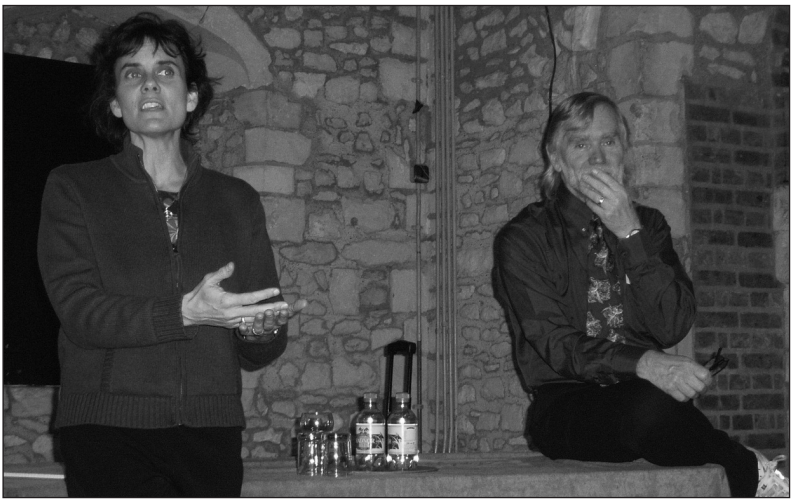
To draw out the critical thinking implicit in the thinking of the Russell Scholars, the following unique design for the presentations will be used:

A fellow of the Foundation for Critical Thinking will lead a Socratic dialogue with the Scholar (45 minutes). This will be followed by 20 minutes of questions to the Scholar by conference attendees and delegates. Then there will be another 20-30 minutes of Socratic dialogue between moderator and Scholar.

The presentation will be followed by a book signing. Books by Dr. Loftus will be available for sale at that time. These books will also be available for sale throughout the conference. The number of books is limited.







# Concurrent Sessions Program

**Wednesday, July 24, 2013**

The concurrent sessions are presented by faculty who are attempting to foster critical thinking in teaching and learning. Choose one concurrent session to attend for each time slot.

Note that we have included in the schedule below the Bertrand Russell Lectures, to which all are invited.

**Schedule Overview:**

| | | | |
|---|---|---|---|
| 8:30 am | – | 9:30 am | Concurrent Sessions I |
| 9:40 am | – | 10:40 am | Concurrent Sessions II |
| 10:40 am | – | 10:55 am | Break – Horizon Room |
| 10:55 am | – | 12:25 pm | Elizabeth Loftus, Russell Scholar |
| 12:25 pm | – | 1:45 pm | Lunch |
| 1:45 pm | – | 2:45 pm | Concurrent Sessions III |
| 2:45 pm | – | 3:00 pm | Break – Horizon Room |
| 3:00 pm | – | 4:00 pm | Concurrent Sessions IV |
| 7:00 pm | – | 8:30 pm | Round Table Discussions |

## Concurrent Sessions I

**(8:30 am – 9:30 am, Wednesday)**

### Critical Thinking in the College Classroom

**Jeffery Swain**
The Director of Center of Academic Support and Retention
Faculty: English and Criminal Law
Florida Memorial University

**Augustus Henry**
Faculty
Critical Thinking, Pre-College Reading and Education Psychology
Florida Memorial University

**Derek Ford**
Faculty
Critical Thinking, Pre-College Reading and Remedial Reading
Florida Memorial University

*Room: Claremont*

This presentation provides three demonstrations of innovative ways in which critical thinking can be implemented in the college classroom. The first

uses the eight elements of thought in an English Literature course to generate discussion of poetry. The second shows that students can use the elements of thought to explain and monitor their own learning experience. Finally, the presentation demonstrates assignments that reinforce usage of the intellectual traits, the intellectual standards, and the elements of thought.

### Long-Term Professional Development in Critical Thinking: Lessons from Ten Years of Educational Reform

**Paul Bankes, PhD**
Executive Director of Elementary Education
Thompson School District

*Room: Napa*

Educational research establishes without a doubt that for professional development to impact teaching practices and student learning in a substantive, sustainable manner, teacher learning experiences must be continuous and deliberate. Implementing critical thinking into K-12 classrooms is no exception. This session will explore key components of professional development planning and delivery that lead to effective implementation of critical thinking in a comprehensive manner—critical thinking theory, child development theory, and pedagogical implications of both—leading to a long-term approach to bringing critical thinking across the curriculum. This approach has been successful at schools within the Thompson School District in Loveland, Colorado.

### Using the Paul-Elder Framework as a Basis for GenEd Courses in Public Health

**Pete Walton**
Associate Dean for Academic Affairs
School of Public Health and Information Sciences,
University of Louisville

*Room: Sonoma*

This session explores how the General Education "Introduction to Public Health" course is designed to take full advantage of the Paul-Elder model for critical thinking. The course also makes extensive use of teams while working to combine them with critical thinking. The reason for the two foci is that critical thinking and working with others in teams are not only the top two attributes employers look for in employees, but they are also how public health work is— and should be—done. The session covers how critical thinking and teamwork: 1) form the basis of the syllabus, course, and class design; 2) inform activities, deliverables and student responsibilities; 3) are integral to student grading processes. Various examples of active learning using the Paul-Elder approach are demonstrated in this session.

## Critical Thinking for Mentors: Directing Conversations With the Elements of Thought to Model Healthy Relationships

**Justin Garcia**
College of Liberal Arts and Sciences
Department Chair
Assistant Professor
DeVry University

*Room: Lanai 2*

Mentoring began in the fall of 2011 at a community school that serves those unable to return to their school of residence upon release from a juvenile center. Both mentors adopted the model of Critical Thinking proposed by Richard Paul and Linda Elder to stimulate meaningful conversations with mentees. The intent of the mentoring program is to model healthy relationships through conversation, as well as metaphorically in art. Using the elements of thought and intellectual standards to direct the conversation, mentors encouraged mentees to recognize the parts of their thinking, such as the implications of their thinking, the assumptions inherent in their thinking, and the concepts used in conversations with mentors. To illustrate healthy relationships, metaphorically, mentors and mentees collaborated on a mural that was completed one week prior to the 2011-2012 school year. It is now displayed within the school.

## Critical Thinking in the Primary Classroom

**Carmen Polka**
Kindergarten Teacher
Thompson School District

*Room: Lanai 3*

Dynamic is the primary classroom that embraces critical thinking at the heart of the teaching and learning. The foundation of effective classroom instruction and student learning is the understanding, application, and integration of the Paul and Elder theory. Embedded within this theory and approach are thinking routines and systemic instructional strategies. Careful consideration given to the relationship of these thinking routines and systemic structures will enable one to foster a conceptually-based, inquiry-driven, critical-thinking-rich classroom all while embracing the young child. These strategies are also effective in most classroom settings. This session will focus on bringing clarity to routines and structures that foster critical thinking, and to those that do not. Furthermore, using specific instructional strategies sets the stage for students—regardless of their age—to engage in content in a critical way.

## Concurrent Sessions II

**(9:40 am – 10:40 am, Wednesday)**

### Learning to Think Within a Discipline...by Doing It

**Christopher Petrie**
Associate Professor
Director of Residency in Diagnostic Imaging
Parker University

*Room: Sonoma*

One of the most challenging aspects of learning a discipline, and frequently a skill that receives little or no attention in the curriculum, is the skill of thinking within that discipline. For example, students can learn all there is to know about the human body and human disease, but they are little more than medical encyclopedias until they learn to think like a doctor or nurse. Unfortunately, many courses and curriculums emphasize content over concepts, and consequently learning to think within the discipline is left for the students to figure out on their own. In this session, we will explore faculty's experiences with immersive learning activities that are being used to help students begin thinking within a discipline. Participants will leave the session with ideas for creating immersive learning experiences that not only help students make sense of the content, but also help them to begin thinking within the discipline.

### In Vivo: Facilitating Critical Thinking in Medical Education/Training Using a Case-Based Modality

**Gilbert Villela, MD**
Associate Clinical Professor
University of California, San Francisco
**David Elkin, MD**
Clinical Professor
University of California, San Francisco

*Room: Lanai 2*

How do we improve diagnosis, arrive at accurate clinical interpretations, and develop optimal interventions with the hope of reducing medical misdiagnosis and poor treatment outcomes? We introduce a critical thinking (CT) group process we have used with medical students and resident trainees by implementing CT elements and standards in a non-didactic, group discussion format using a stimulating clinical case as a modality. Group facilitators utilize CT techniques (i.e. Socratic questioning, paraphrasing, paradoxical examples, highlighting

assumptions or biases, etc.) in fostering participants to discuss among each other and reflect on their thinking in the moment (in vivo). One group process objective is to nurture CT dispositions such as persistence, humility, courage, honesty, fairmindedness, and openness to dissonance. In our session, we will provide a stimulating ethical/clinical case to present to the group, allowing the participants to experience the process of thinking about a case using our approach. We will consider briefly the obstacles in thinking critically in medicine.

### Mentoring: Using the Paul/Elder Critical Thinking Model to Assist Others in Fostering the Pursuit of an Examined Life

**Paula Fraser**
University of Washington

*Room: Monterey*

The presenter will share her experiences, strategies, and materials that she has used in developing mentor relationships with individuals and small groups so they are better able to focus on improving the quality of their thinking. Through fostering a plan for leading the examined life, they can hopefully better achieve their goals and ambitions, make better decisions, and take charge of what they do in all parts of their lives—personally and professionally—leading them to realize the potential to live a fuller, more happy and secure life. In addition to the *Miniature Guide to Critical Thinking Concepts and Tools*, the presenter will use excerpts from the Paul/Elder book, *25 Days to Better Thinking (Now 30 Days)*.

### Using Intellectual Virtues to Frame the K-16 Common Core

**Heather Barrack**
Curriculum Specialist, English
Bergen Community College

*Room: Napa*

This presentation will focus on specific high schools and college lessons that foster intellectual virtues. The Common Core Framework identifies Habits of Mind, from Costa and Kallick, as the connection for metacognition related to assignments. I will argue that the Paul/Elder model is more powerful in its simplicity and completeness for transfer from course to course, and for ownership by students and faculty. I intend to highlight three to four of the virtues (intellectual empathy, intellectual autonomy, fairmindedness, and intellectual perseverance) in designing classroom discussions and written assignments.

## Critical Thinking and Ethical and Social Issues: Critical Thinking, Ethics, and the Rights of Animals

**Robert Schlim,** facilitator
*Room: Claremont*

Critical thinking is not just for the classroom. It is crucial to the ethical conduct of life itself. To stimulate—even to provoke—some of that thinking, we have included this session that emphasizes the importance of thinking critically about ethical, social, and political issues. The issue that is the focus of this session is presented in such a way as to stimulate the critical thinking of the participants. In presenting the issue we strove to be "objective." However, we have no pretense to being "neutral."

This session will focus on the views of the participants and will be led by a facilitator. Debate is invited as long as it demonstrates fairminded and empathic critical thinking. Participants will be divided into small groups. Each group will briefly report its conclusions to the group as a whole toward the end of the session.

Caveat: though participants are free to question or argue against any of the premises or assumptions in the formulation of the issue, such discussion should not be so drawn out as to prevent discussion of the issue itself, as presented. We hasten to add—to those who believe that "neutrality" is essential in such discussions—that any issue put in such a way that challenges the dominant view in a society will appear to those holding that view to be biased and unfair. We therefore recognize that others might put the issues differently to stimulate our thinking in different directions.

The issue at the focus of this session is as follows:

*Critical Thinking, Ethics, and the Rights of Animals*

*Some people argue that since animals have a lower form of intelligence, they should not have any rights, and that humans are justified in treating them in any way they wish. Most people, however, argue that humans have a responsibility to treat animals "humanely."*

*Roughly, humane treatment of animals is taken to imply that animals should not be subject to unnecessary suffering. The argument then focuses on what constitutes "unnecessary suffering." In the past few years, in Great Britain for example, "blood sports" (such as fox hunting) have been made illegal, the argument being that the pleasure of the hunter in trapping the animal is outweighed by the unnecessary suffering of the animal (who is torn apart by the dogs used in the hunt). In Spain, bull fights are still legal, even though there is no chance for the bull to win, and the bull is subjected to extreme pain due to repeated jabbing with sharp instruments (the purpose being to goad the bull*

*into a rage so he will attack the matador). Trappers still use traps that cause extended suffering (24 hours or more) by the animal whose limbs are caught in the trap. Slaughterhouses often use methods that entail avoidable suffering on the part of the animals slaughtered. Millions of animals are used in experimentation across the world each year, often entailing great suffering, in many cases for purposes that can be addressed in more efficient ways (such as through volunteer human experimentation, or the use of computer simulation models focused on human biology). Should we conclude, then, that humans routinely violate their responsibility to treat animals humanely? Or can some other argument be advanced that puts the human treatment of animals (as in the cases above) in a light that exonerates our species?*

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Break - Coffee/Tea 10:40-10:55 am (Horizon room)

**Bertrand Russell Presentation: Dr. Elizabeth Loftus (10:55 am – 12:25 pm)**
*Empire Ballroom*

Break For Lunch, on your own… (12:25 pm – 1:45 pm)

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## Concurrent Sessions III

**(1:45 pm – 2:45 pm, Wednesday)**

### Using Assessment Tools to Promote Faculty Members' Understanding and Use of Critical Thinking Teaching Strategies

**Bill Watson**
Director of the Center for Teaching and Learning and
QEP Director
Parker University

**Christopher Petrie**
Associate Professor and
Director of Residency in Diagnostic Imaging
Parker University

*Room: Sonoma*

The Paul-Elder Model provides a valuable framework for promoting critical thinking, and many institutions have adopted this model in support of institution-wide initiatives designed to improve students' reasoning skills. To determine the impact our efforts are having on improving students' thinking, we must use

assessment methods that are appropriately aligned with the Intellectual Standards and the Elements of Thought. In our session, we will share the assessment strategies our institution uses and demonstrate how our approach not only gathers information on overall student performance, but also provides a valuable framework for reinforcing the strategies and methods faculty members should employ to promote students' development of critical thinking skills. Participants will leave the session with ideas on how they can create or revise their institutional assessments, both to assess students' critical thinking skills and to improve faculty members' use of effective teaching and learning methods.

### Developing Critical Thinking Within a Master of Science in Leadership Program

**Daryl Watkins**
Assistant Professor, College of Business
Department Chair, Graduate Studies, Leadership and Business
Embry-Riddle Aeronautical University

*Room: Napa*

How do leaders develop themselves into better leaders, ready to take on the complexities of today's world? In our Master of Science in Leadership program, we believe that better leadership starts with better thinking. Our students are asked to begin their studies by learning about the elements and standards of critical thinking as well as the intellectual virtues and barriers to thought. During their degree program, we continue to revisit these concepts with our students, as well as asking them to take the critical thinking basic concepts assessment four different times throughout. In this workshop, we describe our approach and share the issues we have experienced along the way.

### Creating & Assessing Fairminded Critical Thinkers; Improving Our Thinking to Save the World

**Juliet Mohnkern**
Director of Public Policy and Curriculum Innovation
Caesar Chavez Public Charter Schools for Public Policy
**Krista Ferraro**
Deputy Director of Public Policy & Curriculum Innovation
Cesar Chavez Public Charter Schools for Public Policy

*Room: Lanai 3*

High quality thinking is not automatic or natural. All humans are inclined to see the world through their own lens, creating a narrow and sometimes biased

understanding of it. Our understanding of the world becomes the platform for our actions in it; so to improve our world it is necessary to improve our thinking. Fairminded critical thinkers are able to see the perspectives of others and work consciously to use thinking to make the world a better place. Our democratic system relies on the thinking of the citizenry as the foundation for government action. How we understand the key democratic principles of freedom, justice, and equality as well as how we work to achieve them is a function of our thinking. In order for our nation to move closer to realizing those ideals, it is essential for education to systematically cultivate fairminded thinking and assess the extent to which we are doing so. In this session, participants will review a secondary school curriculum that is explicitly designed to develop students as fairminded critical thinkers. Participants will assess how effectively the curriculum achieves its goal of improving students' thinking in order to make the world a better place. In addition, the presenters will share practical models and tools to assess students' critical thinking in grades 6-12. In teams, participants will practice using these tools to assess student thinking, and will develop plans to implement these ideas in their own field.

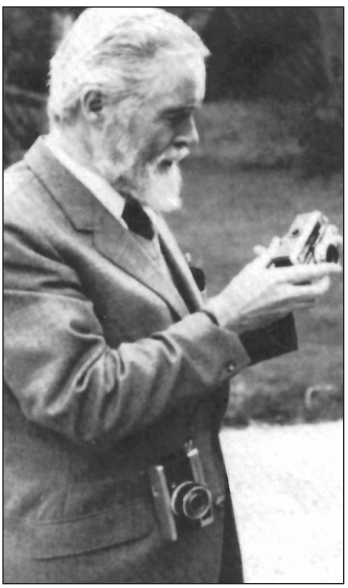
 

## Improving Student Critical Thinking Through Direct Instruction in Rhetorical Analysis

**Lauren McGuire**
Professor of English
Victor Valley Community College

*Room: Lanai 2*

Cultivating critical thinking, intellectual growth, and lifelong learning opportunities that provide students with the knowledge and skills necessary for success in life is a fundamental goal of all educational institutions. In an effort to encourage students' higher order thinking skills and abilities, educators are beginning to include critical thinking curriculum into a variety of academic disciplines. Instructional strategies that advance critical thinking pedagogy on a consistent basis could positively impact the range and quality of students' critical thinking skills. Further, purposeful implementation of the Thinker's Guides—based on Dr. Richard Paul and Dr. Linda Elder's model of critical thinking and Socratic questioning—could strengthen students' perceptions of critical thinking and of their own critical thinking abilities. Using Paul and Elder's Thinker's Guides, the elements of reasoning, and Socratic questioning, this session will focus primarily on designing instruction which integrates direct instruction in rhetorical analysis. Participants will work in small groups and will be offered instructional methodologies that encourage analysis and evaluation of expository and argumentative discourse, and that develop students' critical thinking, reading, and writing skills.



## Better Living Through Better Thinking: The Impact of Incorporating the Paul-Elder Framework of Critical Thinking into a Campus-Community Partnership

**Edna Ross**
Professor of Psychology
Critical Thinking Specialist, i2a
University of Louisville

*Room: Claremont*

The purpose of this session is to examine how the University of Louisville's adoption and implementation of the Paul-Elder framework for critical thinking has had a major impact on a local community organization, Hotel Louisville. Hotel Louisville is owned and operated by Wayside Christian Mission, a homeless shelter, and is staffed by screened and vetted Wayside resident clients. The Paul-Elder framework was incorporated into the development of customized critical thinking tools for use in hotel/hospitality training, addiction recovery sessions, conflict resolution sessions, and other activities focused on helping all Wayside clients lead better lives through better thinking. This session will discuss the impact of the collaboration between UofL and Hotel Louisville from the perspective of UofL faculty and students, as well as Wayside staff and clients.

## Actualizing Critical Thinking Principles Through Second Language Instruction in Iran as a Non-Western Society

**Mohammad Bagher Bagheri**
English Department
Casual Lecturer
Vali-E-Asr University of Rafsanjan, Iran

*Room: Monterey*

Critical thinking is a western concept that, as its history points out, developed and flourished in the western world because the conditions were favorable. Developing critical thinking in non-western societies cannot be pursued unless the local exigencies are carefully considered. Fostering critical thinking in Iran as an Islamic country has its own obstacles and problems. Considering such limitations, the presenter tries to first discuss the main obstacles for developing and actualizing critical thinking skills in an Iranian context, then offers practical ideas and viable strategies for developing and actualizing critical thinking through Second Language Instruction.

Break- coffee/tea- 2:45-3:00 pm

## Concurrent Sessions IV

**(3:00 pm – 4:00 pm)**

### Critical Thinking in Teacher Education: Perceptions and Practices of Teacher Candidates and College Faculty

**Spencer Wagley**
Education Department
Sterling College

*Room: Sonoma*

Within teacher preparation programs, critical thinking is neither systematically fostered nor understood. Yet teaching reasoning skills should be a prime aim of education at all levels (Paul, 1990; Burbules & Berk, 1999), since internalizing and transferring knowledge, skills, and dispositions may be unintentional, accidental, or not done at all. A heightened awareness of critical thinking could lead to more intentional teaching of critical thinking.

Teaching and critical thinking should be linked together to provide students with more appropriate, beneficial educational experiences. The majority of research examines the critical thinking skills of students. Few studies focus on the understanding of critical thinking of educators. Research by Haas and Keely (1998) suggest that educators lack the necessary knowledge to enhance the critical thinking skills of their students. Critical thinking education should begin

with faculty members (Burroughs, 1999; Hobaugh, 2005). Therefore, the issues of critical thinking in teaching and in learning should be viewed together. It is not known whether the current critical thinking perceptions of faculty practices are modeled for teacher education candidates.

The purpose of this study was to examine critical thinking perceptions and practices held by teacher candidates and college faculty. Specifically, the study aimed to explore the knowledge, skills, and dispositions toward critical thinking that teacher education candidates and teacher education faculty possessed (or lacked). The methodology and primary conclusions of the study will be discussed and its implications explored.

## Assessing Critical Thinking using Scientific Reasoning Tests

**Joseph D'Silva**
Department of Biology
Norfolk State University

*Room: Napa*

This presentation discusses the merits of deploying tests to evaluate critical thinking among some science students. Critical Thinking is a component of the Quality Enhancement Plan (QEP) at Norfolk State University. The university employs a number of critical thinking tests to gauge student performance, including the Scientific Reasoning Test (SRT) designed to assess critical thinking in the physical and biological sciences. The SRT was administered (pre and post) to nursing students in two introductory courses: BIO 165 (Anatomy & Physiology - Part 1) and BIO 166 (Anatomy and Physiology - Part 2), and in an upper level course: BIO 320 (Pathophysiology). The elements of reasoning and the standards of critical thinking formed part of the instruction after the pre-test. While 62% of students in BIO 166 met the competency requirement (defined as a 70 or above on the SRT), the results suggest that continued exposure to instructional strategies and assessment items designed to enhance students' critical thinking increases student achievement. The results also suggest a need for continued research on student test-taking motivation, as lower level students often outperformed upper level students. The SRT is a low-stakes test for students, thus it does not affect their course grade, and research suggests that students may not put forth their best effort on low-stakes tests that assess higher-level thinking. Scientific reasoning tests may be used to measure critical thinking ability among students.

## Using the Elements of Thought and Intellectual Standards to Analyze, Transform, and Resolve Interpersonal Conflicts

**Shawn Queeney**
Associate Professor
Communication Studies
Bucks County Community College

*Room: Lanai 2*

Conflict is an inevitable aspect of human communication. However, conflict does not have to be a destructive force in our relationships. By employing the eight elements of thought, we can analyze, transform, and resolve conflicts while we strive for collaborative, win-win solutions.

For our purposes, I will use the following conception of "conflict," an often-quoted definition by William Wilmot and Joyce Hocker:

> "*Conflict is an expressed struggle between at least two interdependent parties who perceive incompatible goals, scarce resources, and interference from the other party in achieving their goals.*"

Participants will be asked to describe a conflict (either current or past) and then apply the elements of thought to the conflict. This activity should help participants generate questions, perspectives, and ideas that will allow them to build constructive solutions they can use to better work through future conflicts. Participants will also work on uncovering conflict rituals (based on their assumptions and their conceptions of "conflict") that they engage in regularly. The session will conclude with participants discussing their solutions with fellow participants and using intellectual standards (clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness) to assess the quality of their solutions.

Striving to resolve conflicts collaboratively, and in the spirit of achieving a "win-win" resolution, aligns with the intellectual traits proposed by Elder and Paul. Transforming and resolving conflicts in a positive way demands that participants communicate with high degrees of intellectual integrity, intellectual humility, intellectual courage, intellectual empathy, fairmindedness, confidence in reason, intellectual perseverance, and intellectual autonomy.

## Developing Course Assignments to Guide Students in Their Development and Use of Critical Thinking Skills

**Mel Manson**
Professor of Sociology and Psychology
Endicott College

*Room: Claremont*

As teachers we search for a model to help bring our students to a form of thinking that will open their minds and have them think clearly, deeply, and rationally. Critical Thinking is such a model. By incorporating the elements of thought and the intellectual standards, and by being aware of the intellectual virtues, we are able to prepare meaningful class presentations and assignments that will affect the thinking and problem solving skills of our students. This session will present instructional strategies that can create rigor and give structure to student reasoning. At the same time these classroom strategies can be used to assess and document a student's ability for deep understanding of the assumptions, points of view, concepts, and issues studied in your discipline. Participants will be asked to evaluate how effective these assignments might be in their classroom and to share suggestions on how to incorporate these ideas, and others from fellow session participants, into new class assignments.

## Critical Thinking Beyond the Academic Setting: Engaging Our Fellow Citizens

**Doug Matheson**
Author,
*Thinking Versus Just Believing*

*Room: Lanai 3*

In exploring ways to take critical thinking beyond the academic setting, participants will consider the following questions: what does a serious evaluation of our times lead one to conclude about the challenges we face? Do we have a problem on our hands in that conservatives and liberals tend to not be able to talk with each other, rather they talk right past each other; i.e. they're not only not on the same page, they can't seem to think toward the same page? Which of the intellectual standards is particularly critical as a point of divergence in people and groups going different directions from that point on? Do we in fact have an obligation to leave a decent, stable, and hopefully enjoyable world to future generations? What are some of the major roadblocks and/or challenges to making it another 50 years with greater elements of sustainability in place? What factors most contribute to the native human tendency to seek belief-reinforcing "facts," to believe what we want to believe, or in other words to have the tendency toward wishful thinking?

## Proven Critical Thinking Strategy: Teaching Students the Art of Reason Through the Logic of Global Health Care

**Juanita Holliman**
College of Health Professions
Chicago State University

*Room: Monterey*

The presenter will share a proven teaching strategy she uses to foster critical thinking. As a teacher, she emphasizes the importance of placing critical thinking at the heart and soul of teaching and learning. The concepts of the elements of reasoning and intellectual standards are written into all of her course syllabi, and become a part of her introduction to the course materials.

In a class of 36 students enrolled in a Community/Public Health Course, she divided the class into six groups, representing topics ranging from "Public Health Care Systems in America" to "Global Health Care." The presentation guidelines read as follows: student groups will apply the theoretical framework of critical thinking, using the elements of reasoning and intellectual standards to reason through the logic of content in assigned chapters. The presenter will share the logic/reasoning put forth by students as they integrated critical thinking with Global Health Care.

# Concurrent Sessions and Guest Focal Sessions Presenter Information

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## Presenter Information, continued

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# Evening Session
# Round-Table Discussions

**Wednesday, July 24, 2013**
**7:00 – 8:30 p.m.**
**Sonoma Room**

Join us for the evening round-table discussions, which offer an opportunity for us to engage in lively informal discussions. For this year's round table discussion topics and leaders, we invited each of you (through email) to submit a round-table discussion topic you would like to facilitate.

Here are the topics submitted for discussion. Feel free to join any of these discussions or propose a topic of your own when you arrive…

- **The Challenges Implicit in Fostering a Substantive Conception of Critical Thinking Across the Curriculum** (Lesley-Jane Eales-Reynolds, Kingston University)
- **Reforming Science Through Critical Thinking** (Mary Taft, American International College)
- **Critical Thinking and Science** (Joie Rowles, Midwestern University)
- **Critical Thinking and the Search for World Peace** (Robert Schlim, University of Spokane)
- **Critical Thinking in Higher Education** (Spencer Wagley, Sterling College)
- **Certainty, Intuition, Emotion, and Critical Thinking?** (Pete Walton, University of Louisville)
- **Teaching Students (People) to Think Critically is a Step by Step Process** (Mel Manson, Endicott College)
- **Critical Thinking in the K-12 Mathematics Classroom** (Juliet Mohnkern and Krista Fantin, Cesar Chavez Schools for Public Policy)
- **Critical Thinking in Everyday Life** (Gladys Mangiduyos, Wesleyan University - Philippines)
- **Facing the Challenges Implicit in Fostering a Substantive Conception of Critical Thinking as Part of a Reaffirmation Project** (Trish Parrish, Saint Leo University and Fred May, Eastern Kentucky University)
- **Critical Thinking and Millennial Generation Perceptions of Web Source Credibility** (Patrick Carmichael, Mount Royal University)

# Critical Thinking and the Educated Person

No one lacking the skills and traits of the critical mind should be considered a fully educated person. Educated persons, in a strong sense of the word 'educated,' are able to enter viewpoints alien to them and think within those viewpoints clearly and accurately in good faith. They change their position when faced with reasoning superior to their own. They are able to give serious consideration to alternate possible conclusions when reasoning through a complex issue. They are able to think logically, to think with breadth and depth, when the question at issue requires them to do so. Educated persons, in this strong sense, are able to formulate their purposes clearly and accurately, to check multiple purposes for consistency, to determine how their purposes relate with the question at issue. They are able to persevere through the difficulties in issues. They apply the same standards to their own thinking and behavior that they expect of others. They have the courage to examine their beliefs and stand alone, using disciplined reasoning, when opposed by others. Implicit in all of these skills, abilities and dispositions are the elements of reasoning, intellectual standards and intellectual virtues.

Critical thinking in a strong sense of the word 'educated,' is not now a cultural or educational value, as is evidenced by its rarity in our schools, colleges and universities at all levels and in all subjects. Only when institutions begin to take critical thinking seriously and thus foster it systematically within and across departments and divisions, in keeping with basic intellectual standards and traits, will we begin to educate the mind in the strong sense of the word.

For more than 30 years we have worked to foster critical thinking across the curriculum. Throughout this time we have focused on the problem of didactic instruction as a prevailing deep-seated barrier to critical thinking across the curriculum. This, of course, is an old problem that goes back perhaps hundreds, if not thousands, of years. But most important, it is a problem still prevalent today, despite agreement among educators and administrators that we need to go beyond it. The table on the next few pages delineates important differences between didactic instruction and critical thinking, this table being only slightly modified from the original published more than two decades ago in *Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World*. It provides a comprehensive and integrated theoretical framework for understanding or fostering critical thinking across the curriculum.

| Theory of Knowledge, Learning, and Literacy | |
|---|---|
| **Didactic Theory** | **Critical Thinking** |
| **1. The fundamental needs of students** | |
| That the fundamental need of students is to be taught more or less ***what*** to think, not ***how*** to think (that is, that students will learn how to think if they can only get into their heads what to think). | That the fundamental need of students is to be taught ***how,*** not ***what*** to think; that it is important to focus on significant content, but this should be accomplished by raising live issues that stimulate students to gather, analyze, and assess that content. |
| **2. The nature of knowledge** | |
| That knowledge is independent of the thinking that generates, organizes, and applies it. | That all knowledge of "content" is generated, organized, applied, analyzed, synthesized, and assessed by thinking; that gaining knowledge is unintelligible without engagement in such thinking. (It is ***not*** assumed that one can think without some content to think about, nor that all content is equally significant and useful.) |
| **3. Model of the educated person** | |
| That educated, literate people are fundamentally repositories of content analogous to an encyclopedia or a data bank, directly comparing situations in the world with facts that they carry about fully formed as a result of an absorptive process. That an educated, literate person is fundamentally a true believer, that is, a possessor of truth, and therefore claims much knowledge. | That an educated, literate person is fundamentally a repository of strategies, principles, concepts, and insights embedded in processes of thought rather than in atomic acts. Experiences analyzed and organized by critical thought, rather than facts picked up one-by-one, characterize the educated person. Much of what is known is constructed by the thinker as ***needed*** from context to context, not ***prefabricated*** in sets of true statements about the world. That an educated, literate person is fundamentally a seeker and questioner rather than a true believer, and is therefore cautious in claiming knowledge. |

| Theory of Knowledge, Learning, and Literacy | |
|---|---|
| **Didactic Theory** | **Critical Thinking** |
| **4. The nature of learning** | |
| That knowledge, truth, and understanding can be transmitted from one person to another by verbal statements in the form of lectures or didactic teaching. | That knowledge and truth can rarely, and insight never, be transmitted from one person to another by the transmitter's verbal statements alone; that one cannot directly give another what one has learned—one can only facilitate the conditions under which people learn for themselves by figuring out or thinking things through. |
| **5. The nature of listening** | |
| That students do not need to be taught skills of listening to learn to pay attention and this is fundamentally a matter of self-discipline achieved through willpower. Students should therefore be able to listen on command by the teacher. | That students need to be taught how to listen critically—an active and skilled process that can be learned by degrees with various levels of proficiency. Learning what others mean by what they say requires questioning, trying on, testing, and hence, engaging in public or private dialogue with them, and this involves critical thinking. |
| **6. The relationship of the basic skills to thinking skills** | |
| That the basic skills of reading and writing can be taught without emphasis on higher order critical thinking. | That the basic skills of reading and writing are inferential skills that require critical thinking; that students who do not learn to read and write critically are ineffective readers and writers; and that critical reading and writing involves dialogical processes in which probing critical questions are raised and answered. (For example, What is the fundamental issue? What reasons, what evidence, is relevant to this issue? Is this source or authority credible? Are these reasons adequate? Is this evidence accurate and sufficient? Does this contradict that? Does this conclusion follow? Is another point of view relevant to consider?) |

| Theory of Knowledge, Learning, and Literacy | |
|---|---|
| **Didactic Theory** | **Critical Thinking** |
| **7. The status of questioning** | |
| That students who have no questions typically are learning well, while students with a lot of questions are experiencing difficulty in learning; that doubt and questioning weaken belief. | That students who have no questions typically are not learning, while having pointed and specific questions, on the other hand, is a significant sign of learning. Doubt and questioning, by deepening understanding, strengthen belief by putting it on more solid ground. |
| **8. The desirable classroom environment** | |
| That quiet classes with little student talk are typically reflective of students learning while classes with a lot of student talk are typically disadvantaged in learning. | That quiet classes with little student talk are typically classes with little learning while classes with much student talk focused on live issues is a sign of learning (provided students learn dialogical and dialectical skills). |
| **9. The view of knowledge (atomistic vs. holistic)** | |
| That knowledge and truth can typically be learned best by being broken down into elements, and the elements into sub-elements, each taught sequentially and atomically. Knowledge is additive. | That knowledge and truth is heavily systemic and holistic and can be learned only by many ongoing acts of synthesis, many cycles from wholes to parts, tentative graspings of a whole guiding us in understanding its parts, periodic focusing on the parts (in relation to each other) shedding light upon the whole, and that the wholes that we learn have important relations to other wholes as well as their own parts and hence need to be frequently canvassed in learning any given whole. (This assumption has the implication that we cannot achieve in-depth learning in any given domain of knowledge unless the process of grasping that domain involves active consideration of its relation to other domains of knowledge.) That each learner creates knowledge. |

| Theory of Knowledge, Learning, and Literacy | |
|---|---|
| **Didactic Theory** | **Critical Thinking** |
| **10. The place of values** | |
| That people can gain significant knowledge without seeking or valuing it, and hence that education can take place without significant transformation of values for the learner. | That people gain only the knowledge they seek and value. All other learning is superficial and transitory. All genuine education transforms the basic values of the person educated, resulting in persons becoming life-long learners and rational persons. |
| **11. The importance of being aware of one's own learning process** | |
| That understanding the mind and how it functions, its epistemological health and pathology are not important or necessary parts of learning. To learn the basic subject matter of the schools, one need not focus on such matters, except perhaps with certain disadvantaged learners. | That understanding the mind and how it functions, its health and pathology, are important and necessary parts of learning. To learn subject matter in-depth, we must gain some insight into how we as thinkers and learners process that subject matter. |
| **12. The place of misconceptions** | |
| That ignorance is a vacuum or simple lack, and that student prejudices, biases, misconceptions, and ignorance are automatically replaced by their being given knowledge. | That prejudices, biases, and misconceptions are built up through actively constructed inferences embedded in experience and must be broken down through a similar process; hence, that students must reason their way dialogically and dialectically out of their prejudices, biases, and misconceptions. |
| **13. The level of understanding desired** | |
| That students need not understand the rational ground or deeper logic of what they learn to absorb knowledge. Extensive but superficial learning can later be deepened. | That rational assent is an essential facet of all genuine learning and that an in-depth understanding of basic concept and principles is an essential foundation for rational concepts and facts. That in-depth understanding of root concepts and principles should be used as organizers for learning within and across subject matter domains. |

| Theory of Knowledge, Learning, and Literacy | |
|---|---|
| **Didactic Theory** | **Critical Thinking** |
| **14. Depth versus breadth** | |
| That it is more important to cover a great deal of knowledge or information superficially than a small amount in depth. That only after the facts are understood, can students discuss their meaning; that higher order thinking can and should only be practiced by students who have mastered the material. That thought-provoking discussions are for the gifted and advanced only. | That it is more important to cover a small amount of knowledge or information in depth (deeply probing its foundation) than to cover a great deal of knowledge superficially. That all students can and must probe the significance of and justification for what they learn. |
| **15. Role definition for teacher and student** | |
| That the roles of teacher and learner are distinct and should not be blurred. | That we learn best by teaching or explaining to others what we know. |
| **16. The correction of ignorance** | |
| That the teacher should correct the learners' ignorance by telling them what they do not know. | That students need to learn to distinguish for themselves what they know from what they do not know. Students should recognize that they do not genuinely know or comprehend what they have merely memorized. Self-directed recognition of ignorance is necessary to learning. |
| **17. The responsibility for learning** | |
| That the teacher has the fundamental responsibility for student learning. Teachers and texts provide information, questions, and drill. | That progressively the student should be given increasing responsibility for his or her own learning. Students need to come to see that only they can learn for themselves and that they will not do so unless they actively and willingly engage themselves in the process. |

| Theory of Knowledge, Learning, and Literacy | |
|---|---|
| **Didactic Theory** | **Critical Thinking** |
| **18. The transfer of learning to everyday situations** | |
| That students will automatically transfer the knowledge that they learn in didactically taught courses to relevant real-life situations. | That most knowledge that students memorize in didactically taught courses is either forgotten or rendered "inert" by their mode of learning it, and that the most significant transfer is achieved by in-depth learning, which focuses on experiences meaningful to the student and aims directly at transfer. |
| **19. Status of personal experiences** | |
| That the personal experiences of the student has no essential role to play in education. | That the personal experiences of the student is essential to all schooling at all levels and in all subjects; that it is a crucial part of the content to be processed (applied, analyzed, synthesized, and assessed) by the student. |
| **20. The assessment of knowledge acquisition** | |
| That a student who can correctly answer questions, provide definitions, and apply formulae while taking tests has proven his or her knowledge or understanding of those details. Since the didactic approach tends to assume, for example, that knowing a word is knowing its definition (and an example), didactic instruction tends to overemphasize definitions. Students practice skills by doing exercises, specifically designed as drill. Successfully finishing the exercise is taken to be equivalent to having learned the skill. | That students can often provide correct answers, repeat definitions, and apply formulae while yet not understanding those questions, definitions, or formulae. That proof of knowledge or understanding is found in the students' ability to explain in their own words, with examples, the meaning and significance of the knowledge, why it is so, and to ***spontaneously*** recall and use it when relevant. |
| **21. The authority validating knowledge** | |
| That learning is essentially a private, monological process in which learners can proceed more or less directly to established truth, under the guidance of an expert in such truth. The authoritative answers that the teacher has are the fundamental standards for assessing students' learning. | That learning is essentially a public, communal, dialogical, and dialectical process in which learners can only proceed indirectly to truth with much "zigging and zagging" along the way, much back-tracking, misconception, self-contradiction, and frustration in the process. In this process, authoritative answers are replaced by authoritative standards for engagement in the communal, dialogical process of enquiry. |

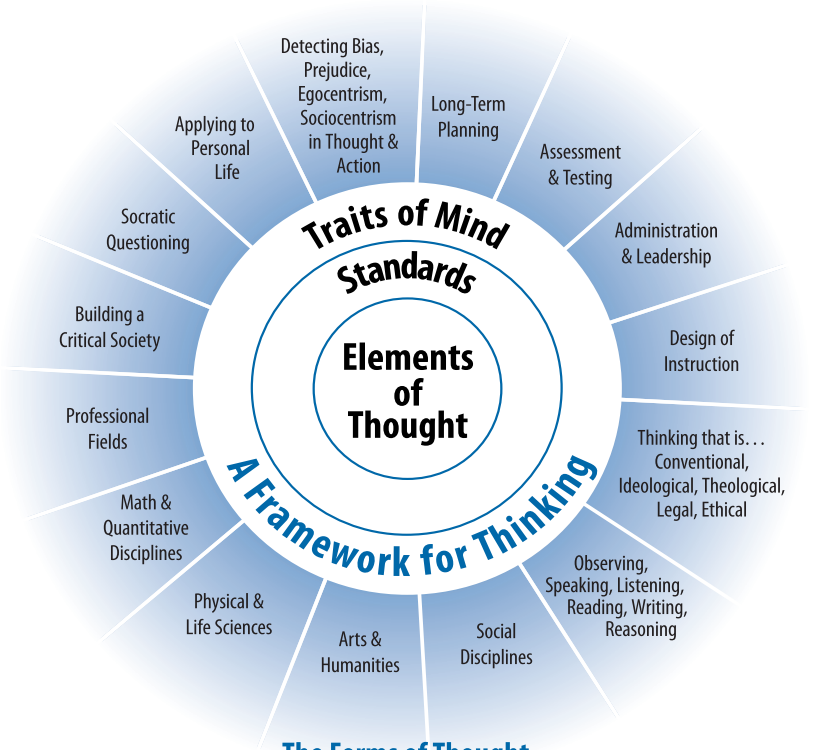
One of the significant problems we face in bringing critical thinking across the curriculum is that few scholars within the various disciplines are taking critical thinking seriously. They may reason well within their disciplines implicitly. But making critical thinking accessible to all students requires explicit contextualization within the disciplines. Thus, in our work at the Foundation for Critical Thinking, we have developed many publications that contextualize critical thinking across the disciplines and which offer tools for engaging students in deep learning, both in and across disciplines. See our *Thinker's Guide Library* for some of our areas of emphasis.

**Using Graphic Illustrations to Foster Global Insights into Critical Thinking and its Application Across the Disciplines**

It is important for instructors to provide learners with graphic images that facilitate their picturing in their mind's eye the over-arching concepts and principles underlying and synthesizing the constituent "parts" being learned. The images on the following several pages exemplify this point. We recommend that you study the various images provided and determine the extent to which you are able to "translate" each into an accompanying explanatory text. In doing so, it is important that you recognize that the images themselves are presented for their heuristic value alone. They have no "metaphysical" or "absolutistic" status. They are useful if they aid the learner using them. The same field of concepts and principles can be represented in different graphics. When a graphic is effective, the learner studying them can explain core concepts and principles in a more "intuitive" way. However, if you find that any of these graphics seem misleading, set the graphic aside and create your own.

# Critical Thinking is Manifested in ALL Forms of Thought

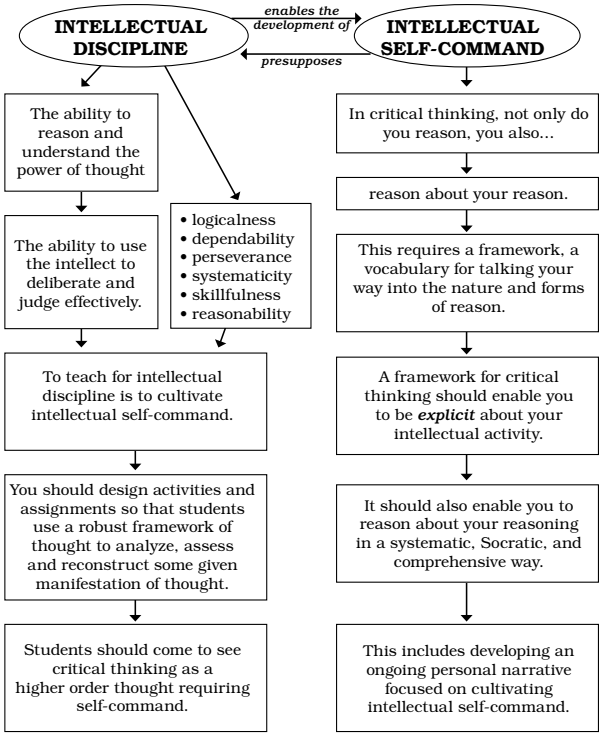



## The Forms of Thought as Relevant to Critical Thinking Across the Disciplines

# Intellectual Discipline

## Requires and Presupposes Intellectual Self-Command
## Can Be Fostered in Teaching and Learning




This diagram suggests the importance of the relationship between intellectual discipline and intellectual self-command. What is more, a number of core concepts are interwoven here, while others are suggested by implication.

Contrast your sense of the conceptual points made as a result of their display in the graphic with an unintegrated list of individual concepts: Intellectual discipline, self-command, ability to reason, understanding the power of thought, ability to use the intellect, ability to deliberate, ability to judge, to reason about your reason, logicalness of thought, dependability of thought, perseverance in thought, systematicity of thought, skillfulness in thought, teaching for intellectual discipline, cultivating intellectual self-command.

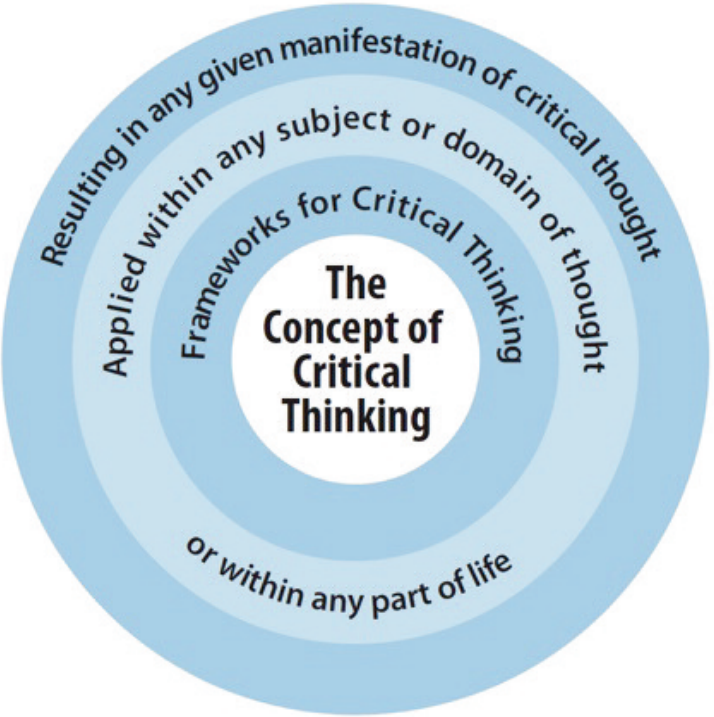
 

## Thinking Within Every Subject and Domain of Human Thought

Anthropological thinking
Mathematical thinking
Sociological thinking
Historical thinking
Archeological thinking
Biological thinking
Botanical thinking
Zoological thinking
Chemical thinking
Biochemical thinking
Geological thinking
Political thinking
Geographical thinking
Ecological thinking
Physiological thinking
Astronomical thinking
Financial thinking
Medical thinking
Pharmacological thinking
Psychological thinking
Arithmetic thinking
Algebraic thinking
Geometrical thinking
Musical thinking
Artistic thinking
Biotechnological thinking
Criminological thinking
Epidemiological thinking
Statistical thinking
Technological thinking
Nano-technological thinking
Global thinking
Philosophical thinking
Metaphysical thinking
_____ thinking

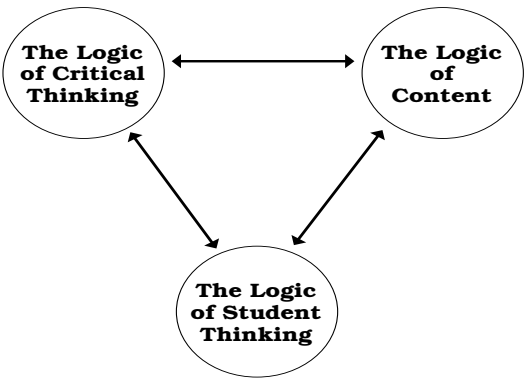
Thinking like a doctor
Thinking homeopathically
Thinking allopathically
Thinking like a surgeon
Thinking like a psychologist
Thinking like an economist
Thinking like a librarian
Thinking like a lawyer
Thinking like a educator
Thinking like a teacher
Thinking like a principal
Thinking like a dean
Thinking like a classroom teacher
Thinking like a novelist
Thinking like a dramatist
Thinking like a poet
Thinking like a writer
Thinking like a civil engineer
Thinking like a nurse
Thinking like an accountant
Thinking like an architect
Thinking like a sculptor
Thinking like a painter
Thinking like a dancer
Thinking like a physicist
Thinking like a parasitologist
Thinking like a linguist
Thinking like a computer scientist
Thinking like a judge
Thinking like a defense attorney
Thinking like a prosecutor
Thinking like a police officer
Thinking like a social worker
Thinking like a physical therapist
Thinking like a _____

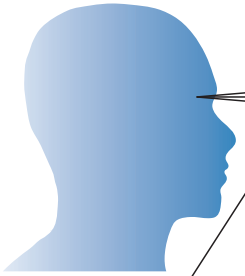



## Critical Thinking, Content, and Student Thinking

### Each Has its Own Logic: Each Must Interconnect



# The Figuring Mind



**Object**

The thing must have a logic. . .
something to figure out. . .

There is a logic to figuring something out, to constructing a system of meanings which makes sense of something

There are **intellectual standards** critical thinkers use to assess whether the logic in our mind mirrors the logic of the thing to be understood

**The Elements of Thought reveal the logic:**

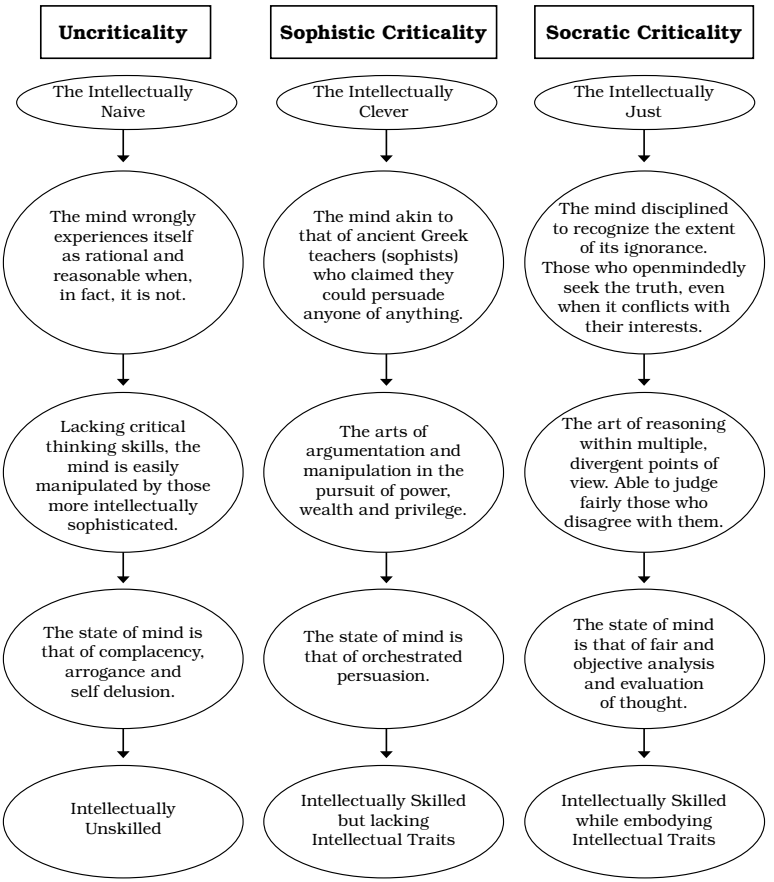
| | | | |
|---|---|---|---|
| 1 | An object to be figured out | → | some data or information, some experience of it (the **Empirical Dimension**) |
| 2 | Some reason for wanting to figure it out | → | our **Purpose** or **Goal** |
| 3 | Some question or problem we want solved | → | our **Question at Issue** |
| 4 | Some initial sense of the object (whatever we take for granted) | → | our **Assumptions** |
| 5 | Some ideas by which we are making sense of the object | → | the **Conceptual Dimension** |
| 6 | Some drawing of conclusions about the object | → | our **Inferences** or interpretations |
| 7 | What follows from our interpretation of the object | → | the **Implications** and **Consequences** |
| 8 | Some viewpoint from which we conceptualize the object | → | our **Point of View** or **Frame of Reference** |

**Intellectual Standards include:**

- **Clarity**
- **Precision**
- **Relevance**
- **Accuracy**
- **Depth**
- **Breadth**
- **Logic**
- **Fairness**

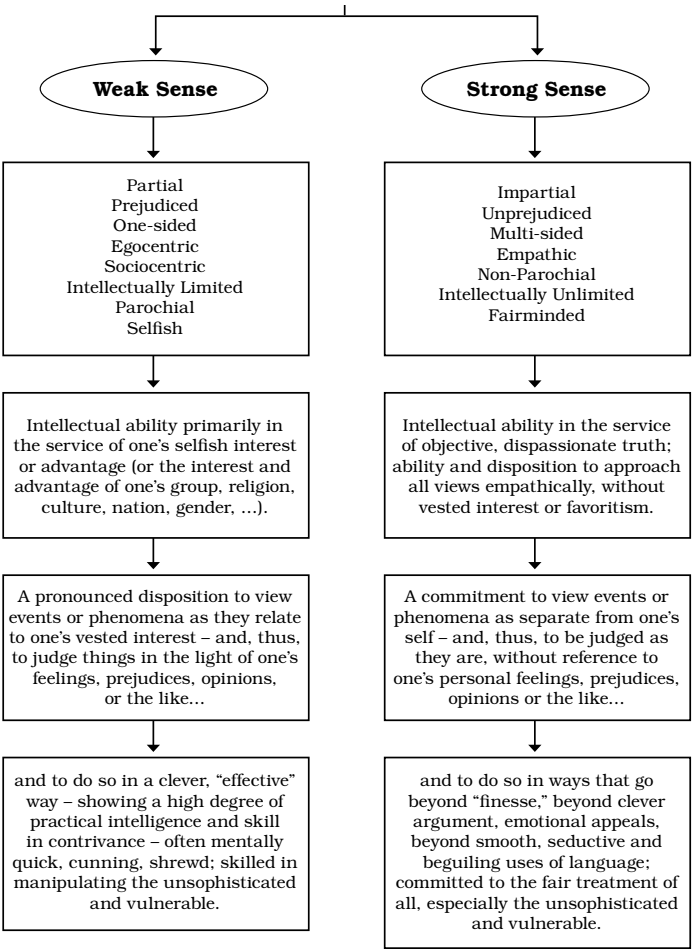
 

# Three Forms of Criticality



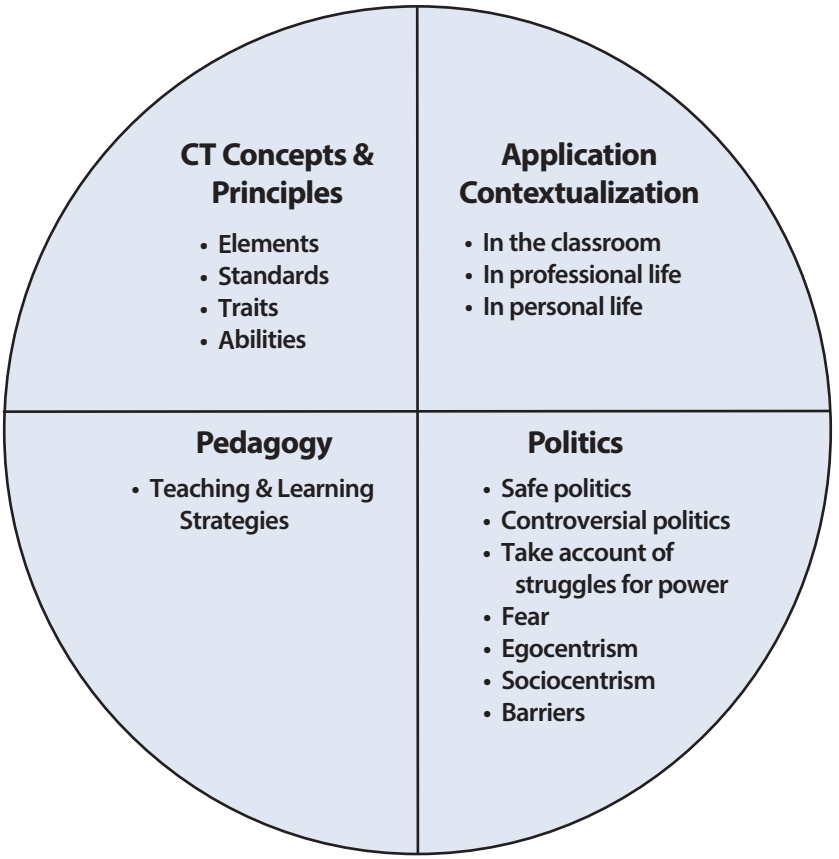

 

# Strong Versus Weak



# Integrating Four Dimensions of Critical Thinking Development



### Bringing Critical Thinking Across the Curriculum Must Be Given Priority in Schools, Colleges and Universities

During the past three decades, those of us at the Center and Foundation for Critical Thinking have articulated central concepts of critical thinking (in as simplified a form as we believe possible) within an integrated theoretical framework. We have distinguished the difference between thinking critically in a weak-sense (selfish critical thought) and thinking critically in a strong-sense (fairminded critical thought). We have articulated the issues that emerge when we focused critical thinking skills on the subject of teaching critical thinking in every subject and at every grade level. All of our work has been based on these premises:

- that the fundamental need of students is to be taught how, not what, to think
- that all knowledge of "content" is generated, analyzed, organized, applied, and synthesized by thinking
- that gaining knowledge is unintelligible without such thinking
- that an educated, literate person is fundamentally a seeker and questioner rather than a "true believer"
- that classroom activities are question-, issue-, or problem-centered rather than memory-centered; that knowledge and truth can rarely be transmitted by verbal statements alone
- that students need to be taught how to listen critically – an active and skilled process
- that critical reading and writing cannot be effectively taught without critical dialogue
- that those who teach must actively model the intellectual behavior they want
- that teachers must routinely require students to explain what they have learned

- that students who have no questions typically are not learning
- that students must read, write, and talk their way to knowledge
- that knowledge and truth is heavily systematic and holistic, not atomistic and piecemeal
- that people gain only the knowledge they seek and value
- that without motivation, learning is superficial and transitory
- that all genuine education transforms the values of the learner
- that students must reason their way dialogically and dialectically out of ignorance and prejudice
- that students learn best if they have to teach others what they are learning

- that self-directed recognition of ignorance is necessary to learning
- that when possible, teachers should allow students to express their own ideas
- that the personal experience of the students is essential to all learning

In our work with teachers and administrators, we have tried to help them see that it is important to be clear about the goal of critical thinking on three levels:

1. the ideal level (what is our vision of ideal success?)
2. the realistic level (what stands in the way of achieving that vision?), and
3. the pragmatic or practical level (what strategies have we devised for moving from where we are to a closer approximation of our goal?)

Many people are not clear as to what they are trying to achieve (in integrating critical thinking across the disciplines). Most people are not clear as to what stands in the way of achieving this goal. An even larger number are confused as to what strategies, if pursued, would enable them to maximize their success. Finally, an even larger number of people are resistant, irrespective of which analysis one favors, to doing the intellectual work—the sheer intellectual drudgery—essential to success.

If critical thinking is to play a leading role in the reform of education, the problem of bringing critical thinking across the disciplines must become transparent and intuitive to faculty and students. If critical thinking is to become transparent and intuitive to faculty and students across the disciplines, teaching and learning must be re-thought within an integrated theoretical framework. The result of such "rethinking" must demonstrate what it would look like for faculty and students to work together toward the cultivation of intellectual skills, abilities and traits. It must show them what it would be like to apply critical thinking concepts and principles in practical ways to everyday teaching and learning. Faculty must be able to picture the reality in their minds' eyes. And they must believe in the reality they are picturing. Then they must work together toward that reality in the spirit of fairminded criticality.

This may be put another way. If students are to gain insight into how the basic concepts of critical thinking apply in the disciplines they study, they need to be taught by faculty who themselves grasp that application. This presupposes faculty going through a process of learning in which they come to increasingly grasp this insight for themselves. But such a transformation of teacher-learning, such transfer across the disciplines, requires deep-seated motivation and intellectual perseverance. How can we win the hearts and minds of educators so they become committed to living an examined life? It is only through this commitment that they will develop the requisite skills and dispositions to effectively foster critical thinking across the disciplines and across the curriculum? These are the questions we faced 50 years ago when Glaser conducted the first "official" study on critical thinking and these are the questions we still face today.

# History and Outreach

The Center for Critical Thinking was established in 1980 to advance the idea of fairminded critical societies in education and every dimension of life; the Foundation for Critical Thinking was established in 1991.

From the beginning, our work has emphasized the need for three things: 1) a substantive conception of critical thinking based in ordinary language, accessible to all, 2) an approach that fosters and encourages critical thinking (in a strong-sense) across all disciplines, subjects, domains of human thought and life, and 3) barriers and challenges to critical thinking and ways of dealing with them. Our work can be broadly categorized into these areas:

1. theoretical development, scholarship and research
2. outreach through conferences, academies and workshops
3. outreach through onsite training for schools, colleges and universities
4. development of testing and assessment tools in critical thinking
5. development, publication and dissemination of books, instructional materials, videos and thinker's guides on critical thinking
6. outreach through a dynamic website which offers many complementary resources for educators at all levels, including a large online library
7. outreach through multi-language translations of our work

### Theoretical development, scholarship and research

Theoretical development in critical thinking has been a primary focus of our work at the Foundation for Critical Thinking. All of this theory has been pursued in an attempt (ultimately) to answer the question: What is critical thinking (viewed globally), and how can it be contextualized to help people live more rationally, productively, fairmindedly? The theory in our approach is detailed in our many publications. We also conduct and support ongoing research in critical thinking (see our website for examples). We believe that a rich conception of critical thinking is one that is alive and in constant development; hence the need for continual development of the theory of critical thinking. Further, we believe that any field of study can potentially contribute to such a conception. Therefore, we invite scholars to contribute to this robust conception. We invite scholarly critique. All of our work should stand the test of scholarly assessment. It should grow and develop as a result thereof.

### Conferences, academies and workshops

The First Conference on Critical Thinking, sponsored by the Center for Critical Thinking, marked the year of our birth (1980). Since that time, we have continued to host this conference every year. In addition, we sponsor and coordinate critical thinking academies (national and international), as well as regional workshops. More than 60,000 educators and administrators have attended these events, many from countries beyond the U.S. For instance, in the past four years alone, educators from the following countries have attended our events: Singapore, China, Canada, England, Australia, Germany, Hong Kong, Israel, Malaysia, Mexico, Nigeria, Philippines, Saudi Arabia, Denmark, Korea, Nepal, South Africa, Thailand, American Samoa, Czech Republic, Kazakhstan, Kuwait, Japan, Venezuela, Taiwan, Turkey, United Kingdom, Netherlands, Jamaica, Kuwait, Oman, Russian Federation, Spain, Sweden, and United Arab Emirates. At any given conference, more than 100 departments are represented from every major field of study, and from every grade level from elementary through graduate school, making our conference the most diverse conference on critical thinking in the world. We have provided national and international scholarships to our conferences and events for hundreds of educators.

### Onsite professional development programs

We develop and conduct onsite professional development programs for educators at all levels, both in the U.S. and abroad. In the past three decades, we have presented professional development workshops to more than 70,000 educators. All of our professional development programs are designed and developed with participating institutions in mind, as there is no formulaic way to develop substantive professional development in critical thinking. The actual context must always be taken into account.

### Testing and assessment tools in critical thinking

The Foundation for Critical Thinking offers assessment instruments that share in the same general goal: to enable educators to gather evidence relevant to determining the extent to which instruction is fostering critically thinking (in the process of learning content). To this end, the fellows of the Foundation recommend:

- that academic institutions and departments establish an oversight committee for critical thinking, and
- that this oversight committee utilize a combination of assessment instruments to generate incentives for faculty (by providing faculty with evidence of the actual state of instruction in critical thinking at the Institution).

The following instruments are available through the Foundation for Critical Thinking to generate evidence relevant to critical thinking teaching and learning:

1. Course Evaluation Form: provides evidence of whether, and to what extent, students perceive faculty as fostering critical thinking in instruction (course by course).
2. Critical Thinking: Concepts and Understandings: provides evidence of whether, and to what extent, students understand the fundamental concepts embedded in critical thinking (and hence tests student readiness to think critically). Online test.
3. Critical Thinking Reading and Writing Test: Provides evidence of whether, and to what extent, students can read closely and write substantively (and hence, tests student ability to read and write critically). Short Answer.
4. International Critical Thinking Test: provides evidence of whether, and to what extent, students are able to analyze and assess excerpts from text books or professional writing. Short answer.
5. Commission Study Protocol for Interviewing Faculty Regarding Critical Thinking: provides evidence of whether, and to what extent, critical thinking is being taught at a college or university (can be adapted for high school). Based on the California Commission Study. Short Answer.
6. Foundation for Critical Thinking Protocol for Interviewing Faculty Regarding Critical Thinking: provides evidence of whether, and to what extent, critical thinking is being taught at a college or university (can be adapted for High School). Short Answer
7. Foundation for Critical Thinking Protocol for Interviewing Students Regarding Critical Thinking: provides evidence of whether, and to what extent, students are learning to think critical thinking at a college or university (can be adapted for high school). Short Answer. To view a sample student interview, please register to become a member of the critical thinking community.
8. Criteria for critical thinking assignments. Can be used by faculty in designing classroom assignments or by administrators in assessing the extent to which faculty are fostering critical thinking.
9. Rubrics for assessing student reasoning abilities. A useful tool in assessing the extent to which students are reasoning well through course content.

### Publication and dissemination of instructional materials

The Foundation for Critical Thinking develops and publishes instructional materials for faculty and curriculum materials for students that foster critical thinking across the curriculum. We also send complementary copies of our thinker's guides to educators to introduce them to critical thinking. In the past decade, we have sent (free of charge) more than a million thinker's guides to educators in the U.S. and abroad. (See our website bookstore for available resources.)

### Dynamic Website - Free Resources For Educators At All Levels

For more than a decade, the Foundation for Critical Thinking has been building an increasingly dynamic website, offering more and more resources to educators, including the following:

1. More than one hundred articles under eight headings; all accessible freely; all aimed at making clearer the idea of critical thinking, its history, and its possible uses in classrooms of various subjects and grade levels;
2. research studies conducted by the FCT on the application of our work;
3. free translations of all our work for which we own the rights. Included languages: Spanish, German, Arabic, Chinese, Japanese, Korean, French, Greek, Polish, Thai, and Turkish. Spanish is the leading group with 12 works translated;
4. numerous interviews, editorials, news articles, and other visual and aural media; again, all aimed at explaining and applying critical thinking in various directions and in numerous contexts;
5. numerous critical thinking videos freely accessible;
6. an online college credit course for teachers that focuses on integrating critical thinking across the curriculum. This credit course is offered through Sonoma State University.

Our website is visited by more than a million people each year from more than 200 countries.

### Translations of our Work – 25 Languages

The works of the Fellows of the Foundation for Critical Thinking have been translated into many languages. Many of these translations are available free of charge on our website. Additional translations are being added to our online library each year.

### Institutions Using Our Approach – A Sampling

The following institutions are making considerable efforts to foster critical thinking using our approach to critical thinking. This conception is based on the

research of the Center and Foundation for Critical Thinking during the last 30 years and utilizes the work of Dr. Richard Paul, Dr. Linda Elder and Dr. Gerald Nosich. If your institution is not listed, but you think it should be added to this list, please let us know. Email Dr. Enoch Hale at hale@criticalthinking.org.

### The University of Louisville Ideas to Action:
### Using Critical Thinking to Foster Student Learning and Community Engagement

In 2007, the University of Louisville launched its quality enhancement plan (QEP) titled, Ideas to Acton: Using Critical Thinking to Foster Student Learning Community Engagement. This ten-year initiative is centered upon the development and assessment of students' critical thinking skills and the promotion of community engagement across the undergraduate curriculum. The Ideas to Action (i2a) program is part of UofL's commitment to ongoing improvement as part of the regional reaccreditation process. The Paul-Elder critical thinking model provides the framework for the teaching and learning innovations faculty and staff are creating as part of i2a at UofL. These innovations include the development of new or revised learning tools, assignments, assessments, programs and teaching and learning strategies. The i2a staff and campus partners are promoting critical thinking infusion and "Paul-Elder integration" by facilitating new learning communities, developing workshops and small group sessions, offering individual consultations, creating resource materials and fostering cross-disciplinary conversations about critical thinking. To learn more about the i2a critical thinking work at University of Louisville, go to: http://louisville.edu/ideastoaction

For more information, contact:
Edna Ross, Ph.D.
Ideas to Action Specialist for Critical Thinking
Ideas to Action Delphi Center for Teaching and Learning
University of Louisville (502) 852-5138
edna.ross@louisville.edu

### Eastern Kentucky University:
### Developing Informed, Critical and Creative Thinkers Who Communicate Effectively

Eastern Kentucky University is in its third full year of the implementation of its student learning Quality Enhancement Plan to "develop informed, critical and creative thinkers who communicate effectively" as a part of its accreditation. In that effort, EKU has embraced the work of The Foundation for Critical Thinking, promoting the work of Richard Paul, Linda Elder, and Gerald Nosich.

"Coaches" (faculty & staff trainers) continue to work with individuals, departments, and colleges to develop specific teaching and assessment strategies to help improve student critical/creative thinking. Professional Learning Communities are being used to promote professional development to both faculty and professional staff to improve student critical/creative thinking and communication skills, in and out of the classroom. Workshops, consultations, resource libraries, and brown bag sessions help promote this initiative. The Foundation's booklets, posters, and bookmarks are widely distributed and displayed across campus. The new EKU five-year Strategic Plan is centered on student critical/creative thinking and communication and requires that each academic department develop student-learning outcomes to address these specific goals. You can find more information at this link: http://www.qep.eku.edu/

For information about the program, contact Kate Williams
Director / Quality Enhancement Programs
University Programs / Academic Affairs
Eastern Kentucky University
Kate.Williams@EKU.EDU

## Surry Community College:
### Becoming a Learning College Built on Critical Thinking

In the summer of 2003, Surry Community College in Dobson, North Carolina, began an initiative to improve and expand student learning with a focus on critical thinking. Our first decision was to adopt a shared model of critical thinking.

A common model allows students to make connections between subjects and skill sets. If multiple models (different language, different definitions and frameworks) are used across campus, it is difficult for students to see those connections. In order for an institution to impact students' thinking abilities college-wide, faculty must construct courses and design instruction around a common conceptualization of critical thinking, one that is precise and comprehensive, not vague, incomplete or narrowly defined.

After researching many conceptualizations of critical thinking, we chose the model originated by Richard Paul and developed by Paul, Linda Elder and Gerald Nosich. We believe that no other concept of critical thinking is as substantive or as accessible. At Surry Community College, we want to focus on education that moves people away from the past and facilitates new ways of learning that will prepare our students for the 21st century marketplace. We realize that critical thinking plays a vital role in facilitating that kind of authentic,

active learning. As a college focused on improving learning, we want to raise our academic standards to intellectually challenge our students on a daily basis through classroom activities and assessments that go beyond traditional lecture and rote memorization. Learning at Surry Community College should not only be rigorous but also transferable. Since our goal is for students to be successful critical thinkers for life, they must be able to transfer these skills to other venues — to future coursework, to their careers, and to their personal lives. To help achieve these goals, Surry Community College faculty continuously work to understand critical thinking and to rethink their teaching strategies, assessment methods, and even the nature of their discipline as a mode of thinking.

Using the approach developed by the Foundation for Critical Thinking, we recognize that all thinking consists of parts, or can be divided into elements: purpose, point of view, assumptions, implications and consequences, data and information, inferences and interpretations, concepts, question at issue. Paul and Elder explain in *Critical Thinking: Tools for Taking Charge of Your Learning and Your Life*, "Whenever you are reasoning you are trying to accomplish some purpose, within a point of view, using concepts or ideas. You are focused on some issue or question, issue or problem, using information to come to conclusions, based on assumptions, all of which has implications." Critical thinkers analyze their thinking, and that of others, by identifying these elements of reasoning. All thinking can be measured against intellectual standards such as clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness. Paul and Elder note, "These are not the only intellectual standards a person might use. They are simply among those that are the most fundamental-. . . . Thinking critically requires command of [these] fundamental intellectual standards." Critical thinkers assess their thinking—and that of others—by applying these standards of reasoning. Paul and Elder also note, "As we are learning the basic intellectual skills that critical thinking entails, we can begin to use those skills in a selfish or a fairminded way." All thinkers should cultivate positive intellectual traits such as intellectual humility, intellectual perseverance, intellectual integrity, intellectual courage, confidence in reason, intellectual empathy, etc.

To assist our faculty and staff in the work of critical thinking, we developed a website that explains the Surry Community College critical thinking initiative; both the thinking that shaped and continues to shape it, and the many ways in which faculty and staff have contextualized the model. You are invited to visit the site at: http://www.surry.edu/About/CriticalThinking.aspx

You may also contact Connie Wolfe at wolfec@surry.edu.

## Wilkes Community College

Wilkes Community College (WCC) was reaffirmed by the Southern Association of Colleges and Schools (SACS) in June 2006. As part of the reaffirmation, WCC developed a Quality Enhancement Plan (QEP) with the overall goal of increasing students' disposition to use critical thinking in their academic, professional, and personal lives. WCC selected the Foundation for Critical Thinking (Paul and Elder) Model of Critical Thinking to create a common language among WCC students, faculty, and staff. WCC chose to emphasize four elements of the model: information, questions, assumptions, and point of view. Students are introduced to the critical thinking model in one of the first courses they take at WCC, Success and Study Skills. *The Miniature Guide to Critical Thinking Concepts and Tools* by Paul and Elder is one of the two texts in the course.

Wilkes Community College continues its critical thinking implementation efforts and the following are a few specific examples that may illustrate that the critical thinking focus is very much a part of the WCC culture.

ACA 115 is the student success course that students take within their first thirteen hours at WCC. In this course, students are introduced to the critical thinking model that they encounter in other courses and services. The language of the Paul and Elder model is used in this course and students focus on information, questions, assumptions, and point of view. Students purchase *The Miniature Guide to Critical Thinking Concepts and Tools* by Paul and Elder along with an in-house text. Martin Moore, ACA Lead Instructor, and Sheneele Wagoner, Lead Geography Instructor, teach the majority of the ACA 115 courses. This course was scheduled to be fully implemented during fall 2009, but we implemented it a year early due to instructor and staff expectations of students. Service learning and global education and cultural awareness are now part of the course.

WCC instructors submitted critical thinking assignments and student work during fall semester 2008. Assessment of these assignments and student work will begin this semester by faculty members from the different divisions and the QEP Director.

Learning Circles continue to be well attended at WCC. Three cycles of Learning Circles are offered each semester with approximately eight times from which to choose. Faculty and staff members participate in one hour dialogue using *The Thinker's Guide to the Art of Strategic Thinking*, published by the Foundation for Critical Thinking. Facilitators guide the Learning Circles and meet monthly to plan approaches. This is one comment that was made recently: "These sessions have kept me focused on the varying implications of the QEP

model."

Learning Conversations is a new effort involving our Vice President of Instruction and Student Services, Dr. Dean Sprinkle, and a seasoned faculty member from each of the four divisions as well as a relatively new faculty member from each division. Dr. Sprinkle serves as a facilitator and the conversations relate to higher education and our role in student learning.

Two new online workshops have been developed that provide faculty and staff opportunities to work with the language of critical thinking as well as the four outcomes dealing with information, questions, assumptions, and point of view. Blackboard is the platform that participants use to access workshop material. Video clips are also included and a discussion board is available through Blackboard. These workshops were developed for adjunct faculty, new faculty, and new staff members. They also may be helpful for seasoned faculty and staff who are interested in reviewing concepts. Scheduling professional development activities is often difficult so these workshops will allow faculty and staff to participate at a time convenient to them.

The QEP Open Line continues to be published monthly in electronic format and includes critical thinking news and strategies of interest to both faculty and staff.

WCC faculty members have been involved in the development of student learning outcomes in their academic programs. A critical thinking learning outcome is expected in each program.

WCC Advisory Board members assist WCC faculty in reviewing their academic programs. Advisory board members represent organizations and businesses connected to the programs and these members were asked in fall 2008: (a) Our QEP focus is critical thinking or the skills associated with looking at one's own thinking for the purpose of improving it. We sometimes use the phrase "reasoning through" a problem, issue, or topic. In your profession or field, what role does critical thinking play in effective performance? (b) What suggestions do you have for us as we create experiences for students to "reason through" topics, ideas, or situations? How might we better prepare students for the thinking they will be expected to do in the workplace?

The QEP Director recently spent two three-hour sessions introducing the Paul and Elder critical thinking model to intermediate Emergency Medical Technology students through our continuing education division.

You can learn more about the program at Wilkes Community College at this link: http://www.wilkescc.edu/. You may also contact Jan Huggins at jan.huggins@wilkescc.edu

## Angelina College:
### Critical Thinking Skills: A Key for Successful Student Learning Outcomes in All Disciplines

Angelina College has identified three critical thinking learning outcomes consequent to the implementation of critical thinking skills in the curriculum:

1. Angelina College administration, faculty, and staff will have a common understanding of the tools and concepts of critical thinking
2. All divisions will execute tools for teaching critical thinking across the curricula
3. Graduates of Angelina College will have the ability to adapt and apply critical thinking skills and strategies in their academic, professional and personal lives.

To evaluate the implementation process and to assess student learning outcomes as they relate to critical thinking, six assessment tools will be utilized: the Community College Survey of Student Engagement (CCSSE), International Critical Thinking Basic Concepts and Understandings Test, Faculty Learning Community (FLC) Student Learning Survey, Student Perception of Critical Thinking in Instruction, Critical Thinking Rubrics, and the Student Learning Outcomes Assessment (SLOA).

Angelina College's plan included a Three Phase Implementation Cycle:

Phase I–(fall semester)–Professional Development Component

In the spring, representatives (division facilitators) from each division will begin consulting with the QEP Coordinator. In addition, these facilitators will attend the annual assessment conference that is held at Texas A&M University.

Beginning in the fall, the facilitators will attend a planning retreat to initiate the FLC process and schedule critical thinking training sessions.

The facilitators will be participating in several critical thinking training sessions. These training sessions involve compiling information and discussing content based on the Paul/Elder model of critical thinking. The curriculum followed is based on information from the text *Critical Thinking: Tools for Taking Charge of Your Learning and Your Life, 2nd Edition* (2006) by Richard Paul and Linda Elder.

Phase II–(spring semester)–Course Development Component

The facilitators will use the spring semester to plan for critical thinking implementation. Each facilitator will select a course to implement formal strategies for teaching and measuring critical thinking based on the Paul/Elder model. Course portfolios will be utilized for planning. These portfolios will serve as lesson plans for the course. Each will include information specific to the course, such as the syllabus, course materials, sample assignments, and how the

teaching method and course materials will enhance learning outcomes. Critical thinking instruction and assessment will be delineated in these portfolios. Upon completion of these course portfolios, the facilitator will have designed a critical thinking enhanced curriculum (CTEC) course.

Phase III–(fall semester)–Implementation and Assessment Component

At the beginning of the semester, students enrolled in CTEC courses will be administered the International Critical Thinking Basic Concepts and Understanding Test as a pre-test.

One week prior to final exams, the International Critical Thinking Basic Concepts and Understanding Test will be re-administered to assess the attainment of critical thinking skills. In addition, the assessment of teaching strategies and learning outcomes will be measured by utilizing the FLC Student Learning Survey for Faculty and the Student Perceptions of Critical Thinking in Instruction.

The pre and post-test scores from the International Critical Thinking Basic Concepts and Understanding Test will be compared to baseline scores on the California Critical Thinking Skills Test that was collected in April 2007.

The QEP Advisory Committee and the facilitators will review all collected data and determine the effectiveness of instruction. The group will then use the compiled data to recommend additional strategies and any changes for continuous improvement for the teaching and learning of critical thinking skills.

Angelina College plans to continue their implementation process beyond 2010.

You can read more about Angelina College's QEP Plan and Implementation of critical thinking in their curriculum on their website:
http://www.angelina.edu/QEP/institutional_effectiveness.html

For more information about the program, please contact:
Monica Y. Peters, Ph.D.
Coordinator of Institutional Effectiveness and QEP
Angelina College
Lufkin, TX
(936) 633-5250
mpeters@angelina.edu

### Beacon College:

**Enhancing Critical Thinking for Students with Learning Disabilities**

The goal of the Beacon College Quality Enhancement Plan is to improve student learning through the development of critical thinking skills by using the standards and elements of the Paul/Elder Model. The initial phase of the QEP is directed to implementing a comprehensive faculty professional development

program. Professional development activities will focus on educating faculty in the use of the elements and standards of the Paul/Elder Model.

The mission of Beacon College is to provide educational opportunities for college-able students with learning disabilities and to assist them in achieving their academic potential. Engaging students in critical thinking and fostering concept development is vital in addressing the characteristics that many students with learning disabilities bring to the classroom environment.

The student learning outcomes for the Beacon College QEP are to:

1. Improve student disposition toward critical thinking
2. Employ the elements of critical thinking to academic disciplines
3. Employ the standards of critical thinking to academic disciplines
4. Develop an understanding of the fundamental and powerful concepts of an academic discipline

Several benefits of implementation of the Beacon College QEP have already been realized. The College has strengthened as a community with a common goal and a shared language for improving the quality of the educational experiences of our students. Not only has the faculty embraced changes in which the Institution approaches instruction, but the participation of all units and departments has helped the College emerge as a learning community. Beacon College has also established an Institute of Critical Thinking, acting as a critical thinking resource center not only for the campus community, but also as a professional development resource for other institutions.

It is anticipated that implementation of the QEP will result in increased student disposition for using critical thinking skills in every aspect of their lives. Outcomes of the QEP will not only increase the quality of education provided our students, but will also contribute to research in the field of learning disabilities. Opportunity exists for the College to conduct a longitudinal study investigating five-year outcomes, as measured by the California Critical Thinking Disposition Instrument (CCTDI), between students with learning disabilities and their non-learning disabled peers using the databank of colleges and universities that have completed the outcomes of their QEPs measuring disposition toward critical thinking.

For more information about the development or implementation of the plan, please contact: Dr. Johnny Good, Vice President of Institutional Effectiveness and Accreditation Liaison. jgood@beaconcollege.edu

Please see this link for additional information:
http://www.beaconcollege.edu/qualityenhancementplan.asp

# General Conference Information

## Important Announcements

1. Please turn all cell phone ringers off during all sessions.
2. Please review all of the information included in this program. You will find an area map, information about local restaurants, information about the workshop and room assignments, and general information about the Foundation for Critical Thinking.
3. Please bring all of your thinker's guides to every workshop session. This enables the presenter (and you) to use any or all of them throughout the workshop days.
4. Place your name or initials on each of your thinker's guides, in case you get separated from your guides.
5. We also suggest that you place your name on your bag – you may use the markers we have in the Horizon Room Sales Desk area.
6. Please wear your nametag at all times when you are in the workshop sessions, so that we know you are a paid registrant, and for group activities. You will need your nametag to receive the $5/day parking rate and 10% restaurant discount.
7. Please attend only the sessions you have registered for. The sessions are designed for deep learning. Activities within each session build upon one another. If you think the session you are registered for will not meet your needs, speak with one of the presenters to see if room is available for a change.
8. Our information desk is located in the Horizon Room. Please feel free to ask for assistance or information during breaks and at lunch.
9. Coffee and tea will be provided before the sessions as well as during the breaks, and water provided all day. If you would like anything in addition to this, including snacks, feel free to bring those as you wish. You may also purchase snack items in the lobby gift shop. All breaks are in the Horizon Room; see the schedule for break times.

10. We will have several of our materials and publications available for sale at the sales and information area, in the Horizon Room. The sales desk is open during breaks and lunch, and at the end of each day's sessions. Sales will close after the morning break on Thursday.

11. There are several food options in the hotel and a list of area restaurants in this program. Claremont restaurants will honor a 10% discount on food; please show your badge at point of purchase. Menus will be posted in the Horizon Room on the FCT Bulletin Board.

12. Please see Concierge for information on airport transportation.

**Answers to frequently asked questions:**

Can I purchase the PowerPoint presentations?

We have a PowerPoint CD available for purchase during the conference. It includes many, if not most, of the visual images used in focal sessions, as well as many more images. This CD is available for $20 and contains the following files:

- Introduction to Critical Thinking
- Three Types of Questions
- Fostering the Disciplined Mind
- Elementary Instruction
- Elements of Reasoning
- Intellectual Virtues
- Key Concepts
- Questioning Mind
- Quotes and Statistics
- Role of Administration
- Relationship between Content and Thinking
- Self-Handicapping Behaviors
- Socratic Questioning
- Standards Primary
- Theory of Mind

Please ask at Bookstore Sales table for information.

Why are the sessions being videotaped?

Many of the workshop sessions are videotaped for the following reasons: (1) to permanently document the sessions for the Foundation for Critical Thinking archives, (2) to provide video footage from the sessions for our website, (3) to provide DVD video clips for educational purposes.

### Can I get a list of all conference participants?

We design workshop sessions so that participants frequently work with others in pairs and small groups. This enables those interested in establishing personal contacts at the workshop to exchange contact information. In addition, feel free to put a message on the bulletin board that invites those sharing an interest in _____ (whatever category you please), to take down your email address and leave their own for you. The message board will be located near our information and sales area, in the Horizon Room.

### How do the concurrent sessions work?

All concurrent sessions will be held on Wednesday morning. Please read the Concurrent Session Program in this program in advance to decide which sessions seem most relevant to your work and life. You will not need to pre-register for concurrent sessions.

### What is the closing session?

This is a time for all registrants to come together, to process what you have learned at the conference, to think about next steps for moving forward. This session will be led by Richard Paul, Linda Elder and Gerald Nosich.

### How can I get academic credit for participation in the conference?

Academic Credit for the international conference is available through Sonoma State University. Registration forms for academic credit will be available at the conference desk, along with a copy of the course requirements and the assignment. Once you have registered for credit, you may download course requirements from our website.

### Does the Foundation for Critical Thinking offer on-site professional development programs in critical thinking?

Yes. You can obtain a College/University or K-12 inservice packet at the workshop desk, which explains our professional development programs. That information is also available on our website at this link: http://www.criticalthinking.org/professionalDev/index.cfm

To discuss our professional development programs, email cct@criticalthinking.org

### How can I establish an official affiliation with the Foundation for Critical Thinking?

By giving us your email we will make sure you are informed of the new membership possibilities we are presently considering. You can do this at the conference desk or email us at cct@criticalthinking.org .

### How can I gain access to a library of articles on critical thinking?

There is a library of articles on our website, which includes numerous articles you can download– http://www.criticalthinking.org/resources/articles/

### How can I get information on assessment regarding critical thinking?

Information is available on our website regarding tests and assessment. www.criticalthinking.org. Also, you received two thinkers guides on assessment during registration– Critical Thinking Competency Standards, and Critical Thinking Reading and Writing Test.

### Where can I get the chimes the presenters use?

The chimes can be purchased through the following website: www.seagifts.com

# Academic Credit for the International Conference and Preconference is available through Sonoma State University

Registration forms for academic credit will be available at the conference, along with course requirements.

Participants who sign up for academic credit will submit a written assignment to the Foundation for Critical Thinking at the end of the semester following the conference that must be approved by a Foundation for Critical Thinking fellow. In the assignment, participants will demonstrate application of concepts/ideas learned at the conference in the classroom or in some other professional capacity. To register for credit, inquire at the conference desk in the Horizon Room.

| ACADEMIC CREDITS | | | | |
|---|---|---|---|---|
| Course | Units | Level | Instruction Hours | Fees |
| Phil 590 | 1 unit | Level 1 or Level 2 | 15 | $45 |
| Phil 590 | 2 units | Level 1 or Level 2 | 30 | $90 |
| Nurs 800 | 1.5 units | Level 1 or Level 2 | 30 | $30 |

## Foundation for Critical Thinking Books and Guides

The following publications have been written by Foundation for Critical Thinking Fellows and are available in our conference bookstore, or at www.criticalthinking.org:

- Critical Thinking: How to Prepare Students for a Rapidly Changing World
- Critical Thinking: Tools For Taking Charge of Your Learning and Your Life
- Critical Thinking: Tools for Taking Charge of Your Professional and Personal Life
- Critical Thinking: Learn the Tools the Best Thinkers use
- Learning to Think Things Through
- 25 Days to Better Thinking and Better Living
- Critical Thinking Handbook: K-3rd Grades
- Critical Thinking Handbook: 4th-6th Grades
- Critical Thinking Handbook: 7th-9th Grades
- Critical Thinking Handbook: High School
- The Aspiring Thinker's Guide to Critical Thinking
- The Thinker's Guide: A Glossary of Critical Thinking Terms and Concepts
- The Thinker's Guide to Analytic Thinking
- The Thinker's Guide to Intellectual Standards
- The Thinker's Guide to Intellectual Standards
- The Miniature Guide to the Human Mind
- The Miniature Guide to Critical Thinking for Children
- The Miniature Guide to the Art of Asking Essential Questions
- The Teacher's Manual for the Miniature Guide to Critical Thinking for Children
- The Thinker's Guide to Clinical Reasoning
- The Thinker's Guide to Engineering Reasoning
- The Miniature Guide to Critical Thinking Concepts and Tools
- A Critical Thinker's Guide to Educational Fads
- The Thinker's Guide for Students on How to Study and Learn a Discipline
- The Thinker's Guide to How to Write a Paragraph
- The Thinker's Guide to How to Read a Paragraph
- The Thinkers Guide to Fallacies: The Art of Mental Trickery and Manipulation

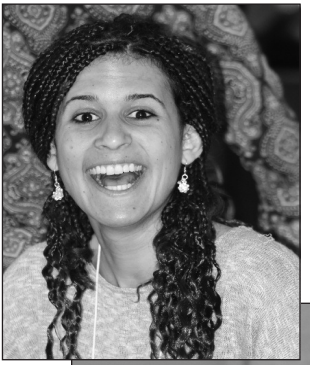
- The Thinker's Guide for Conscientious Citizens on How to Detect Media Bias and Propaganda
- The Thinker's Guide to the Art of Socratic Questioning
- The Miniature Guide to Understanding the Foundations of Ethical Reasoning
- The International Critical Thinking Reading & Writing Test
- Critical Thinking: Tools for Taking Charge of Your Learning and Your Life
- A Miniature Guide to For Those Who Teach on How to Improve Student Learning
- A Miniature Guide for Students and Faculty to Scientific Thinking
- A Guide for Educators to Critical Thinking Competency Standards
- The Thinker's Guide to the Nature and Functions of Critical and Creative Thinking
- The Student Guide to Historical Thinking
- Historical Thinking: Bringing Critical Thinking Into the Heart of Historical Study

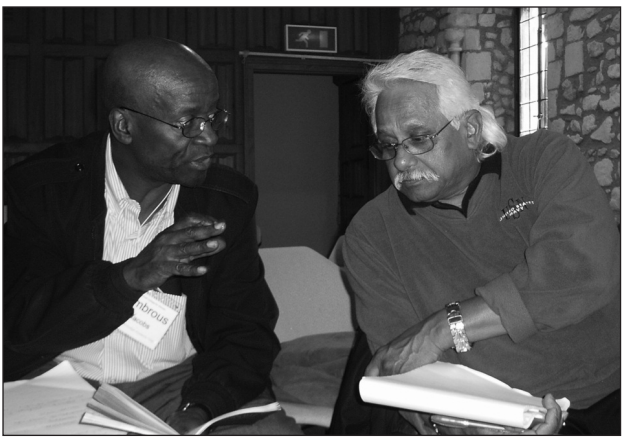
 

# Restaurant List

| | | | |
|---|---|---|---|
| **American** | | | |
| Barney's Gourmet Hamburgers | 5819 College Ave. | 510-601-0444 | Gourmet Hamburgers |
| Rockridge Café | 5492 College Ave. | 510-653-1567 | Diner |
| Rick & Ann's | 6317 College Ave | 510-654-6607 | Contemp. American, Bar |
| Wood Tavern | 2922 Domingo Ave. | 510-649-8538 | Great Breakfast, Dinner |
| **Asian** | | | |
| Soi-Four | 5421 College Ave. | 510-655-0889 | Thai, Closed Sundays |
| Tachibana | 5812 College Ave, | 510-654-3668 | Sushi |
| Shen Hua | 2914 College Ave. | 510-883-1777 | Chinese |
| Nan Yang | 6048 College Ave. | 510-763-8985 | Burmese |
| Noodle Theory | 6099 Claremont Ave. | 510-595-6988 | Great Noodle House |
| **Continental/California** | | | |
| A'Cote | 5478 College Ave. | 510-655-6469 | Serving choice, Romantic |
| Hudson | 6356 College Ave. | 510-595-4000 | Local ingred, Mediterranean influence, eclectic |
| **Italian/Pizza** | | | |
| Trattoria La Sicilliana | 2993 College Ave. | 510-704-1474 | Hmemade pasta, No c/c |
| Oliveto | 5655 College Ave. | 510-547-5356 | Upscale Italian |
| Fillippos | 5400 College Ave. | 510-601-8646 | Kid friendly Italian, casual |
| A.G. Ferrari | 2935 College Ave. | 510-849-2701 | Italian Deli |
| Zachary's Pizza | 5801 College Ave. | 510-655-6385 | Chicago deep dish pizza |
| **Indian/Middle Eastern** | | | |
| Khana Peena | 5316 College Ave. | 510-658-2300 | N. Indian cusine, upscale, |
| La Mediterranean | 2936 College Ave. | 510-540-7773 | Middle Eastern Cuisine |
| **Seafood** | | | |
| Marica | 5301 College Ave. | 510-985-8388 | Great Fish, Meat/Poultry too |
| **Pubs** | | | |
| Barclays | 5940 College Ave. | 510-654-1560 | Eng. Pub, 30 beers on tap |
| **Delivery** | | | |
| West Coast pizza | delivery till 10:00pm | 510-841-9378 | Trad. or Thin Crust Pizza |
| North Beach Pizza | delivery till midnight | 510-849-9800 | Pasta and Pizza |
| King Dong Chinese | delivery till 9:00pm | 510-841-6196 | Cantonese |
| Berkeley Thai House | delivery till 10:00pm | 510-841-8424 | Thai |
| India Palace | delivery till 10:00pm | 510-848-7252 | Northern Indian |
| Dorsey's Locker Soulfood | delivery till 9:00pm | 510-428-1935 | Authentic Soulfood |





## What previous attendees say about the conference…

- This conference stimulated "instructional" creativity. It also showed how to help students develop their understanding of and appreciation for asking questions.
- Your "stepping-out" on the proverbial "limb" in designing this conference was worthwhile. The info was clearly presented; usable, concrete and even FUN!
- Excellent identification of intellectual traits and introspection to identify barriers.
- Recognizing/affirming the importance of significant ideas, which generate significant "live" questions.
- Taking time to evaluate the intellectual traits as they apply to ourselves and developing a deeper understanding of those traits.
- This session challenged my assumption about the actual reading abilities of my students, I feel equipped to take my teaching of reading up several notches. Thank You!
- Every reading teacher/reading program director needs this booklet [How to Read a Paragraph]. Why have we been making the teaching of reading such a ridiculously difficult endeavor? Shameful!
- Thanks for all the sharing. Its been a catalyst for self reflection and the integration of all the ideas I've ever heard but never really thought seriously about.
- The most valuable thing was rebuilding a relationship with critical thinking methodology—which has reignited the flame!
- Great suggestions on how to focus on students' strengths, not weaknesses, and how to apply the tools to empower them as critical thinkers.
- The conference is invigorating, both intellectually and emotionally and it provides a wealth of practical strategies/methods.
- I have gained many good ideas from my colleagues. The conference has raised as many questions as it has given answers.
- It provides a depth of understanding that isn't possible from reading.
- Among the most stimulating days I've ever spent intellectually.
- My teaching is being transformed to inspire students' development of critical thinking skills through practice and effective facilitation.
- No one can possibly participate without changing (or learning) some aspect of how to improve their own thinking.

The Foundation for Critical Thinking seeks to promote essential change in education and society through the cultivation of fairminded critical thinking, thinking committed to intellectual empathy, intellectual humility, intellectual perseverance, intellectual integrity, and intellectual responsibility. A rich intellectual environment is possible only with critical thinking at the foundation of education. Why? Because only when students learn to think through the content they are learning in a deep and substantive way can they apply what they are learning in their lives. Moreover, in a world of accelerating change, intensifying complexity, and increasing interdependence, critical thinking is now a requirement for economic and social survival.


**Contact us online at criticalthinking.org**
to learn about our publications, videos, workshops, conferences, and professional development programs.

**Contact the Fellows:**

| | |
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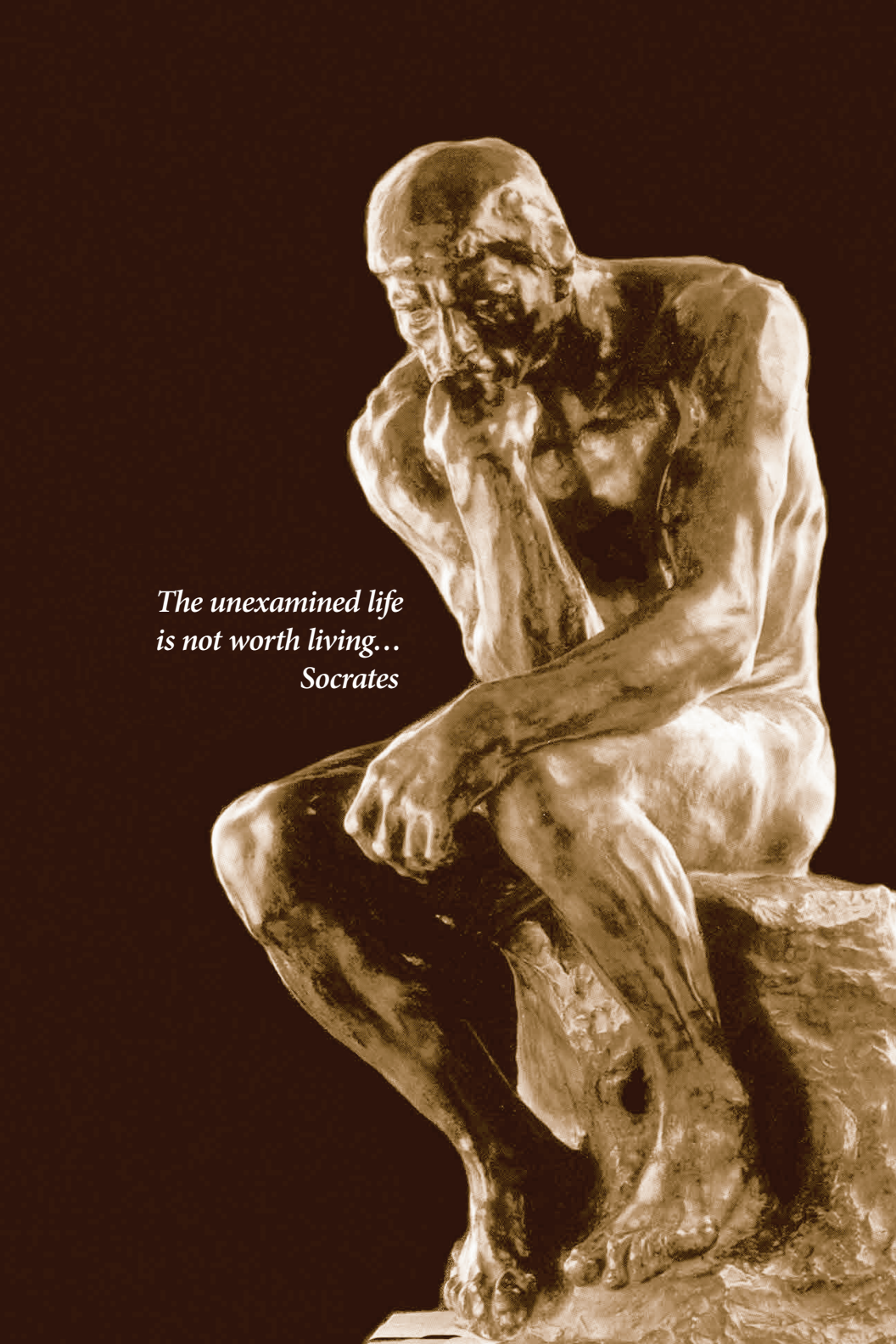
*The unexamined life*
*is not worth living…*
*Socrates*