



# The 39th Annual International Conference on Critical Thinking and Educational Reform

Cultivating the Intellect and  
Developing the Educated Mind  
through Critical Thinking

*June 4 - June 7, 2019*

Presented by the Foundation for Critical Thinking  
in Partnership with CRITTHINKEDU, KU Leuven,  
and University Colleges Leuven-Limburg (UCLL)

## Introduction to the Conference

The Center and Foundation for Critical Thinking have together hosted critical thinking academies and conferences for thirty-nine years. During that time, we have played a lead role in defining, structuring, assessing, improving, and advancing the principles and best practices of fairminded critical thought in education and society. Our annual conference offers a unique venue for improving your understanding of critical thinking, as well as your ability to foster it more substantively in the classroom and in all aspects of our 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. They learn that every historical text is written from some perspective, or set of perspectives. And these perspectives are frequently biased, as is the nature of the human mind. 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 can learn to initiate, analyze, and evaluate their own thinking and the thinking of others (within all the content

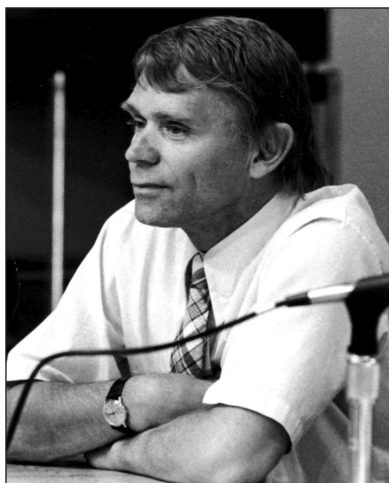
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Thinking

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 take command of their own emotional lives, and to transform their desires and motivations. They come to embody, increasingly over time, the virtues of the fairminded critical thinker.

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 optimally within and among 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.



“We assume that all of the participants in the conference bring to it a shared general interest in critical thinking, understood as a family of interdependent intellectual skills and abilities in need of support by a complex of rational passions. We assume, as well then, that all participants share a commitment to the principle that such abilities and affective qualities can only be developed over an extended period of time and as a result of careful cultivation.”

– Richard Paul, from  
p. 6 of the conference  
program for the  
Sixth International  
Conference on  
Critical Thinking and  
Educational Reform

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## Dedication

This year's program is dedicated to  
Caroline Elizabeth Dominguez and An Verburgh,  
for their leadership in the Critical Thinking Across the  
European Higher Education Curricula project funded by  
the European Commission, and for their dedication to  
bringing a robust fairminded conception of critical thinking  
across European higher education.



## 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 and in your packet. You will find a campus map, information about the sessions and room assignments, and general information about the Foundation for Critical Thinking
3. Please bring all of your Thinker's Guides to every conference session. This enables the presenter (and you) to use any or all of them throughout the conference.
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 reception area.
6. Please wear your nametag at all times when you are in the conference sessions, so that we know you are a paid registrant and for group activities.
7. Please attend only the sessions you have registered for. All conference 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 there is room available for a change.
8. Please feel free to ask for assistance or information during breaks and lunch at the information desk, which will be in the reception hall of the AP Auditoria.
9. Coffee, tea, and water will be provided during breaks in the reception hall of the AP Auditoria.
10. If you get lost, please visit SBIB in the Faculty of Social Sciences building (Parkstraat 45).
11. For additional announcements and information, please visit: [www.criticalthinking.org/pages/39th-conference-faq-and-announcements/1343](http://www.criticalthinking.org/pages/39th-conference-faq-and-announcements/1343)



## Answers to Frequently Asked Questions:

### Why are some of the sessions being recorded?

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, and (3) to provide DVD video clips for educational purposes.

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

Our privacy policy prevents this. However, we design conference sessions so that participants frequently work with others in pairs and small groups. This enables those interested in establishing personal contacts at the conference to exchange contact information. Very soon, conference participants can connect with one another, and with others who are seeking to develop as critical thinkers, through membership in our *Center for Critical Thinking Online Community*. We will send you an e-mail announcement when we open for memberships – scheduled for this fall.

### How do the Concurrent Sessions work?

All concurrent sessions will be held on Thursday, June 6. Please read the Concurrent Sessions Program in this program, in advance, to decide which sessions seem most relevant to your work and life. You do not need to pre-register for concurrent sessions.

### What is the closing session?

This is a time for all registrants to come together, process what they have learned at the conference, and think about next steps for moving forward. This session will be led by the Fellows of the Foundation for Critical Thinking.

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

Yes, both. There is a general professional development proposal included in your registration packet. That information is also available on our website at this link: <http://www.criticalthinking.org/pages/professional-development-in-criticalthinking/433>

To discuss our professional development programs, email [collins@criticalthinking.org](mailto:collins@criticalthinking.org).

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

Those who wish to facilitate instruction in critical thinking with colleagues, or as trainers in business and government, may seek certification in the *Paul-Elder Framework for Critical Thinking*.<sup>TM</sup> To learn about becoming certified in



our approach, visit: <http://www.criticalthinking.org/pages/certification-in-our-approach/1308>

### How can I get information on assessing critical thinking?

See: [www.criticalthinking.org/pages/critical-thinking-testing-and-assessment/594](http://www.criticalthinking.org/pages/critical-thinking-testing-and-assessment/594).

Also, you received two Thinker's Guides on assessment during registration – *Critical Thinking Competency Standards*, and *The International Critical Thinking Reading and Writing Test*.



Ralph Nader and Linda Elder at the 34th International Conference

## Conference Overview

**The conference entails the following four types of sessions and learning opportunities:**

1. *Plenary Sessions* that focus on the foundations and first principles of critical thinking, as well as one or more important contextualizations of these foundations. Plenary Sessions are led by a Senior Fellow of the Foundation for Critical Thinking; all participants are invited and encouraged to attend.

2. *Focal Sessions* that are designed to foster deeper understanding of core critical thinking concepts and principles, and to contextualize these principles within important domains. These sessions are led by Fellows and Scholars of the Foundation for Critical Thinking.

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

4. *Film and Video Continuous Loop*, highlighting the thinking of Richard Paul. Video includes classic footage of Richard Paul exploring the importance of critical thinking to education. Watch videos in the reception hall of the AP Auditoria before, between, and after sessions. Tuesday - Thursday.

## Conference at a Glance

### Tuesday, June 4

#### Opening Ceremony

8:30 a.m. - 10:00 a.m.

Opening Ceremony and  
Keynote Address for all attendees

- Developing Intellectual Character in Teaching and Learning–  
**Linda Elder and Gerald Nosich,**  
**Senior Fellows**

*Room: AP 01.30: Jean Monnet  
(AP Auditoria)*

#### Focal Session I & Plenary Session I: 10:30 a.m. - 12:00 p.m.

- **Plenary Session:**  
Understanding Critical Thinking  
Criteria as Essential to Educating  
the Mind in Any Field of Study  
and at Every Level–  
[Gerald Nosich](#)  
*Room: AP 01.30*
- **Focal Session for Returning  
Attendees:**  
Understanding the Importance  
of Dialogical and Dialectical  
Reasoning in Human Life,  
and How They Are Essential to  
Advancing Intellectual Character–  
[Carmen Polka](#)  
*Room: AV 91.20*

### Tuesday, June 4 cont.

#### Focal Sessions II:

1:30 p.m. - 4:00 p.m.

- Teaching Students How to Study  
and Learn: K-12 (Early Childhood  
through Secondary Education)–  
[Carmen Polka](#)  
*Room: AV 91.20*
- Placing Critical Thinking at the  
Core of Higher Education–  
[Gerald Nosich](#)  
*Room: SW 00.113*
- Using Tools of Critical Thinking  
to Improve Analysis in Business  
and Government– [Paul Bankes](#)  
*Room: AV 91.21*
- Advanced Session:  
Pursuing Your Questions at the  
Next Level– [Linda Elder](#)  
*Room: SW 02.05*

View Richard Paul video  
(looping) in the reception hall  
of the AP Auditoria before  
sessions begin each day,  
during breaks and lunch, and  
after the afternoon sessions.  
(Tuesday-Thursday)

## Conference at a Glance

### Wednesday, June 5

#### Focal Sessions III:

9:00 a.m. - 12:00 p.m.

- Illuminating for Students the Fundamental and Powerful Concepts Within Your Subject or Profession– [Gerald Nosich](#)  
*Room: SW 02.07*
- Understanding Robust Critical Thinking as Essential to Skilled Decision-Making and Problem Solving in Business and Government – [Paul Bankes](#)  
*Room: AV 91.21*
- Helping Your Students Learn to Reason Through Social, Political, and Environmental Issues Using the Tools of Critical Thinking– [Carmen Polka](#) and [Rachael Collins](#)  
*Room: SW 00.113*



### Wednesday, June 5 cont.

#### Focal Sessions IV:

1:30 p.m. - 4:00 p.m.

Conference registrants have chosen one of the following sessions:

- Teaching Students to Enjoy Writing Significant Papers in Your Courses– [Gerald Nosich](#)  
*Room: SW 02.07*
- Close Reading as Essential to Your Students' Future– [Carmen Polka](#)  
*Room: AV 91.20*
- Bringing Critical Thinking Across the Institution Through Long Term Commitment and the Use of Best Professional Development Practices– [Paul Bankes](#)  
*Room: AV 91.21*
- Critical Thinking and Classical Education: How the Two Are Intertwined and How Both are Essential to the Educated Person– [Linda Elder](#)  
*Room: SW 00.113*

View Richard Paul video (looping) in the reception hall of the AP Auditoria before sessions begin each day, during breaks and lunch, and after the afternoon sessions. (Tuesday-Thursday)



## Conference at a Glance

### Thursday, June 6

#### Concurrent Sessions

To choose Concurrent Sessions, see the Concurrent Session Program, page 37; choose one for each time slot.

#### Concurrent Sessions I:

8:30 a.m. - 9:20 a.m.

- 'Reframing' Your Course to Promote the Development of Critical Thinking Skills–  
[Myra H. Walters](#)  
*Room: AP 01.30*
- Bringing Critical Thinking into Every Communication Development Class– [Gary Rybold](#)  
*Room: SW 00.113*
- Strategy for Development and Assessment of Critical Thinking in Undergraduate Business Education– [Alina Zapalska](#)  
*Room: AV 91.20*
- How to Think Critically in Complex Environments: Lessons Learned From Actual Case Studies– [Kevin M. Smith](#)  
*Room: AV 91.21*
- Levels of Critical Thinking Skills Among Science and Humanities Students at Bethlehem University–  
[Walid Shomaly](#)  
*Room: SW 02.05*
- Critical Thinking Realized through Individualized Learning–  
[Susannah Johnson](#)  
*Room: SW 02.07*

### Thursday, June 6 cont.

#### Concurrent Sessions II:

9:40 a.m. - 10:30 a.m.

- Implementing Critical Thinking in Tertiary Education: Evaluation of Skills Development– [Tatiana Naaijer Ciff](#) and [Jacqueline Rietveld](#)  
*Room: AP 01.30*
- Decision-Forcing Cases: Using History and the Experience of Others to Engender Critical Thinking– [Shawn McCann](#) and [Damien O'Connell](#)  
*Room: SW 00.113*
- Using Critical Thinking as a Framework for Cultivating 'Organizational Intelligence' and Developing a Thinking Organization– [Richard King](#)  
*Room: SW 02.05*
- Critical Thinking and Circumstantial Evidence: Connecting the Dots Under the Light of the Judicial Doctrine and Evidential Analysis–  
[Francisco Badenes](#)  
*Room: SW 02.07*
- Improving Student Critical Thinking Through Direct Instruction in Rhetorical Analysis–  
[Lauren McGuire](#)  
*Room: AV 91.20*
- Teaching Critical Thinking In Language Based Instruction Through Socratic Questioning–  
[Meryem Boulkroun](#)  
*Room: AV 91.21*

## Conference at a Glance

### Thursday, June 6 cont.

#### Focal Session V & Plenary Session II: 10:40 a.m. - 11:50 a.m.

- **Plenary Session:**  
Fostering Emotional Intelligence in Teaching and Learning and Throughout Human Societies– [Linda Elder](#)  
*Room: AP 01.30*
- **Focal Session for Returning Attendees:**  
Sharing Your Insights from Years in Working with the Paul-Elder Framework– [Gerald Nosich](#)  
*Room: SW 00.113*

#### Roundtable Discussions

1:20 p.m. - 2:20 p.m.

*Room: AP 01.30*  
(see page 62 for details)

#### Concurrent Sessions III: 2:40 p.m. - 3:30 p.m.

- A Student Career Planning Program Aiming to Coach Students for Academic Success, Well-Being and Future Career Using Critical Thinking and Social-Emotional Tools in an International Course: Research and Best Practices– [Tatiana Naaijer Ciff](#)  
*Room: AP 01.30*

- Teaching Business Leaders to Think Critically– [Leigh Shamblin and Eileen Taylor](#)  
*Room: SW 00.113*
- The I'm W.O.K.E. Project: Widening Options through Knowledge and Empowerment– [Tonya Clarke, Ebony Lee, and Charlene Matthew](#)  
*Room: SW 02.05*
- Developing and Assessing Critical Thinking Skills in the Civil Engineering Program– [Alina Zapalska](#)  
*Room: AV 91.20*
- Sweeten Students' Toil of Critical Thinking when Preparing a PowerPoint Presentation– [Danuta Furszpaniak](#)  
*Room: AV 91.21*
- Cultivating Critical Thinking Through Self-Awareness: The Monitoring Mechanism Model of Behavior– [Paula DeFranco](#)  
*Room: SW 02.07*

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(Tuesday-Thursday)

## Conference at a Glance

### Thursday, June 6 cont.

#### Concurrent Sessions IV:

3:40 p.m. - 4:30 p.m.

- An Inquiry Task and Rubric Design for Fostering Fairminded Critical Thinking and Civilized Discussions Regarding Social Issues Toward the Public Good–  
[Luis Fernando Santos Meneses](#)  
*Room: AP 01.30*
- A Skills-Based Course that Significantly Increased Critical Thinking Skills in Pharmacy Students– [Catherine J. Cone](#)  
*Room: SW 00.113*
- Critical Thinking at Modern University Learning Centers: A Practical Tool– [Elana Geller](#)  
*Room: AV 91.20*
- Primary Teachers' Perceptions about and Methods to Promote Students' Critical Thinking Skills–  
[Loredana Lombardi](#)  
*Room: AV 91.21*
- A Pedagogical Tool to Explicitly Teach Critical Thinking Using Literature in English Language Classes– [Sindhu Joseph](#)  
*Room: SW 02.05*
- Mastering Content One Cognitive Level at a Time in the 6th-12th Grade [Secondary Education] Science Classroom– [Kristi Stuller and Tammy Neal](#)  
*Room: SW 02.07*

### Friday, June 7

#### Focal Sessions VI:

9:00 a.m. - 12:00 p.m.

- Helping Students Come to Terms with Their Bad Habits that Impede Learning– [Carmen Polka](#)  
*Room: AV 91.20*
- Critical Thinking as Essential to Reasoning Through Ethical Issues–  
[Linda Elder](#)  
*Room: SW 02.05*
- Socratic Questioning Through the Tools of Critical Thinking–  
[Gerald Nosich](#)  
*Room: SW 00.113*
- Cultivating Intellectual Character in Business and Government for a More Rational World–  
[Paul Banks](#)  
*Room: AV 91.21*

### Closing Session for All Attendees

*Where Do We Go from Here?*

1:30 p.m. - 4:00 p.m.

*Room: AP 01.30*

- Moving Forward with a More Powerful Design for Fostering Critical Thinking on a Typical Day– [the Fellows of the Foundation for Critical Thinking and Scholars](#)  
All conference participants are invited.

## Daily Schedule

### Tuesday, June 4

7:30 a.m. - 8:30 a.m.	Registration & Check-In
8:30 a.m. - 10:00 a.m.	Opening Ceremony and Keynote Address
10:00 a.m. - 10:30 a.m.	Break
10:30 a.m. - 12:00 p.m.	Focal Session I or Plenary Session I
12:00 p.m. - 1:30 p.m.	Lunch
1:30 p.m. - 2:45 p.m.	Focal Sessions II begin
2:45 p.m. - 3:00 p.m.	Break
3:00 p.m. - 4:00 p.m.	Focal Sessions II continue

*View Richard Paul video (looping) in the reception hall of the AP Auditoria before sessions begin each day, during breaks and lunch, and after the afternoon sessions. (Tuesday-Thursday)*





## Daily Schedule cont.

### Wednesday, June 5

9:00 a.m. - 10:30 a.m.	Focal Sessions III begin
10:30 a.m. - 10:45 a.m.	Break
10:45 a.m. - 12:00 p.m.	Focal Sessions III continue
12:00 p.m. - 1:30 p.m.	Lunch
1:30 p.m. - 2:45 p.m.	Focal Sessions IV begin
2:45 p.m. - 3:00 p.m.	Break
3:00 p.m. - 4:00 p.m.	Focal Sessions IV continue

### Thursday, June 6

Concurrent Sessions. To choose Concurrent Sessions, see the Concurrent Session Program on page 37.

8:30 a.m. - 9:20 a.m.	Concurrent Sessions I
9:20 a.m. - 9:40 a.m.	Break
9:40 a.m. - 10:30 a.m.	Concurrent Sessions II
10:30 a.m. - 10:40 a.m.	Break
10:40 a.m. - 11:50 a.m.	Focal Session V or Plenary Session II
11:50 a.m. - 1:20 p.m.	Lunch
1:20 p.m. - 2:20 p.m.	Roundtable Discussions
2:20 p.m. - 2:40 p.m.	Break
2:40 p.m. - 3:30 p.m.	Concurrent Sessions III
3:30 p.m. - 3:40 p.m.	Break
3:40 p.m. - 4:30 p.m.	Concurrent Sessions IV

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## Daily Schedule cont.

### Friday, June 7

9:00 a.m. - 10:30 a.m.	Focal Sessions VI begin
10:30 a.m. - 10:45 a.m.	Break
10:45 a.m. - 12:00 p.m.	Focal Sessions VI continue
12:00 p.m. - 1:30 p.m.	Lunch
1:30 p.m. - 2:45 p.m.	Closing Session begins
2:45 p.m. - 3:00 p.m.	Break
3:00 p.m. - 4:00 p.m.	Closing Session continues



## Plenary and Focal Session Presenters

### Senior Fellows of the Foundation for Critical Thinking



Dr. Linda Elder is an educational psychologist and an international authority on critical thinking. She has been President of the Foundation for Critical Thinking and Executive Director of the Center for Critical Thinking for 25 years. Dr. Elder has taught both psychology and critical thinking at the college level, and has given presentations to more than 50,000 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.



Dr. Gerald Nosich is a prominent authority on critical thinking, and has given more than 250 national and international workshops on the subject. He has worked with the U.S. Department of Education on a project for the National Assessment of Higher Order Thinking skills, served as the Assistant Director of the Center for Critical Thinking, and has been featured as a Noted Scholar at the University of British Columbia. He is Professor Emeritus at both SUNY Buffalo State and the University of New Orleans. He is the author of two books including *Learning to Think Things Through: A Guide to Critical Thinking Across the Curriculum*.

Elder and Nosich are first-generation Paulian Scholars; each studied directly with Richard Paul for more than 20 years. The works of Paul, Elder, and Nosich are translated into many languages world-wide, including Chinese, Japanese, Turkish, Korean, French, German, Arabic, Spanish, Thai, Greek, and Polish.

## **Focal Session Presenters**

### **Scholars of the Foundation for Critical Thinking**



Ms. Carmen Polka has worked diligently to infuse critical thinking into her classroom instruction, curriculum, and assessment for more than eighteen years. Focused on transforming education through implementation of quality instructional practices, Ms. Polka instigated and co-authored the Colorado Academic State Standards targeting research and reasoning based on the Paul-Elder framework. As a leader and critical thinking expert in her district, she led professional development and coached K-12 teachers to effectively utilize Paulian theory.

Ms. Polka is currently a principal at an elementary school, as well as a Doctoral candidate in the Educational Leadership and Policy Studies program at the University of Northern Colorado. She is also a licensed K-12 Special Education teacher.



For more than eighteen years, Dr. Bankes has played an important leadership role in fostering the Paulian conception of critical thinking in multiple school districts. As a principal, he led the implementation of this critical thinking approach to bring about state-recognized levels of achievement in three different Title I schools – a high school, a middle school, and an elementary school. He helped author the reasoning portion of the Colorado Academic Standards that are based on the Paul-Elder framework. In addition to his administrative experience, Dr. Bankes was an elementary school teacher, continues teaching critical thinking courses at the college level, and is currently serving as a Director on his School Board of Education.



## **Focal Session Presenters, cont.**

### **Scholars of the Foundation for Critical Thinking**



Ms. Rachael Collins has served over five years as Executive Assistant to the President at the Foundation for Critical Thinking. A junior scholar at the Foundation, she has studied the Paul-Elder Approach directly with Drs. Linda Elder and Gerald Nosich, and also had the opportunity to learn from Dr. Richard Paul near the end of his life. She has presented multiple Concurrent Sessions at the Annual International Conference on Critical Thinking, and serves as a critical thinking mentor and teaching assistant under the supervision of Dr. Elder. Ms. Collins is currently earning a degree in psychology.



## Plenary and Focal Sessions

All conference delegates and attendees have registered for their choices from the following sessions. See your confirmation sheet (in your packet) if you are unclear as to which Focal and/or Plenary Sessions you have selected. Please attend only the sessions you chose in advance, as room assignments have been determined based on enrollment totals for each session. If any problems arise, please see us at the Help & Information desk.

### Tuesday Plenary and Focal Session Descriptions

#### **Focal Session I and Plenary Session I (10:30 a.m. – 12:00 p.m.)**

***Plenary Session: Understanding Critical Thinking Criteria as Essential to Educating the Mind in Any Field of Study and at Every Level... Dr. Gerald Nosich***

*Room: AP 01.30: Jean Monnet (AP Auditoria)*

Students learn content within any subject only to the extent that they learn to think through that subject, but they can't just use their own thinking. They must 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, then apply them over and over again to problems and issues as they think through content. In short, they can't just learn about critical thinking in an abstract way; they need to apply it to their learning (and, ultimately, to every domain of human life).

This plenary session, led by one of the world's leading authorities on critical thinking, focuses on the understanding that to become a skilled learner is to become a self-directed, self-disciplined, self-monitored, and self-corrective thinker, one 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.

## Tuesday Plenary and Focal Session Descriptions Continued

### **Focal Session for Returning Attendees: Understanding the Importance of Dialogical and Dialectical Reasoning in Human Life, and How They Are Essential to Advancing Intellectual Character... Ms. Carmen Polka**

*Room: AV 91.20: 1st Floor, Room 20 (Auditorium complex)*

When people discuss their ideas, beliefs, or points of view with one another; when people role-play the thinking of others; when people listen carefully to the thoughts of others and try to make sense of them; when people must arrange their thoughts, whether orally or in writing, in such a fashion as to be understood by others – they are reasoning *dialogically*.

When, as the result of a trial, a juror comes to a verdict of guilty or innocent; when, as a result of a political debate, a citizen decides to vote for one candidate or another; when, as a result of hearing various sides of an argument, one becomes persuaded that one side is more justified and accurate than the others – one is reasoning *dialectically*.

Dialogical and dialectical thinking involve dialogue or extended exchange between different points of view or frames of reference. Both are multilogical (involving many logics) rather than monological (involving only one logic) because in both cases there is more than one line of reasoning to consider, more than one 'logic' being formulated. Dialogue becomes dialectical when ideas or reasonings come into conflict with each other and we need to assess their various strengths and weaknesses.

Unfortunately, in today's societies, most people – including teachers, students, politicians, and professionals in all fields of study – are largely unpracticed in dialogical and dialectical reasoning, because these forms of reasoning are largely missing from classrooms and throughout society. This session will focus on understanding these forms of reasoning, and will help participants enhance their abilities to bring them effectively into their disciplines, professions, work with students, and beyond. In this session we will work through parts of Richard Paul's seminal article, entitled, 'Dialogical and Dialectical Thinking.'

This session presupposes command of the Paul-Elder approach to critical thinking. It is recommended only for those participants returning to the conference.

## Tuesday Plenary and Focal Session Descriptions Continued

### Focal Sessions II (1:30 p.m. – 4:00 p.m.)

#### Teaching Students How to Study and Learn: Elementary Through Secondary Education... Ms. Carmen Polka

*Room: AV 91.20: 1st Floor, Room 20 (Auditoriacomplex)*

Bringing critical thinking into the classroom entails understanding the concepts and principles embedded in critical thinking, then applying these concepts throughout the curriculum. It means developing powerful strategies that emerge when we take critical thinking seriously as a means for cultivating the intellects of our students at all levels.

In this session, we will focus on strategies for engaging the minds of all students throughout the K-12 educational experience using common critical thinking language. These strategies are powerful and useful, because each is a way to routinely engage students in thinking about what they are trying to learn as they are learning. Each one approaches students as thinkers who need to learn to reason their way through ideas using their best thinking if they are to realize their capacities as developing persons. These strategies offer students methods for appropriately analyzing and assessing the ideas they are exposed to in the schooling process, and suggest ways of teaching students how to do the (often) hard work of learning. Each critical thinking process represents a shift of responsibility for learning from teacher to student, which is necessary if students are to take command of their minds.

#### Placing Critical Thinking at the Core of Higher Education... Dr. Gerald Nosich

*Room: SW 00.113: Raadzaal (SW Faculty of Social Sciences Building)*

A key insight into content, and into thinking, is that all content represents a distinctive mode of thinking. Math becomes more intelligible as one learns to think mathematically. Biology becomes more intelligible as one learns to think biologically. History becomes more intelligible as one learns to think historically. This is true because all subjects are generated by thinking, organized by thinking, analyzed by thinking, synthesized by thinking, expressed by thinking, evaluated by thinking, restructured by thinking, maintained by thinking, transformed by thinking, learned by thinking, understood by thinking, and applied by thinking. If you try to take the thinking out of content, you have only empty words remaining, for it is thinking itself, on the part of the student, that gives life to content.

Learning a unique system of ideas is the key to learning any content whatsoever. In this session, we will explore the intimate relationship between

## Tuesday Plenary and Focal Session Descriptions Continued

content and thinking, and will argue for the importance of placing critical thinking concepts and principles at the very heart of teaching and learning in higher education.

### Using Tools of Critical Thinking to Improve Analysis in Business and Government... Dr. Paul Banks

*Room: AV 91.21: 1st Floor, Room 21 (Auditorium complex)*

Can we deal with incessant, accelerating change and complexity without revolutionizing our thinking? Traditionally, our thinking has been designed for routine, habit, and rule-bound procedures. Not long ago, we learned how to do our jobs, and then we used what we learned over and over in performing those jobs. But the problems we now face, and will increasingly face, require a radically



different form of thinking: thinking that is more complex, more adaptable, and more sensitive to divergent points of view. The world in which we now live requires that we continually relearn, that we routinely rethink our decisions, and that we regularly reevaluate the way we work and live. In short, there is a new world facing us – one in which the power of the mind to command itself, to regularly engage in

self-analysis, will increasingly determine the quality of our work, the quality of our lives, and perhaps our very survival.

As you work through this session, you will begin to understand some of the most fundamental concepts critical thinkers use on a daily basis, for it is through analyzing thinking that critical thinking occurs. To analyze thinking, we must be able to take it apart and scrutinize how we are using each part. When we clearly understand the parts of thinking (or elements of reasoning), and we begin to use them explicitly in our thinking on a daily basis, the quality of our work significantly improves.

This session will help business, government, and education leaders:

- begin to internalize the foundational concepts and principles implicit in a substantive conception of analytic thinking;
- better use analytic thinking as a tool for thinking deeply about the questions, issues, and challenges they face in their work.

## Tuesday Plenary and Focal Session Descriptions Continued

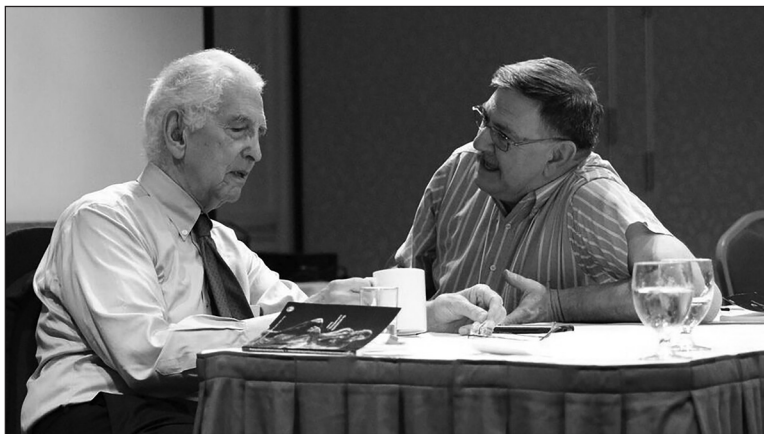
### **Advanced Session: Pursuing Your Questions at the Next Level...**

**Dr. Linda Elder**

*Room: SW 02.05: 2nd Floor, Room 5 (SW Faculty of Social Sciences Building)*

Most people who begin to learn the tools of critical thinking stop learning before they have a chance to really internalize, and therefore use, these intellectual tools. However, a few go on to take the theory and application of critical thinking to deeper levels. This session is designed for conference attendees who have worked with us before, at previous conferences or at their institutions in professional development, and are ready to go further *through pursuing answers to their own questions*.

Thinking is driven by questions. The best thinkers generate and pursue deep questions that lead them to fruitful ways of thinking and higher ways of living. This session, led by an international authority on critical thinking today, will focus on your deeper questions. Dr. Elder will help you develop improved lines of inquiry so you can explore, at a more advanced level, the concepts and principles embedded in a robust conception of critical thinking. Be prepared to articulate and pursue your important questions.



Daniel Elsberg and Gerald Nosich at the 35th Conference.

## Wednesday Focal Session Descriptions

### Focal Sessions III (9:00 a.m. – 12:00 p.m.)

#### **Illuminating for Students the Fundamental and Powerful Concepts Within Your Subject or Profession... Dr. Gerald Nosich**

*Room: SW 02.07: 2nd Floor, Room 7 (SW Faculty of Social Sciences Building)*

Concepts are ideas we use in thinking. They enable us to group things in our experience into different categories, classes, or divisions. They form the basis 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 of our decisions depend on how we conceptualize things, and all subjects or disciplines are defined by their foundational concepts. For instance, a fundamental concept in ecology is *ecosystem*, defined as a group of living things dependent on one another and living in a particular habitat. Ecologists study how differing ecosystems function and how they interrelate with other ecosystems. They are concerned with *ecological succession* – the natural pattern of change occurring within every ecosystem when natural processes are undisturbed. This pattern includes the birth, development, death, and then replacement of ecological communities. Ecologists have grouped communities into larger units called *biomes*, regions throughout the world classified according to physical features, including temperature, rainfall, and type of vegetation. Each of these is a seminal concept that cannot merely be seen (or memorized) as just one of many equally important details, but as fundamental for thinking one's way through virtually any ecological issue, such as *imbalance, energy, nutrients, population growth, diversity, habitat, competition, predation, parasitism, adaptation, coevolution, and conservation*.

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



## Wednesday Focal Session Descriptions Continued

### Understanding Robust Critical Thinking as Essential to Skilled Decision-Making and Problem-Solving in Business and Government... Dr. Paul Banks

*Room: AV 91.21: 1st Floor, Room 21 (Auditoriacomplex)*

There are multiple dimensions of effective problem-solving and decision-making. For instance, by using one powerful set of critical thinking tools – the elements of reasoning – as our guide, we can identify at least nine dimensions that represent potential problems and opportunities for thought. These dimensions do not define a procedure that can be followed mindlessly or mechanically; rather, they presuppose good judgment and sound thinking in every dimension.

To be an effective and rational decision-maker:

To what extent could I test the truth of this claim by direct experience?

1. Figure out, and regularly articulate, your most fundamental goals, purposes, and needs. Your decisions should help you remove obstacles and create opportunities to reach your goals, achieve your purposes, and satisfy your needs.
2. Whenever possible, take problems and decisions one by one. State the situation and formulate the alternatives as clearly and precisely as you can.
3. Study the circumstances surrounding the alternative possible decisions to make clear the kind of decision you are dealing with. Figure out what implications follow from the various possible alternatives before you. Differentiate decisions over which you have some control from decisions that seem forced on you. Concentrate your efforts on the most important decisions and those on which you can have the most impact.
4. Figure out what information you need, and actively seek that information.
5. Carefully analyze and interpret the information you collect, drawing what reasonable inferences you can.
6. Figure out your options for action. What can you do in the short term? In the long term? Recognize explicitly your limitations in money, time, power, etc.
7. Evaluate your options in the situation, taking into account their advantages and disadvantages.
8. Adopt a strategic approach to the decision, and follow through on that strategy. This may involve direct action or a wait-and-see strategy that is carefully thought through.
9. When you act, monitor the implications of your actions as they begin to emerge. Be ready to revise your strategy at a moment's notice if the situation requires. Be prepared to shift your strategy, your analysis, your

## Wednesday Focal Session Descriptions Continued

statement of the kind of decision, or all three as more information becomes available to you.

In this session, we will explore these abilities and how they can best be employed for effective problem-solving and decision-making in business, government, and all areas of administration.

### **Helping Your Students Learn to Reason Through Social, Political, and Environmental Issues Using the Tools of Critical Thinking... Ms. Carmen Polka and Ms. Rachael Collins**

*Room: SW 00.113: Raadszaal (SW Faculty of Social Sciences Building)*

To what extent is it possible to realize and advance fairminded critical thinking in education, given today's political and societal climates? Throughout the world, both in schools and in human societies more generally, significant political forces impede the cultivation of substantive critical thinking. This session will provide principles and strategies for helping students learn to reason through social, political, and environmental issues – issues often fraught with controversy, about which there is much unreliable “information” and irrational “commentary,” and which therefore demand more diligent application of critical thinking skills. Participants will think their way through several complex and important problems facing human societies today, using the tools of critical thinking.



## Wednesday Focal Session Descriptions continued

### Focal Sessions IV (1:30 p.m. – 4:00 p.m.)

#### Teaching Students to Enjoy Writing Significant Papers in Your Courses... Dr. Gerald Nosich

*Room: SW 02.07: 2nd Floor, Room 7 (SW Faculty of Social Sciences Building)*

Educated persons skillfully, routinely engage in substantive writing. Substantive writing consists of focusing on a subject worth writing about, and then saying something worth saying about it. It also enhances our reading: whenever we read to acquire knowledge, we should write to take ownership of what we are reading. Furthermore, just as we must write to gain an initial understanding of a subject's primary ideas, so also must we write to begin thinking within the subject as a whole and making connections between ideas within and beyond it.

Quite remarkably, many students have never written in a substantive way. Instead, they have developed the habit of getting by – often while receiving passing or even high marks from their instructors – with superficial and impressionistic writing which only obscures the purpose of writing itself. The lack of connection between the writing assignments students complete and the way in which writing can be used to enrich their learning and lives can leave them resistant to, or dreadful of, their next assigned paper.

This session will explore ways of developing student abilities in substantive writing as a means for fulfilling, deep learning, which should also be enjoyable as an interrelated set of skills.

#### Close Reading as Essential to Your Students' Future... Ms. Carmen Polka

*Room: AV 91.20: 1st Floor, Room 20 (Auditoria complex)*

Educated persons are skilled at, and routinely engage in, close reading. When reading, they seek to learn from texts. They generate questions as they read, and they seek answers to those questions by reading widely and skillfully. In short, they seek to become better educated through reading. They do this through the process of intellectually interacting with the texts they read, while they are reading. They come to understand what they read by paraphrasing, elaborating, exemplifying, and illustrating it. They make connections as they read. They evaluate as they read. They bring important ideas into their thinking as they read.

Many of our students have never read a text closely. Instead, they have developed the habit of skirting by with superficial and impressionistic reading. This session will therefore explore basic, foundational processes for

## Wednesday Focal Session Descriptions continued

developing student skills in close reading. The aim is for these processes to become internalized and used throughout life as powerful tools for continual development.

### **Bringing Critical Thinking Across the Institution Through Long-Term Commitment and the Use of Best Professional Development Practices...** **Dr. Paul Bankes**

*Room: AV 91.21: 1st Floor, Room 21 (Auditorium complex)*

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; redefining faculty as learners as well as teachers; and assessing students, faculty, and the institution as a whole in terms of critical thinking abilities and traits. We then realize that robust critical thinking should be the guiding force for all of our educational efforts.



This session focuses on the importance of placing critical thinking foundations at the core of teaching and learning at all levels of the institution, and presents a professional development model that can provide the vehicle for deep change across the institution.

## Wednesday Focal Session Descriptions continued

### **Critical Thinking and Classical Education: How the Two Are Intertwined and How Both Are Essential to the Educated Person... Dr. Linda Elder**

*Room: SW 00.113: Raadssaal (SW Faculty of Social Sciences Building)*

One way of deepening our understanding of critical thinking and its role in history is to routinely and systematically interrelate explicit critical thinking concepts and principles with transformative ideas developed by deep thinkers throughout history. Many students have no real understanding of the important and essential ideas that have been developed by significant thinkers in history, nor do most students know how to access or assess classic texts. In this session, we will consider the works of a few distinguished thinkers throughout history and discuss how these thoughts interrelate, as well as how they connect with the conceptual tools in critical thinking.



## Thursday Plenary and Focal Session Descriptions

### Focal Session V and Plenary Session II (10:40 a.m. – 11:50 a.m.)

**Plenary Session: Fostering Emotional Intelligence in Teaching and Learning and Throughout Human Societies... Dr. Linda Elder**

*Room: AP 01.30: Jean Monnet (AP Auditoria)*

Critical thinking provides the crucial link between intelligence and emotions in the 'emotionally intelligent' person. It is the only plausible vehicle by means of which we can bring intelligence to bear upon our emotional lives, and enables us to take active command of not only our thoughts, but our emotions and desires as well. Hence, neither teaching nor learning can afford to disregard the emotional dimension of the mind.



If we are concerned with developing our rationality in order to improve our lives, we must understand the powerful role that both emotions and thoughts play in our minds. We must understand the ways in which affect and cognition influence one another in determining both our outlook on life and our behavior. Most importantly, we must come to terms with those truths about the human mind that enable us to begin the process of taking charge of our minds: that thoughts and emotions are inextricably bound, that we have both irrational and rational tendencies, that our inner conflicts are never best understood as a simple matter between emotion and reason, that self-command of mind requires both extended education and self-discipline, that our fullest rational development is dependent on the development of rational affect, and that to bring intelligence to bear upon emotions, we must take charge of the thinking underlying those emotions.

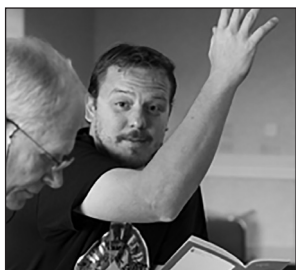
## Thursday Focal Session Descriptions continued

### ***Focal Session for Advanced Attendees: Sharing Your Insights from Years in Working with the Paul-Elder Framework... Dr. Gerald Nosich***

*Room: SW 00.113: Raadszaal (SW Faculty of Social Sciences Building)*

It is one thing to begin learning critical thinking, and another thing to commit to internalizing it through years of application. Those who do the latter are rare, but our annual international conference offers returning, committed delegates a special opportunity to connect, to discuss deepening knowledge on how best to use the tools of criticality to reach students or others we work with, and to commiserate and empathize with one another on our mixed experiences in both our own learning and our interactions with others.

This session is designed for those conference attendees who have worked with us before in some capacity – at prior conferences or academies, at their institutions in professional development workshops, through our online courses, etc. – and who would like to share the insights they’ve developed through years of working with the Paul-Elder Framework, under the guidance of Dr. Nosich, who will add his breadth and depth of experience.





## Friday Focal Session Descriptions

### Focal Sessions VI (9:00 a.m. – 12:00 p.m.)

#### Helping Students Come to Terms with Their Bad Habits that Impede Learning... Ms. Carmen Polka

*Room: AV 91.20: 1st Floor, Room 20 (Auditorium complex)*

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, nor that many of these attitudes and behaviors are habitual. Most students have little understanding of how their bad habits of thought affect their learning, and hence their long-term futures. It is therefore important for students to deeply explore and probe the habits of mind that impede their learning. For instance, 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 behaviors. Students can then use these understandings to uncover their own particular dysfunctional patterns of thought.



This session, then, will focus on helping students understand the bad habits of thought common to all humans, so they can begin to see how their own habitual attitudes and behaviors serve as formidable barriers to self-development and self-realization.

The Distinguished Scholars Lecture was given by Elizabeth Loftus at the 33rd Conference.



## Friday Focal Session Descriptions continued

### Critical Thinking as Essential to Reasoning Through Ethical Issues...

**Dr. Linda Elder**

*Room: SW 02.05: 2nd Floor, Room 5 (SW Faculty of Social Sciences Building)*

Few have thought much about the difficulty of getting ethically relevant facts about the world, few are skilled in tracing the implications of the facts they do have, and few can identify their own moral contradictions or clearly distinguish their self-interest and egocentric desires from what is genuinely ethical. Few have thought deeply about their own ethical feelings and judgments, have tied these judgments together into a coherent ethical perspective, or have mastered the complexities of ethical reasoning. As a result, everyday ethical judgments are often a subtle mixture of pseudo- and genuine morality, ethical insight and moral prejudice, ethical truth and moral hypocrisy.

The proper role of ethical reasoning is to highlight acts of two kinds: those that enhance the well-being of others, and those that harm or diminish the well-being of others. Developing one's ethical reasoning abilities is crucial, because there is in human nature a strong tendency toward egotism, prejudice, self-justification, and self-deception. These tendencies are exacerbated by powerful sociocentric cultural influences that shape our lives – not the least of which is the mass media. These innate tendencies can be actively combated only through the systematic cultivation of fairminded critical thinking. In other words, ethical questions must be answered by the same means as all questions of judgment: by using explicit tools of reasoning to analyze information and ideas, and to evaluate them for their accuracy, precision, breadth, depth, fairness, and so forth.

This session will illuminate ethical reasoning as distinct from other forms of reasoning with which it is often confused – namely, social conventions and taboos, religious belief systems, and the law. With this set of distinctions clearly in mind, students are able to determine at any given time whether and to what extent they are dealing with any one of them (which is necessary for properly reasoning through the question), and they will be better able to distinguish ethical questions from other types of questions with which they are often jumbled.

## Friday Focal Session Descriptions continued

### Socratic Questioning Through the Tools of Critical Thinking...

**Dr. Gerald Nosich**

*Room: SW 00.113: Raadzaal (SW Faculty of Social Sciences Building)*

Socratic questioning is disciplined questioning that can be used to pursue thought in many directions and for many purposes, including exploring complex ideas, getting to the truth of things, opening up issues and problems, uncovering assumptions, analyzing concepts, distinguishing what we know from what we don't know, and following out logical implications of thought. The key to distinguishing Socratic questioning from questioning per se is that Socratic questioning is systematic, disciplined, and deep; it usually focuses on foundational concepts, principles, theories, issues, or problems.

Teachers, students, professionals, government officials, and, indeed, anyone interested in probing thinking at a deep level should become skilled in constructing Socratic questions and engaging in Socratic dialogue. The art of Socratic questioning is intimately connected with critical thinking, because the art of questioning is indispensable to excellence of thought. Both critical thinking and Socratic questioning share a common end. Critical thinking provides the conceptual tools for understanding how the mind functions in its pursuit of meaning and truth; Socratic questioning employs those tools in framing questions essential to the pursuit of meaning and truth.

This session will introduce the methodology of Socratic dialogue and its relationship with the language and tools of critical thinking, and will be interactive as participants briefly practice Socratic questioning using the

foundations of critical thinking.



## Friday Focal Session Descriptions continued

### **Cultivating Intellectual Character in Business and Government for a More Rational World... Dr. Paul Bankes**

*Room: AV 91.21: 1st Floor, Room 21 (Auditoriacomplex)*

It is possible to develop as a thinker, and yet not to develop as a fairminded thinker. It is possible to learn to use one's mental skills in a narrow, self-serving way, and many highly skilled thinkers do just that. Think of politicians, for example, who manipulate people through smooth (fallacious) talk, who promise what they have no intention of delivering, and who say whatever they need to maintain their positions of power and prestige. In a sense, these people are skilled thinkers because their thinking enables them to get what they want. But the best thinkers do not pursue selfish goals. They do not seek to manipulate others. They strive to be fairminded, even when it means they have to give something up in the process. They recognize that the mind is not naturally fair, but selfish. And they recognize that to be fairminded, they also must develop specific traits of mind – traits such as intellectual humility, intellectual integrity, intellectual courage, intellectual autonomy, intellectual empathy, intellectual perseverance, and confidence in reason.



In this session, we juxtapose the fairminded critical thinker with the selfish thinker, and we develop our understanding of how all the intellectual virtues are essential to strong-sense, or ethical, critical thinking. If you are to cultivate fairminded critical thinking within your organization, you will first need a reasonable conception of it, and then a plan for bringing it to your circle of influence. This session, therefore, will enhance your understanding of the intellectual virtues and why they are essential to fairminded critical societies, businesses, and government entities; this session will also help you develop a plan for implementing fairminded critical thinking within your work community.

## Concurrent Sessions Program

### Thursday, June 6

Concurrent Sessions are presented by attendees who are attempting to foster critical thinking in teaching, learning, work, or any other aspect of life, or who wish to share research related to critical thinking. Choose one Concurrent Session to attend in each time slot.

#### Schedule Overview:

8:30 a.m. – 9:20 a.m.	Concurrent Sessions I
9:40 a.m. – 10:30 a.m.	Concurrent Sessions II
2:40 p.m. – 3:30 p.m.	Concurrent Sessions IV
3:40 p.m. – 4:30 p.m.	Concurrent Sessions V

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### Concurrent Sessions I

(8:30 a.m. – 9:20 a.m.)

#### [‘Reframing’ Your Course to Promote the Development of Critical Thinking Skills](#)

**Myra H. Walters**

Communication Faculty

Coordinator of Professional Development and Faculty Engagement

Florida SouthWestern State College

Florida

*Room: AP 01.30*

Upon reading article after article suggesting that educators teach critical thinking skills to a generation of students who have not acquired these skills, my natural response was to panic and think about how I would teach these skills in addition to focusing on the mandated student learning outcomes in my course. After attending two conferences sponsored by the Critical Thinking Foundation, attending a workshop facilitated by one of the Foundation Fellows and after attending countless critical thinking workshops facilitated by my college colleagues, I came to the realization that many of my colleagues shared my concern. We subscribed to the belief that in order to provide instruction on critical thinking we would need to add new content into our already packed courses.

## Concurrent Sessions Continued

After years of making adjustments to my course curriculum to promote critical thinking skills, I have learned that it is really more about “reframing” the course content and assignments we already teach and use. After years of attempting to infuse the development of critical thinking skills into my public speaking course, I have finally incorporated critical thinking instruction and the instruction of my course content into a seamless integration. Finally, promoting critical thinking skills in my course does not feel like a forced addition, but a carefully orchestrated dance.

In this workshop, I will discuss how to “Reframe” your course to promote critical thinking skills by explaining how I revised my own public speaking course. Participants will then be lead through an activity where they can practice applying the steps to “reframe” their course content to promote the development of critical thinking skills in the courses they teach.

### Bringing Critical Thinking into Every Communication Development Class

**Gary Rybold**

Chair: Department of Communication Studies  
Irvine Valley College  
California

*Room: SW 00.113*

This presentation will explain the Irvine Valley College Project Pedagogy. This pedagogy substantially increases the quality and quantity of speeches. In the IVC project, students use critical thinking concepts to assess their own work and the work of others. Students will give between 15-20 speeches, write 25 pages, read 40 pages per week, and assess the work of other students, using critical thinking concepts, over 100 times.



## Concurrent Sessions Continued

### Strategy for Development and Assessment of Critical Thinking in Undergraduate Business Education

**Alina Zapalska**

Professor of Economics: Management Department  
United States Coast Guard Academy  
Connecticut

*Room: AV 91.20*

The paper presents a strategy for advancing and assessing critical thinking skills in an undergraduate business program. The success of critical thinking development depends on the effectiveness of sequentially designed instruction as well as continuous assessment of critical thinking skills throughout all four years of the undergraduate program. This strategy of critical thinking development and assessment is based on a 21st Century Bloom's taxonomy that supports continuous and progressive development of critical thinking skills with a specially designed curriculum and an assessment instrument. The model, called a 21st Century Bloom's Taxonomy, guides students' work via six stages of critical thinking development and has been adopted successfully in an undergraduate program. The paper also argues that critical thinking assessment is more than testing students to provide grades, but it is a process that provides feedback about student learning and critical thinking advancement. Alignment of course activities and testing strategies with learning outcomes is critical to deliver an effective course design and an assessment process.

### How to Think Critically in Complex Environments: Lessons Learned From Actual Case Studies

**Kevin M. Smith**

Captain, U.S. Navy (Ret.)  
Colorado

*Room: AV 91.21*

Two landmark case studies will be presented. Both case studies involved the employment of advanced simulation, operational realism, and challenging scenarios. (Smith, Hammon), (Dorner). These important human performance studies revealed that:

- Much of what we thought we knew about human performance in complex environments turned out to be incorrect.
- Critical Thinking in general, and Higher-Order Reasoning in particular

## Concurrent Sessions Continued

were essential for mission success.

- Important considerations pertaining to Complexity Theory, Operational Decision Theory, and General Systems Theory were helpful.
- Formal training in Critical Thinking and Complex Problem Solving should be mandatory for all Operational Personnel exposed to Complex Environments.

This session will examine human performance in complex environments and ways to optimize such performance so as to ensure mission success.

### Levels of Critical Thinking Skills Among Science and Humanities Students at Bethlehem University

**Walid Shomaly**

Assistant Professor of Chemistry

Bethlehem University

Director

Palestinian Center for Research and Cultural Dialogue

West Bank, Palestine

*Room: SW 02.05*

This study aimed at examining levels of critical thinking skills for students at both the faculties of science and of Humanities at Bethlehem University (B.U).

After examining its psychometric characteristics, the researchers used California test 2000 to collect the data. A sample of 100 students (who comprise 9% of the total number of 1126 in these two faculties) were targeted, where the questionnaire of the California test for critical thinking was distributed to them to be completed. Results of the study reveal that the level of critical thinking for the targeted students is (32%) which is far below the acceptable average that is set to be 80%.

The study shows no statistical differences of significance of  $\geq \alpha \ 0.05$  according to variables of year of study, type of high school at BU (private versus public), or place of residence. However, the study reveals differences of statistical significance at the level of critical thinking according to the variables of gender (in favor of females), faculty (in favor of the science faculty), and specialty in high school in favor of science stream as opposed to humanities stream. The study also reveals differences of statistical significance at  $\geq \alpha \ 0.05$  according to the variable of the academic level in assessment in favor of freshmen students, and in induction in favor of junior students.

## Concurrent Sessions Continued

### Critical Thinking Realized through Individualized Learning

**Susannah Johnson**

Faculty

Assets High School

Owner

Individualized Realized

Hawaii

*Room: SW 02.07*

In the evolving role of educator, the current and future goal is to nurture stronger thinkers to live alongside in our global community. Through graduate work and two years of practical application in a coworking classroom, students are working explicitly and implicitly on critical thinking strategies that are threaded through 100% individualized curricula. This conversation will focus on examples of student work in a case study format that makes visible the processes and specific practices for critical thinking used in all facets of this style of learning:

- In the work - pre-thinking, planning, organizing thinking, assessments, and evidence of learning
- In thinking breaks and critique sessions
- In reflections & formative thinking criteria
- In the identification of weaknesses and using strengths of the individual to overcome thinking barriers or biases.

Together, we will walk through what it's like to employ these strategies and how it works, while learning from the student examples.





## Concurrent Sessions Continued

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### Concurrent Sessions II

(9:40 a.m. – 10:30 a.m.)

#### Implementing Critical Thinking in Tertiary Education: Evaluation of Skills Development

**Tatiana Naaijer Ciff**

Thesis Committee Member

Research Lecturer, Logical and Critical Thinking and Social-Psychology

Academy of International Business - Stenden University Leeuwarden

The Netherlands

**Jacqueline Rietveld**

Research Lecturer

Professor: Professionals in Business

Academy of International Business - Stenden University Leeuwarden

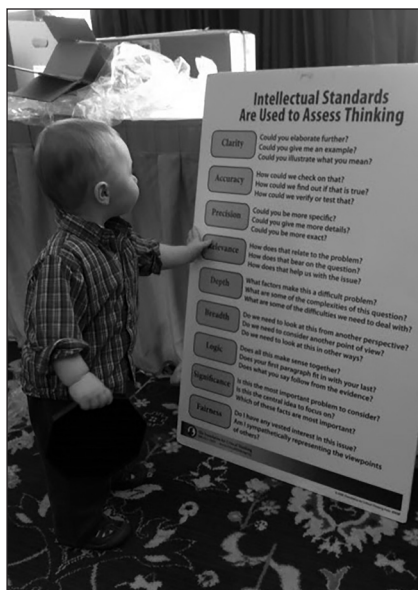
The Netherlands

*Room: AP 01.30*

In this session, the design, implementation, assessment and outcomes of a pre-posttest experiment with an experimental and control group design using as implementation tool Paul and Elder's (2014) model as presented in their book: Critical thinking: tools for taking charge of your professional and personal life will be presented. Paul and Elder's critical thinking model was introduced and experimented with in a minor for 3rd year students focusing on understanding and leading human behaviour in organisations at an Applied Sciences University in the North of the Netherlands. The goal of the experiment was to provide a one-term introduction to, and survey of, basic organizational behaviour concepts and their application in contemporary organizations. Critical thinking for personal and professional development, as presented by Paul and Elder, was a tool in itself. These concepts are value-driven and declared by the United Nations as sustainable development goals. Consequently, a course in organizational behaviour with a focus on different aspects and dimensions of human behaviour and interpersonal relations within organizations was designed. As assessment instrument, the validated Critical Thinking Basic Concepts and Understanding Test of the Foundation for Critical Thinking Org. was used. The hypothesis we formulated was inspired from Paul and Elder's (2014) claim, according to which,

## Concurrent Sessions Continued

if students are exposed and helped to internalise the intellectual traits, practising the standards of thinking with the goal of becoming fairminded thinkers, then, their level of thinking will improve positively, and they will experience positive personal and professional growth, which will eventually be reflected in their behaviours and attitudes. Therefore, in this session, the design, implementation, measurements, data collected (students' self-assessment and teacher's assessment of students), results and implications of the experiment, for participants and study programme will be presented and discussed.



## Concurrent Sessions Continued

### Decision-Forcing Cases: Using History and the Experience of Others to Engender Critical Thinking

**Shawn McCann**

Senior Scientist

Cognitive Performance Group  
Florida

**Damien O'Connell**

Historian and Case Facilitator  
Cognitive Performance Group  
Florida

*Room: SW 00.113*



Too often, debates, decision games, and other types of discussion turn to feelings-based assertions. This mistakenly encourages one to over-rely on intuition instead of the available data. Unfortunately, rarely does anyone change their mind when presented with data, as emotions and feelings tend to dominate our perspective. Critical thinking provides an antidote to this. It allows for the practice of perspective taking, empathy, and the application of the standards and elements of critical thinking. Using decision-forcing cases allows one to practice making decisions in a relatively safe environment. These cases—unlike case-based research, retrospective cases, and business cases—plunge participants into actual historical events using present-tense role-playing. Immersing the participants in the case, along with other facilitation methods, allows participants to take ownership of the problems posed and the decisions they make. At each decision point, the facilitator presents the problem and requires a decision. If a case features a co-facilitator, that person may take on roles like that of devil's advocate, a detective posing questions, or provide linkages between the participants contributions. The co-facilitator might also model the same critical thinking as expected of the participants, and to remind them of the process in an effort to prevent an uncritical argumentative session from ensuing. Facilitation techniques vary depending on the number of participants, their experience, and the desired learning outcomes. Examples include: small group discussion (conversational roles, chalk-talk, circular response), cold-calling, problem framing (and reframing), and written responses. The end result is the application of critical thinking in relative real-time.

## Concurrent Sessions Continued

### Using Critical Thinking as a Framework for Cultivating ‘Organizational Intelligence’ and Developing a Thinking Organization

**Richard King**

Principal

Thinking In Organisations

Australia

*Room: SW 02.05*

Organizations are often seen as monolithic and inflexible when viewed through a ‘thinking’ lens. The history of organizations is filled with examples of organizational failure due to a perceived lack of thinking. This session will start by outlining some of the key barriers to applying critical thinking in organizations. The session will then explore strategies through which critical thinking might be used as a framework for cultivating ‘organizational intelligence’ and developing more-effective ‘thinking organizations’. The session will be built around the Paul & Elder Framework for Critical Thinking.

### Critical Thinking and Circumstantial Evidence: Connecting the Dots Under the Light of the Judicial Doctrine and Evidential Analysis

**Francisco Badenes**

Federal Police Commissioner

Federal Police Department

Brazil

*Room: SW 02.07*

“Death Squads” in Brazil are composed of criminals working inside the Police Services, under the support of corrupted politicians and unscrupulous businessman, that usually kill their victims and hide their bodies in order to try to escape Justice.

An essential part of any no-body investigation and trial is to prove that the victim is dead and not just missing. Criminals that work inside the police services know the basic principles of an investigation process, so they usually try to hide the crime scene evidence. Also, besides proving that the victim is dead, we need to prove who killed him or her, and why (that usually links to political/business vested interests).

Following this idea, our investigative work should be supported by Judicial Doctrine which in cases like these relates to Circumstantial Evidence: “Different pieces of circumstantial evidence may be required, so that each corroborates the

## Concurrent Sessions Continued

conclusions drawn from the others. Together, they may more strongly support one particular inference over another.”

We need to demonstrate to the judge that the evidential analytical process was built under judicial doctrine and in the proper technical way. Also, the very special and dangerous environment of killings, and corruption on a high-level political scale, should be provided in connection with the development of intellectual virtues (courage, discipline, humility, perseverance, sense of justice) along with detecting fake planted that distort the investigation.

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

**Lauren McGuire**

Professor of English

Missouri Southern State University

Missouri

*Room: AV 91.20*

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 student critical thinking skills' performance.

Purposeful implementation of Dr. Richard Paul and Dr. Linda Elder's Elements of Thought, Intellectual Standards, and Socratic Questioning could strengthen students' perceptions of critical thinking and of their own critical thinking abilities. Educators can cultivate these intellectual traits by encouraging students to develop those skills necessary for clearly and logically evaluating the credibility and the reliability of rhetoric. Assuming that an argument can be any text - written, spoken, aural, or visual – that express a point of view, it is vitally important for educators to challenge students to consider new perspectives on topics they may feel they already understand and to provide practice for analyzing the sorts of arguments they will be assigned in their various courses. Implementing Paul and Elder's Elements of Thought, Intellectual Standards, and Socratic Questioning through direct instruction in rhetorical analysis could

## Concurrent Sessions Continued

encourage students to detect and evaluate the assumptions, ego-centrism, and socio-centrism in the rhetoric they are exposed to in literature, in the media, and in their own writing. Consistent application of Paul and Elder's Intellectual Standards provides students with the tools necessary for the acquisition of intellectual humility as they approach the complexities of life with clarity, accuracy, and precision; explore multiple perspectives of difficult problems; and learn to sympathetically acknowledge the viewpoints of others with breadth and clarity.

This session will focus primarily on designing instruction which integrates direct instruction in rhetorical analysis. Emphasis will be placed on incorporating Paul and Elder's Intellectual Standards and the Elements of Thought. Participants will work in small groups and will be offered instructional methodologies which encourage the evaluation of expository and argumentative discourse and which develop students' critical thinking, reading, and writing skills.

### Teaching Critical Thinking In Language Based Instruction Through Socratic Questioning

**Meryem Boulkroun**

Teacher-Researcher

L'Ecole Normale Supérieure - Assia Djébar- de Constantine  
Algeria

*Room: AV 91.21*

In the past, only the elite educational institutions placed emphasis on teaching higher order thinking skills (HOTS) in general, and critical thinking in particular. Today, many scholars advocate teaching HOTS; consequently, developing critical thinking has become a chief concern in higher education. In language classrooms, the most natural/effective way to make learners practice the language is through discussions. For this reason, discussions (ranging from the simple question-answer process to the complex political and philosophical debates) have always been part of the teaching/learning scene. Discussions can provide a way to promote not only learners' communicative competence but also their critical thinking. Socrates taught by asking questions and drawing out answers from his pupils; his method, also known as Socratic questioning, can be adopted in oral classes to develop learners' communicative competence on the one hand and their critical thinking on the other. It is beneficial in the sense that it helps determine how much students know about a given topic, help students analyse a given concept, and most importantly to probe thinking.

## Concurrent Sessions Continued

This method has been tried with first year English students at l'Ecole Normale Supérieure -Assia Djébar- de Constantine (Algeria) for a period of three months. At the end of the experiment, students showed a better command of the target language, more confidence and self-esteem, and above all a curiosity that they did not exhibit before. They turned from passive learners who accepted everything that was presented to them with a nod to active learners who take nothing for granted. Asking questions and looking for answers by means of personal reading or debates became part of their learning habits.

My presentation provides some guideline on how to incorporate Socratic questioning in oral classes so as to train students to use it in reasoning, understanding the world, and drawing conclusions about their own thinking and the thinking of others, all while working on their oral skills. It is especially beneficial in countries where critical thinking instruction is not welcome; countries where the youth are purposefully kept as far away as possible from thinking. In a nutshell, by connecting a classical learning method to the contemporary classroom, we can answer the urgent need to teach thinking skills. In other words, incorporating Socratic questioning in oral classes will promote critical thinking in students and develop their higher order thinking skills.



## Concurrent Sessions Continued

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### Concurrent Sessions III

(2:40 p.m. – 3:30 p.m.)

**A Student Career Planning Program Aiming to Coach Students for Academic Success, Well-Being and Future Career Using Critical Thinking and Social-Emotional Tools in an International Course: Research and Best Practices**

**Tatiana Naaijer Ciff**

Thesis Committee Member

Research Lecturer, Logical and Critical Thinking and Social-Psychology  
Academy of International Business - Stenden University Leeuwarden  
The Netherlands

*Room: AP 01.30*

There is a tradition of almost fifty years of coaching and counselling in the Dutch tertiary education. During these years, student career programmes have transformed from courses where information was offered to students to courses where there is focus on communicating with the student and where the students are actively involved in the teaching-learning process. There is a body of research in the field of student coaching that claim that there is a relationship between the student's study success and the quality of the coaching the student is offered, especially in the first year of study (Bernard, 2005, 2017; Ellis & Bernard, 2006; Kuijpers, 2003; Kuijpers & Meijers, 2008, 2009; Mittendorff, Van der Donk & Gellefrij, 2012; Mittendorff, 2014; Onderwijsraad, 2007a, 2007b, 2008). Moreover, recent research (Lumley & Wilkinson, 2014) has shown that the skills most managers search for in the newly graduates are primarily socio-emotional and critical thinking skills. The Student Career Programme (SCP) we have been using in the last years focuses on the acquisition and practice of such skills.

In this session, the design, implementation, assessment and outcomes of a three year SCP programme using socio-emotional and critical thinking tools in an internationally oriented course at a University of Applied Sciences in the North of the Netherlands will be presented. The goal of the coaching programme is to equip students with the necessary tools so that they can achieve academic success, well-being and also prepare them for their future career. In order to achieve that, two theoretical models were combined: Bernard's socio-emotional YCDI! Education (2005, 2017) model and Paul and Elder's (2014) critical thinking model. Therefore, in this session, the design, structure,



## Concurrent Sessions Continued

implementation, and assessment of the coaching programme combining the two theoretical models will be presented. Additionally, the research outcomes of the coaching programme for the foundation year will be highlighted. Ultimately, students' testimony about the impact of the programme on their academic and personal development will also be offered. Introducing this coaching programme resulted in higher student satisfaction and positive behavioural and attitudinal changes in students. These results are supported by statistical data collected from students (self-assessment) and teachers' assessment of students.

### Teaching Business Leaders to Think Critically

#### Leigh Shamblin

Professor

Director of Leadership: Management, Innovation and Entrepreneurship  
Department

Poole College of Management – North Carolina State University  
North Carolina

#### Eileen Taylor

Associate Professor: Accounting Department

Poole College of Management – North Carolina State University  
North Carolina

*Room: SW 00.113*

Every year, approximately 400 Jenkins MBA students must complete a 1-credit hour critical thinking course as part of their core program requirements. The class is offered in two formats: online for part-time and online students, and in-person for the full-time, team-based cohort. In this session, we will discuss how we have standardized our approach across platforms and now use six progressive assignments to help students analyze, evaluate, and justify their beliefs. This session is highly interactive. Participants will leave with approaches and resources they can immediately adapt for their use.

## Concurrent Sessions Continued

### The I'm W.O.K.E. Project: Widening Options through Knowledge and Empowerment

#### **Tonya Clarke**

Coordinator of K-12 Mathematics  
Clayton County Public Schools  
Georgia (USA)

#### **Ebony Lee**

Director of Curriculum, Instruction, and Assessment  
Clayton County Public Schools  
Georgia (USA)

#### **Charlene Matthew**

Content Lead Teacher for K-12 Mathematics  
Clayton County Public Schools  
Georgia (USA)

*Room: SW 02.05*

The I'm W.O.K.E. (Widening Options through Knowledge and Empowerment) project uses mathematical simulations in integration with other disciplines to promote cognitive processing skills and use of the *universal structures of thought*. Essentially, students are asked to utilize their best thinking as they apply the standards of critical thinking to address or unearth a social, economic, political, or personal issue. Students work in consultation with peers to investigate a compelling phenomenon by making observations, posing a series of inquiries, and at times, providing preliminary hypotheses. They apply mathematical computations and simulations, they research historical contexts [if applicable], and they explore patterns and trends in order to uncover the critical components of the issue and separate fact from opinion or judgment. During these investigations, students apply the elements of thought with consideration for the standards of critical thinking to justify various measures for rectification.

Clayton County initiated the I'm W.O.K.E. project in 2017 as a method for weaving the intellectual standards into daily mathematics instruction while aiming to build students' capacity to confront controversial or divisive issues using a well-reasoned, well-researched approach. Teachers are asked to embed evidence-based teaching practices to increase student engagement, to improve their ability to productively struggle, and to cultivate critical thinking and collaboration. The project was an immediate success, with students and teachers, which led to increased academic achievement as evidenced by state

## Concurrent Sessions Continued

and national assessments. An I'm W.O.K.E. workshop series consist of three sessions. Each session serves as a modeling and coaching opportunity for the facilitators and a sample lesson for classroom teachers. The culminating activity is a student presentation, panel discussion, written proposal, or another interactive performance task that requires students to demonstrate their understanding of the components of critical thinking along with the integration of other disciplines of study.

### Developing and Assessing Critical Thinking Skills in the Civil Engineering Program

**Alina Zapalska**

Professor of Economics: Management Department  
United States Coast Guard Academy  
Connecticut

*Room: AV 91.20*

Critical thinking has been accepted as a proficiency outcome across civil engineering curriculum at the U.S. Coast Guard Academy. This paper presents teaching strategies for development and assessment of critical thinking. With higher levels of critical thinking, students will significantly improve analysis on complex engineering problems and produce higher quality solutions. The 21st Century Bloom's Taxonomy model has been adopted to provide a foundation in creating classroom materials and assessment instrument at the appropriate level of Bloom's Taxonomy. Students successfully develop critical thinking and answer questions, solve problems, and produce research projects that require development and use of higher-order cognitive skills as they progress with their studies during four years of undergraduate study. Alignment of course activities and testing strategies with learning outcomes is critical to deliver an effective course design and assessment. The assessment process allows collecting evidence about students' learning as it involves observing, recording, scoring and interpreting the information so that the teacher will assess students' learning and development of critical thinking. This system of assessment not only provides feedback to students about their learning and critical thinking skills mastery, but also provides feedback to the teacher about their instruction effectiveness. The purpose of this instrument was to design projects and provide students with instantaneous feedback to foster critical thinking skills. This assessment tool is likely to be effective for use by a given instructor. The assessment process presented is appropriate for any undergraduate coursework.

## Concurrent Sessions Continued

### Sweeten Students' Toil of Critical Thinking when Preparing a PowerPoint Presentation

**Danuta Furszpaniak**

AMU Language School – Adam Mickiewicz University  
Poland

*Room: AV 91.21*

Students' work on a PowerPoint presentation related to the subject of their studies, either for an 'English as a Foreign Language' class or for the course in 'Professional Presentations with Intentional Highbrow Humour as a Persuasive Device,' is based on the following principles:

1. a PowerPoint presentation is a classical speech supported with simultaneous multimedia delivery (Knoblauch);
2. safe intellectual humour based on semantic incongruity is used for rhetorical reasons;
3. the creative process takes place in the domains of science, humor and art with the use of paradigms of creativity (Koestler);

Presentation planning (critical thinking at this stage) includes answering questions concerning the title, aim and content of a presentation, and interpreting one of its key messages by linguistic humour in an original slide of high emotional impact as well as saying how to meet the audience's expectations and deal with issues that they might disapprove of.

In my presentation comparison of a critical thinker's and of a humourist's high-order thinking will be made in the context of case studies of students' slides with humour. The stimulating role of humour in the field of critical thinking will be shown. The results of action research concerning students' progress in the area of critical thinking in connection with preparing and listening to presentations with humour as a rhetorical device will be presented. Finally, the results of students' struggle to express thought in the clearest and most accurate way in will be shown.



## Concurrent Sessions Continued

### Cultivating Critical Thinking Through Self-Awareness: The Monitoring Mechanism Model of Behavior

**Paula DeFranco**

Doctoral Student: Psychology

Saybrook University

California

*Room: SW 02.07*

What are the mechanisms initiating the process of self-awareness? Do the same mechanisms cultivate critical thinking? This discussion examines the barriers to overcoming critical thinking development through the lens of self-awareness and using the framework of the Monitoring Mechanism Model. An analysis and assessment of thought in connection to behavioral triggers which dampen the development of intellectual virtues are introduced along with the two constructs underlying the process of self-awareness. The model is a comprehensive system promoting critical thinking skills through a systems framework and a two-step mechanism consisting of ongoing self-reflection and unbiased processing. The framework is a cognitive tool that helps individuals determine whether information coming into their behavior system is logical or activated by triggers, defined as maladaptive behavior patterns. The session concludes with case studies illustrating an objective led behavior systems (logic) vs. a subjective led system (triggers).



## Concurrent Sessions Continued

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### Concurrent Sessions IV

(3:40 p.m. – 4:30 p.m.)

#### An Inquiry Task and Rubric Design for Fostering Fairminded Critical Thinking and Civilized Discussions Regarding Social Issues Toward the Public Good

**Luis Fernando Santos Meneses**

Ph.D. Candidate

Nanjing Normal University – Institute of Curriculum and Instruction  
China

*Room: AP 01.30*

This proposal consists of a rubric design, which together with Socratic questioning, aims to foster the development of key aspects of critical thinking skills and virtues, giving a strong emphasis on fairmindedness based on the Paul-Elder's critical thinking approach mainly, as well as on other prominent authors' perspectives in the field. This proposal implies an intellectual exercise that embraces the above-mentioned elements (rubric and inquiry) to be carried out in classroom settings and beyond, with the assistance of a facilitator and/or through metacognition. The genesis of this proposal is based on the weak focus given to fairmindedness when tackling critical thinking in the educational system and the overwhelming displays of sophistry that surround the society. Some academic references note that critical thinking is mainly tackled in an individualistic, one-sided way or from a narrow perspective, focused on cognitive skills or logical thinking, as well as on personal/individual development, however, dismissing emotional, ethical, moral, cultural, and socio-political dimensions of the concept, which constitute the gaps that this proposal intends to cover to some extent.

As this exercise is intended to be applied primarily (although not exceptionally) in settings where CT development—specially Fairminded Critical Thinking—has had minimal deployment, this exercise focuses in key selected aspects of CT standards and traits such as depth, breadth, accuracy, intellectual empathy, humility, and autonomy, through leading learners to take a position regarding a social or public issue by means of five structured questions (although not exclusive) addressing these key intellectual standards and traits, whose descriptions of performance designed for the proposed rubric gather, synthesize, and merge theoretical references of these intellectual standards and references of the key intellectual traits above-mentioned, emphasizing on fairmindedness, mainly from Paul-Elder's approach since this approach offers clear and wide

## Concurrent Sessions Continued

illustrations and explanations on fairmindedness.

Concomitantly, this proposal employed in its design an approach coming from the Logic Framework Methodology (LFM) for social projects management pioneered by the U.S. Agency for International Development (USAID) and currently adopted by the United Nations (U.N.), the European Commission, and other important agencies and Governments devoted to social aid projects in developing countries. A tool from this method (problem/alternative analysis and problem/alternative tree) is usually used for unfolding a deep analysis of social problems and solutions through a systematic and graphical way based on a structured inquiry or Socratic dialogue, and the development of the cause-effect system/relationship analysis of problems and solutions which unfolds them into different levels of depth and yields a graphical representation through a tree diagram or map that favors a deep and width thinking and raise consciousness regarding the reality. Due to these attributes and my experience in the use of this tool, this method (LFM) was found useful for designing the rubric's performance descriptions of the standards depth and breadth of thought included in this proposal. This proposal may be potentially powerful for applying in Democracy & Citizenship courses as well as in lifelong learning, propaedeutic education, social projects management courses and practices, as well as in domain-general CT courses.



## Concurrent Sessions Continued

### A Skills-Based Course that Significantly Increased Critical Thinking Skills in Pharmacy Students

**Catherine J. Cone**

Associate Professor

Assistant Dean for Assessment

Roseman University of Health Sciences

Utah

*Room: SW 00.113*

An expectation of the public for health care professionals is that they are able to give reasoned consideration to risks and benefits associated with treatment. Explicitly developed curriculum based on a procedural format that requires analytical evaluation of evidence and individual patient characteristics with deliberative and reflective practice can result in significant improvements in critical thinking ability. This session will focus on presenting the curriculum and findings associated with a year-long course deliberately developed to improve critical thinking skills in pharmacy students.

### Critical Thinking at Modern University Learning Centers: A Practical Tool

**Elana Geller**

Learning Specialist

University of Saskatchewan

Canada

*Room: AV 91.20*

Critical thinking, when viewed as engaging in analytic thought and grappling with abstract ideas, is foundational for education, employment, and citizenship. As such educational establishments should ensure that students have a sufficient standard of critical thinking, not only upon graduation, but also during their education.

The modern university's learning centre is a place that promotes and yields student success, as evidenced by the number of centres that incorporate that into their name. This means, ideally, that it is a place to help students with those skills which are needed to foster better learning at university. If critical thinking is a foundational skill for learning at university, then critical thinking should be a skill fostered by university learning centres.



## Concurrent Sessions Continued

### Primary Teachers' Perceptions about and Methods to Promote Students' Critical Thinking Skills

**Loredana Lombardi**

Ph.D. Researcher

Vrije Universiteit Brussel

Belgium

*Room: AV 91.21*

Current societies need critical citizens who can evaluate and make sensible judgments about the enormous amount of information available throughout the Internet, television, and other forms of mass media. Research has indicated overwhelmingly the desirability of critical thinking (CT) in formal education and the key role of teachers herein. Especially primary education seems to be essential for adopting positive attitudes and cognitive behaviour because young children are able to formulate their thinking with less socio-cultural prejudices than youngsters or adults. However, research on efficient and appropriate teaching methods for developing critical thinking skills is scarce. Therefore, the present study's aim is to identify teaching methods that facilitate primary teachers to promote students' critical thinking skills. Based on primary school teachers' perception, the focus is to investigate how critical thinking skills can be fostered among pupils and to detect the main related obstacles perceived by teachers in the school environment.

A total of 21 teachers from three European schools in the Brussels Capital Region (Belgium/Europe) were questioned through semi-structured interviews. Respondents had 14 different nationalities (Austria, Belgium, Czech Republic, Finland, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Romania, Spain, Sweden, United Kingdom) and are all working as a teacher in a specific language section of the European schools, in case Czech, Dutch, English, Finnish, German, Greek, Italian, Romanian and Swedish. The participants were spread over all primary school grades (from the first to the last fifth year of primary school).

The results of this research will provide insight on how critical thinking is encouraged by teachers and which possible obstacles the experience in their practice. Specifically, focusing on teachers' professional experiences, this study will contribute to the further elaboration of a framework for the promotion of critical thinking skills among pupils in the context of primary education. Furthermore, the outputs of the study will detect relevant stakeholders (teachers, school principals, policy makers, researchers) to involve in stimulating efficient teaching methods for CT in primary education.

## Concurrent Sessions Continued

### A Pedagogical Tool to Explicitly Teach Critical Thinking Using Literature in English Language Classes

**Sindhu Joseph**

Lecturer

Ph.D. scholar

Christ Deemed to be University

India

*Room: SW 02.05*

Many theorists have suggested that one of the essential functions of literature is to instruct. Meanwhile studies have also shown that literature classes offer one the best convivial environments to teach critical thinking. However, there are few studies in the pluralistic context of the Indian grade 11 and 12 or pre-university English classrooms that expound on a flexible pedagogical tool that gives teachers the scope to use literature to explicitly teach critical thinking skills and thus, influence the critical thinking dispositions in their students. If at all critical thinking skills are imparted at the grade 11 and 12 or pre-university level, it is based solely on the teacher's own disposition and understanding. There are few such teachers in our country because there are fewer studies in this area and thus, more often than not, most students get no guidance on how to acquire the skills. My research aims to bridge this gap and develop a pedagogical intervention tool that is contextualized, flexible, and easy to incorporate into the existing teaching schedule of the grade 11 and 12 or pre-university English language and literature teachers. The tool will be developed following an exploratory review of the research on critical thinking in the fields of philosophy, psychology, and education mainly in the American, European, and Indian contexts. This study, which forms only a part my Doctoral work, will be a precursor to the larger one that tests the effectiveness of the proposed intervention tool in real-life English classes at the grade 11 and 12 or pre-university level. It is expected that the intervention tool will enable teachers to enhance their existing lesson plans with specific teaching approaches, methods and activities to explicitly teach critical thinking skills and thus promote not only the development of the skills but also the dispositions in their students. Through the Concurrent Sessions at the Conference, I hope to present this tool and gather expert opinions on its feasibility and shortcomings.

## Concurrent Sessions Continued

### Mastering Content One Cognitive Level at a Time in the 6th-12th Grade [Secondary Education] Science Classroom

**Kristi Stuller**

Secondary Science Instructional Specialist  
North East Independent School District  
Texas

**Tammy Neal**

Secondary Science Instructional Specialist  
North East Independent School District  
Texas

*Room: SW 02.07*

Public schools in the United States are charged with educating all children. Many of our classrooms are filled with diverse learners. Student diversity can be in the form of language, culture, educational background, cognitive skills, and a plethora of factors influencing learning. Our challenge is to help all our students grow in content knowledge, skills, and critical thinking.

In this session, we will focus on tools and strategies to meet the challenge of such diversity in the Science classroom. We will share a process for analyzing content and skills, to provide scaffolded learning targets in order for all students to grow in their cognitive abilities. Science education is about developing skills in critical thinking, scientific reasoning, and problem solving. We will focus on some the steps we are taking to ensure this becomes a reality for all students.





## Roundtable Discussions Program

**Thursday, June 6**

**1:20 p.m. – 2:20 p.m.**

**Room AP 01.30**

The Roundtable Discussions offer an opportunity for us to engage in lively, informal dialogue about important critical thinking topics in education and human society.

Multiple topic presentations have been clustered together within each Roundtable Discussion. Every discussion will begin with each presenter in the group taking his or turn at giving a 5-10 minute presentation. After all presenters in the group has had the opportunity to present, the Roundtable will open into a Socratic Discussion among all participants about the ideas at hand. Join any discussion as you wish, and feel free to move between discussions after the initial presentations are finished.

### Cluster 1: Integrating Critical Thinking Into Higher Education Instruction I

**Now More than Ever: Teaching a Format for Critical Thinking and Why It is Only the Beginning on the Road to Advocacy**

**David Dran**

Associate Professor: Department of Social Work  
The University of North Carolina at Pembroke  
North Carolina

Thinking critically is a skill needed both in all disciplines of higher education and in the active participation of citizens. I have spent four years in graduate and undergraduate classes perfecting a format for critical thinking that students could use in creating well-formed arguments in social work policy classes. This presentation will elaborate upon evidence-based premises, the assumptions hidden within them, and the value of identifying and replying to objections. Evaluating the argument in terms of its “reach” will also be explored.

However, even the best well-formed argument is not enough to advocate for implementing a conclusion. The landscape of argument on the road to advocacy is littered with heuristics that often go against the basic tenets of critical thinking. There is also a plethora of unfair arguments, and lately the dissemination of disinformation to sway opinion (now referred to as “fake news”). All of these obstacles must be dealt with if advocacy is to be successful.

## Roundtable Discussions Continued

### A Critical Thinking Driven Classroom: Integrating Critical Thinking into the Classroom

**Margaret Murray-Davis**

Professor: Health Science

Minnesota State University, Mankato

Minnesota

One of the main challenges for colleges and universities is the development of pedagogy encouraging critical thinking and assessment of critical thinking skills. These skills are particularly important in analyzing myriad issues presented in health science college courses. The presentation will focus on classroom strategies developed over twenty years of exploring and implementing Dr. R. Paul's critical thinking model in the classroom. The strategies will focus on developing the intellectual elements, standards and traits of critical thinking through discussion, personal writing samples and group research. I will discuss research (data collected) clarifying the degree of effectiveness of Dr. Paul's critical thinking model as a pivotal contribution to developing pedagogy that encourages critical thinking skills.



## Roundtable Discussions Continued

### Cluster 2: Integrating Critical Thinking Into Higher Education Instruction II

#### Debate as a Method of Critical Thinking Education: The Case of Japan

**Takeshi Suzuki**

Professor

Meiji University – School of Information and Communication

Japan

Visiting Researcher: Buffett Institute for Global Affairs

Northwestern University

Illinois

Debate has traditionally played an important role in teaching Japanese students how to argue. Many college debaters have participated in debate as a means of learning how to think critically. For example, in the 1980s, they were dissatisfied with Japanese English education that tended to focus on so-called 4 skills: reading, writing, speaking, and listening. However, debate can teach the student the 5th skill: arguing. As a debate instructor in Japan and a former debate coach in the United States, I have taught English debate for Japanese students for the last three decades. Based on my experience, I will consider the following: (1) what are the benefits of participating in debate as a means of learn critical thinking? For example, how can we incorporate debate education



into active learning curriculum?; (2) what are the problems of teaching debate to Japanese students? For instance, how should we cope with the students' unwillingness to argue in public?, and (3) what is an ideal curriculum for Japanese students to study debate in English? For example, what exercises should be introduced as a preparation for having debate matches? In the end, I hope to present implications for the future research on the relationship between debate education and critical thinking skills.

## Roundtable Discussions Continued

### How Professors Infuse Critical Thinking into College Courses

**Nancy K. Lennon**

Ph.D.

Seton Hall University

New Jersey

The title of my presentation would focus upon the research findings from my qualitative case study on “How Professors Infuse Critical Thinking into College Courses”. I would like to present these findings through a power point presentation with a follow up discussion. After presenting the findings of this case study, the emphasis would be to generate discussion on participants’ views on critical thinking as well as the importance of teaching critical thinking in higher education.

The purpose of this case study explored professors’ understandings about how they infuse critical thinking within “Signature” courses of the Core Curriculum in one private Catholic university, where a strong commitment exists to develop students’ critical thinking skills through the Core Curriculum. This qualitative study investigated the views of 12 professors in 6 disciplines as to how they approached the teaching and assessment of critical thinking skills within the three “Signature” courses of the Core Curriculum.

Data collection included documentation and one-on-one interviews with the professors, who taught “Signature” courses during the Spring 2011 semester. Through a cross analysis of the data, this researcher examined the professors’ perceptions about how they understood and defined critical thinking, their teaching and assessment practices, the challenges of infusing critical thinking as one of the core proficiencies and their views about critical thinking Professional Development programs.

The results from this study generated further insights about the challenges professors confront when they focus on critical thinking into “Signature” courses. These major challenges reside within a number of complex factors, such as overcoming faculty resistance, a lack of a common understanding and definition about critical thinking and the need for more effective Professional Development opportunities. Given the complexity of attempting to align all of these various factors together in one institution, this case study examined the understandings of how professors implemented critical thinking as a valued curricular goal.



## Roundtable Discussions Continued

### Cluster 3: Research in Critical Thinking – Higher Education

#### Critical Thinking as 21st Century Skill: Insights from HE Study Programs Analysis in Lithuania

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**Asta Railienė**

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**Daiva Penkauskienė**

Mykolas Romeris University –  
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Developing the critical thinking along with problem solving, creativity and collaboration are listed as essential 21st century skills students need above all others both for today's entry-level careers and for further career opportunities. At the same time the globalizing and intensifying labor market requires labor force able to apply the critical thinking skills in daily tasks and in particular, for long-term projections. We are going to present first findings of an ongoing four-year research project that aims to: a) define the perceptions of critical thinking of key players – educators and students, employers and employees; b) analyze

## Roundtable Discussions Continued

the cohesion and discrepancies between the critical thinking in higher education and in labor market and c) provide recommendations for development of critical thinking in higher education.

We analyze the bachelor and master degree programs in order to examine the extent to which critical thinking is developing as a skill in higher education of Lithuania. Systematic sampling method was used for the selection of study programs. Thematic analysis for the sampled programs in field of biomedical, physical, technological, social sciences, humanities and creative arts was carried out. For analysis we employed the unified, based on experts' consensus definition of critical thinking as 'purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which judgement is based' (Facione 1990, p. 2). This definition suggests looking at critical thinking as a set of clearly defined cognitive skills and sub-skills, as well as dispositions and sub-dispositions. We also build our concept of critical thinking informed by Klooster (2001) as an active, critical position taking on personal, interpersonal/group and societal levels.

The analysis of study programs reveals similarities and differences in application of critical thinking concept starting with its meaning, significance and ending with methods that develop critical thinking. We are going to share our findings with session participants as well as guide discussion about two main issues: a) how much attention is given to critical thinking skills and dispositions in study programs and in subjects of higher education and b) how personal, interpersonal and societal aspects reflect in nurturing critical thinking in higher education.



## Roundtable Discussions Continued

### Internationalization and Student Beliefs about Critical Thinking at Japanese Universities: A Q-Methodological Investigation

Adam Gyenes

Associate Professor

Ryutsu Keizai University

Ph.D. candidate

Osaka University

Japan



Over the past fifteen years, the Japanese Ministry of Education has been actively pursuing the internationalization of the nation's universities, enticing students from overseas in unprecedented numbers through English-medium instruction (EMI) degree programs, that simultaneously aim to nurture Japanese students with a global outlook. The development of critical thinking (CT), is a major aim of many of these programs. However, educational backgrounds vary within diverse student bodies, and understandings of CT differ in this cultural milieu. This study sought to investigate beliefs about critical thinking among Japanese and international students in EMI programs. A Q-sort (the survey instrument used in Q-Methodology to analyze differing subjective positions) was developed, using statements about the qualities of a critical thinker, taken from interviews with instructors. The survey was given to 39 students who had completed CT courses at two different universities. Through factor analysis, two distinct views of CT emerged: one group of students who emphasized perspective taking, flexibility, listening to others, and reflexivity as essential qualities of a critical thinker, and another group who valued logical argumentation, and analysis of evidence. Participants in the first group were predominantly Japanese students, while the second was mostly comprised international students. While this divide can be attributed to cultural and pedagogical differences, it also provides impetus for discussion of the contribution different cultures can make to an understanding of CT, and the role of CT in intercultural education.



## Roundtable Discussions Continued

### Assessing Critical Thinking in Romania by Using the Watson-Glaser Critical Thinking Appraisal

**Buzduga Codrina-Andreea**

Faculty of Psychology and Education Sciences

PhD. Student

Alexandru Ioan Cuza University

Romania

The purpose of my session is to discussed several aspects the development and validation of the Romanian version of Watson-Glaser Critical Thinking Appraisal. Several aspects including the items development, application of the instrument and validation will be presented and discussed in order to find solutions for improving it. Taking into account the cultural influences and the target population, the assessment of the critical thinking needs clarification and this session could provide useful insights for researchers interested in the field.



## Roundtable Discussions Continued

### Cluster 4: Emphasizing Problem Solving and Peer Mentoring to Advance Critical Thinking Abilities

#### Life Doesn't Have a Rubric. Helping Students Apply Critical Thinking Skills by Implementing Problem-Based Learning into Professional Development Curriculum

Amy Jared

Professional Development Coordinator

The University of Tennessee, Knoxville

Tennessee

Most students are conditioned from the time they enter school through graduation to base their answers and projects on the basis of a system of rubrics with strict instructions and grading criteria. However, in the workforce, individuals regularly face ambiguous situations which require the ability to critically think and problem solve, without a rubric to lead them a certain direction. This is why critical thinking is listed as a top career readiness competency students need to develop, yet where recent graduates tend to fall short. While some students will have internship opportunities and experiential learning to assist in developing this competency, many students will not have these “out of the classroom” experiences. The Haslam College of Business at The University of Tennessee, is addressing this gap with the implementation of modified Problem-Based Learning in their required professional development curriculum to teach students how to navigate ambiguity in the problem-solving process.



## Roundtable Discussions Continued

### Training Peer Tutors and Academic Mentors to Teach Critical Thinking Skills to Peers

**Jocelyn Manigo**

West Chester University of Pennsylvania

Director, Learning Assistance and Resource Center

Teaching critical thinking skills to college students can be a challenging undertaking. This task becomes even more complex when training those students, especially novice leaders, to teach and develop critical thinking skills in others. This presentation introduces a training workshop model that guides student tutors and academic mentors to teach critical thinking skills to help-seeking college students. The workshop model first introduces the concepts of critical thinking and metacognition, then it provides practical strategies for scaffolding critical thinking skills through intentional prompts, inquiry and modeling techniques. Bloom's taxonomy serves as the primary framework through which to present the critical thinking construct. While this model targets peer tutors and academic mentors in higher education, it serves as a universal training model for other industries as well.

### On the Existence and Interaction of Various Modes of Thought in Decision Making, Problems Solving and Learning

**Mohammad B. Bagheri**

Ph.D. in TEFL

Islamic Azad University - Science and Research Branch

Iran

The human mind is capable of performing a variety of activities that share the essence of thinking and reasoning. In fact, this plethora of thinking modes allows humans to make the best use of their thinking in various situations. In each of these thinking activities, one feature is dominant and overriding. For example, in Logical Thinking the dominant feature is to use *logic* and in Skeptical Thinking the key feature is the use of *doubt*. Although there is general consensus among Critical Thinking authorities on the existence of these various modes of thought, they have not reached agreement on how they interact with each other. For example, some believe we should conceive of Creative Thinking as one dimension of Critical Thinking while some others assume they are two modes of thought and two divergent skills. The idea proposed in this session is that Critical Thinking should be conceptualized as an umbrella term encompassing all these various modes of thought and a critical thinker is

## Roundtable Discussions Continued

someone who is well aware of the existence of these various modes of thought and is capable of using them appropriately. In this session, various thinking modes, together with their defining features, will be discussed first. Then, the way these modes of thought might function in both *global* and *local* levels would be discussed. It would be argued that each person has a Dominant Mode of Thought which stands out and dominates other modes of thought. It is emphasized that though human thinking includes a family of interwoven modes of thought which interact with each other in any decision making or problem solving situation, one mode of thinking is prominent and will dominate other modes of thought. The presenter is interested in working with the participants to identify their own Dominant Mode of Thought. This DMT can be Emotional Thinking, Logical Thinking, Spiritual Thinking, or any other mode of thought which is available in the mind of any thinker. The participants would be encouraged to reflect on their own previous decisions to see what mode of thought led them to that particular decision. An awareness of the role of various modes of thought helps any thinker to bring their mental activities into a conscious level.





## Roundtable Discussions Continued

### Cluster 5: Critical Thinking, Identity, Cultural Norms, and Gender Issues

#### The Intersection of Critical Thinking, Identity, and Culture in the Classroom and Workplace

**Alonzo Kelly**

Principal

Kelly Leadership Group

Wisconsin

Identity and organizational culture have a major influence on the ability for diverse students to excel in the classroom and workplace. Theories related to Identity including, Nigrescence Theory, Critical Race Theory, and the Scholar Identity Model are heavily focused on explaining the behaviors of diverse students in academic and business settings. Critical Thinking has a critical role in recognizing, evaluating, and responding to the intersections of both lived and learned experiences of both students and teachers.

#### How Critical Thinking Education Can Lead Students to Question Traditional Views on Women: Research from Hoa Sen University in Vietnam

**Thuy Do**

Ph.D. Student: Gender, Sexuality, and Women's Studies

Simon Fraser University

Canada

This discussion will circulate how critical thinking courses can challenge traditional knowledge on women and form new knowledge. The central question on discussion asks how critical thinking is an important element in students' learning outcome, which eventually helps them build new knowledge. In particular, the discussion will start from the analysis of challenges and opportunities in teaching critical thinking in the environments that knowledge are top-down transferring and critical thinking is never encouraged to students. In the discussion on challenges, participants will discuss how a top-down transferring knowledge education system and the tradition of respecting adults prevent students' critical thinking ability. The discussion of these issues will give participants a critical consideration that these challenges are, however, opportunities to develop critical thinking courses. The changes experienced during the time teaching critical thinking in that environment is that lacking knowledge in critical thinking of the education system is the most challenge



## Roundtable Discussions Continued

in improving teaching critical thinking courses. Students are resilient on new knowledge and excited to explore them if they have opportunities to challenge the old one. While the discussion has been carried out challenges, discussing opportunities in teaching critical thinking will seek to remedy these problems which prevent students' ability to critique traditional knowledge. By examining the opportunities, the discussion attempt to illuminate how critical thinking is an important tool in challenging traditional knowledge and advance new knowledge about women. The aim of the discussion is to shine new light on these debates through an examination of the changes in student's thinking on women after taking a critical thinking course. Data for this discussion were collected using students' final papers of 29 critical thinking classes for about 1100 students that the author taught in 5 years at Hoa Sen University in Vietnam.

### Do Social and Cultural Norms Prevent Us from Thinking Critically?

**Yumi Chikamori Gomez**

Lecturer: Language Education Center

Seitoku University

Japan

The purpose of this roundtable discussion is to encourage participants to consider critical thinking from the sociocultural perspective. The presenter will discuss how the culture and the social background of individuals may play a significant role in the way they behave and the way they think. The presenter will then introduce a case of a Japanese university where students worked in groups on a project that required critical thinking. She will refer to the data collected from extensive interviews with the students and explain how many of the students focused on maintaining harmonious human relations with their peers, which is considered the most important in the Japanese society, at the cost of thinking critically about the task itself. Then the presenter will invite the participants to look introspectively at whether and how their cultures and their social structures affect their critical thinking. Participants are also asked to consider the issue from their professional standpoint and discuss whether and how such social and cultural norms can be overcome to think critically in their own fields.

## Roundtable Discussions Continued

### Cluster 6: Addressing Information Literacy, Online Learning, Global Perspectives, and Government Regulations Through Critical Thinking

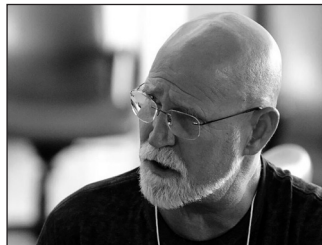
**Information Literacy and Critical Thinking: How Similar are their Conceptions? How Can We Increase the Dialogue Between the Fields that Use These Different Terms?**

**Helena Hollis**

Ph.D. Student

University College London

United Kingdom



Information Literacy (IL) is broadly considered to be one's ability to find, evaluate, manage, and ethically use, create, and share information.

It is a concept typically discussed within the field of Library and Information Science (LIS), in which it has developed along a parallel timeframe and trajectory to the discourse around CT. Conceptions of IL include assessment of evidence, sensitivity to point of view, judgement making, reflection and metacognition, openness, creativity, and democratic engagement; all factors that feature in CT conceptions also. And yet there is little engagement in the discourse on CT by LIS thinkers, and vice versa. Whether one discusses the concept of IL or CT seems to be largely determined by which discipline one hails from.

Robert Ennis has argued that thinkers in the debate around Critical Thinking (CT) share the same concept, but have different conceptions. It could be argued that CT and IL are different concepts, but share the same conceptions. The purpose of this round table discussion is to explore these different conceptions, and identify areas of overlap and of difference between them. Through this discussion, participants from different fields can engage with the concept of IL, and use the conversation about the areas of overlap to deepen their own conceptions of CT. The broader aim of the discussion is to open a dialogue between the disciplines using these different terms, and thereby facilitate knowledge sharing.

## Roundtable Discussions Continued

### Teaching Critical Thinking and Global Perspectives Online

**Alexis DiRienzo**

Professor: Reading and Critical Thinking

Santa Fe College

Florida

Teaching Critical Thinking and Reading to college freshmen and sophomores online involves instructor presence, regular feedback, active learning, clear expectations, and assignment clarity for student success. Alignment with outcomes, objectives, and topics is essential for an engaging experience. Accessibility considerations are also important. This online Canvas course begins with discussions and information on implied and explicit bias and helps students assess their own cognitive biases and perceptions. Activities are provided for students to analyze and evaluate their higher order thinking. Awareness of the connections between critical thinking and creative thinking is exemplified through assignments for exploring problem solving, inner fears, and blocks that prevent students from allowing themselves to follow through with goals and passions with self-confidence. Understanding how to have a productive discussion by listening and responding to points made by other participants is fundamental to a critical thinking class. Cultivating successful dialogue between students is essential to successful student engagement. Cultural similarities are emphasized enabling students to develop a greater awareness of citizens, norms, and like dilemmas in other countries.

Students read, share viewpoints, have online discussions, and write about current and historic topics using material from essays, current media, films, and texts. Detecting persuasion in communication is essential and covered with essays, inductive argument, fallacy, and scientific method.

## Roundtable Discussions Continued

### Applying Critical Thinking Skills in Governmental Regulation

**Caroline Vanneste**

Consultant: Health Product Regulatory Services

Former Canadian Government Employee: Pharmaceutical and Medical Device  
Regulation  
Canada

Government regulators are often highly educated, and have significant experience in academia and/or industry. They have been applying critical thinking skills to their work for many years. But working within the constraints of government regulations requires a shift in thinking and a different skill set. How are new regulatory staff members introduced to this new way of thinking? This session will discuss methods for training adult learners to apply their critical thinking skills in a new environment.

Critical thinking requires an objective and systematic approach to analyzing information and to problem-solving. It uses sound logic and reasoning to identify strengths and weaknesses of alternative solutions, conclusions, or approaches. It uses reasoning to analyze, compare, and interpret information to draw conclusions. In a regulatory environment, it is particularly important to consider context and make decisions in the face of uncertainty.



## Roundtable Discussions Continued

### Cluster 7: Critical Thinking and Science

#### **Pedagogical Approaches to Support Students' Critical Thinking at Higher Educational Levels: A Comparison of Three University Course Designs in a Faculty of Educational Sciences**

**Antonella Poce**

Associate Professor

Roma Tre University

Italy

**Francesca Amenduni**

Ph.D. Student

Roma Tre University

Italy

Once, critical thinking (CT) was understood to be the added-value provided by higher education since universities created spaces to support the formation of people authentic judgments. Nowadays, the role of higher education in the economy has been multiplying, and, as a consequence, CT is questioned, especially concerning its economic.

In our perspective, CT should remain a pedagogical priority in all the stages of education, including in the universities. In the presentation, we will compare three university course's designs carried out in a Faculty of Educational Sciences and based on different methodologies proved to be efficient in terms of CT development. We will describe in detail: 1. a course of "educational research methodology" in which collaborative writing tasks were adopted, specifically analysis of literary texts and creative writing starting from a piece of art; 2. a course of "experimental education" in which students were invited to assess and create their own educational resources, following the principles of Project Based and Problem Based Learning 3. a course of "experimental pedagogy, museum and reading" based on Project Based Learning, where students collaboratively realized a museum path in their university. In the three courses students were required to complete a Critical Thinking pre-test and post-test. In both pre-test and post-test students write a short essay after reading an excerpt from "The Dialogue Concerning the Two Chief World Systems" written by Galileo Galilei. Short essay was adopted because it allows to assess the CT underlying dimensions and personalize the assessment tool based on the teachers' educational objectives. A total of 598 students complete the pre-posttests. The results will show a comparison between the pre and post-test, and among the

## Roundtable Discussions Continued

three different courses. In addition, the results will determine the presence of a correlation between the CT level and final score obtained at the exam.

### On the Relationship Between Critical Thinking and Logic Science

**Jing Shi**

Professor

Associate Professor

Central University of Finance and Economics - School of Culture and Media  
China

Theoretically, critical thinking has a close connection with logic science. Today the term “Critical Thinking” is becoming very popular in Chinese educational circles. Many scholars have joined in the discussion on critical thinking.

As a foundation course based on science, the science of logic curriculum is well-developed and mature in China. There are two main viewpoints on the relationship between critical thinking and the science of logic. One of them believes that critical thinking has nothing to do with logic science, while the other argues that critical thinking is interrelated with both branches of formal and informal logic, but it is different from both of them. What’s more, it holds that formal logic and informal logic together constitute the logical basis of critical thinking, and that the two branches can be used interchangeably and freely.

At present, Most of Chinese universities that offer critical thinking courses directly use the science of logic as the basis of critical thinking curriculum. This inevitably gives rise to the discussion on the relationship between critical thinking and logic science. Some Chinese scholars believe that “informal logic” depends on logic after all, but critical thinking is different: it does not need to deal with logic problems. Therefore, in the opinion of these scholars, critical thinking has nothing to do with logic science, but other believe there is a connection between them. In my opinion, we must first of all accurately understand the meaning of logic science. As a branch of science, logic science takes reasoning and argumentation as its object of study. Its main task is to study the validity of reasoning forms, to provide criteria for identifying effective reasoning and ineffective reasoning, and to teach people how to reason and argue in a correct way, as well as to identify, expose and refute incorrect reasoning and argumentation. Additionally, we have to know the connotation of critical thinking. Critical thinking should not only solve the problem concerning the validity of reasoning form, but also answer the question on the authenticity and credibility of reasoning premise. That is to say, critical thinking is concerned with both the form and content of thinking, which is the basic feature of

## Roundtable Discussions Continued

daily thinking. As a thinking skill and strategy, it must take the general rules of formal logic as its basis and premise. To make a strict distinction between the effective reasoning form and the invalid reasoning form in formal logic is indispensable for critical thinking: an argument based on invalid reasoning form is not convincing, and a persuasive argument can only be born of the effective reasoning form. Therefore, we can say that informal logic provides the logical basis for critical thinking. In other words, logic science is the theoretical basis of critical thinking. However, it must be noted that here “logic” refers not only to formal logic, but also to “broad sense logic” that includes informal logic.

The purpose of introducing this topic for discussion is to share my viewpoint on the relationship between critical thinking and logic science. It is my hope that the discussion on their relationship can help promote the discussion on critical thinking to a wider sphere and more and more people will join in the discussion. I also expect to learn from speeches of other participants.

### The Teaching of Critical Thinking Within the Disciplines: Physics

**Ignacio Laiton Poveda**

Teacher-Researcher

Escuela Tecnológica Instituto Técnico Central  
Colombia

The purpose of this session is to expose the research work in the field of teaching physics based in critical thinking skills, in Colombia, where the education is basically to memorize yet, and repeat the information at the exams.

Fieldwork is supported in the need to develop critical thinking skills, even in the field of science education, in this case physics, as support element in the comprehension, analysis and explanation of the phenomena that physics laws reveal. The objective of the work is to show a pedagogic strategy tending to develop critical thinking skills through the resolution of mechanical and electromagnetic physics problems.

In short, the pedagogical intervention seeks to integrate elements of understanding of laws, precise construction of physical scenarios (where the laws govern), relationship between variables, logic of the interactions, clear and precise explanations of the consequences of physical laws, relevance of practical applications, as well as the explicit communicative process of each student.

The results in terms of academic results, as well as the motivation and generation of thought routines of some students are proof of the effectiveness of the applied methodology.

## Roundtable Discussions Continued

### Cluster 8: Enhancing Critical Thinking Through Developmental Instruction, Poetry and the Teaching of Foreign Languages

#### Can Poetry Develop Critical Thinking Skills? Narrative Enquiry in an Art Institution Poetry Writing Group

Frances Norton

Senior Lecturer: MA in Creative Practice

Leeds Arts University

United Kingdom

The purpose of my session is create a discussion around the role of critical thinking in university pedagogy. This is a small scale ethnography (Burke 2001) making use of action research (McNiff 2014). The paper has an underlying question anchored by two theorists, Ken Brown (1998) and Matthew Lipman (2003). Can critical thinking be taught or can we only create opportunities for its development? This will be investigated through qualitatively and thematically analysing data. There are eighteen self-selecting volunteer participants. Data is collected from participants using narrative enquiry (Gregory 2009) methodologies and interventions. These include video interviews in small groups and using the poetry written in fiction based analysis. The ontological particularity of the art school is the framing for this paper, viewed through a post-structuralist lens. The epistemological stance is hermeneutic/ interpretative. Themes of mental health well-being and increased confidence in written and spoken English, and a community of inquiry are discussed in the findings.

Recommendations are made as to how critical thinking could be developed in curriculum design in the future, and in the wider field of pedagogic policy making.





## Roundtable Discussions Continued

### Measurement and Enhancement of Critical Thinking Competency from a Developmental Approach

**Zhihong Sun**

The University of Melbourne – Melbourne Graduate School of Education  
Australia

The study begins with a worldwide concern that critical thinking of higher education students needs to be enhanced. Early research on critical thinking has suggested that a substantive construct of critical thinking with integration of research from different study areas needs to be defined to underpin and facilitate critical thinking teaching, learning, and assessing. It also has suggested that developmental approach can be used to overcome weaknesses of current “vicious triangle” model of learning where curriculum, pedagogy and assessment lack alignment. In this context, the study posed two questions: To what extent can a substantive construct of critical thinking be defined to capture richer understandings of current critical thinking research and contemporary expected attributes, outcomes and skills of higher education students? To what extent can a measure of critical thinking be developed to describe a developmental progression of critical thinking competency?

The research approach is a developmental approach involving a multi-step process recommended by Wolfe & Smith. To begin with, existing empirical and theoretical studies of critical thinking would be first reviewed to produce a hypothesized construct and developmental progression of critical thinking with behavioral indicators and associated rubrics. Then, assessment, curriculum and content experts would undertake workshops to review the progression that may be edited according to their opinions and comments. The progression will serve as the basis for the construction and development of assessment tasks in critical thinking. Draft assessment tasks will be piloted and trialed at universities. Data collected in the pilot study and field trial will be used to identify and compare students’ critical thinking competency levels and performance patterns in different cultural contexts. Final revisions to the progression and assessment items will be informed by data analysis and consultation with experts. The results of this study including empirically validated progression and assessment items can be referred as an operational and teachable framework to underpin critical thinking teaching, learning and assessing, and also to explore and investigate relevant issues about critical thinking.

## Roundtable Discussions Continued

### Integrating Critical Thinking Instructions into an 'English as a Foreign Language' (EFL) Writing Course in China

**Mei Lin**

Senior Lecturer  
Newcastle University  
United Kingdom

**Xiaoting Xiang**

Faculty  
Chongqing University of Education  
China



Critical thinking is not a new concept in education, though it is a relatively new requirement in EFL curriculum. The latest EFL curriculum for secondary schools and colleges in China has witnessed adding thinking quality as one of the teaching objectives. Thinking quality is defined as developing students' ability to think logically, critically and creatively and as a core to help to improve students' ability to analyse and solve problems, enable them to view the world from cross-cultural perspectives and make correct value judgement (English curriculum standards, 2017). Globally, despite an increase of publications calling for a need of teaching critical thinking in second language education, pedagogically what teachers can do to infuse teaching thinking into an EFL curriculum remains a challenge to practitioners and advisers. This presentation focuses on an application of concepts from Paul-Elder's approach of critical thinking as mediation tools to cultivate critical thinking through a four-months Reading-and-Writing course offered to first-year Chinese English major students. Based on the teacher experience and empirical data, a model of teaching critical thinking in writing in EFL is proposed with embedded concepts from Paul and Elder's framework and metacognitive skills.



## Roundtable Discussions Continued

### Cluster 9: Traditional Philosophical Approaches to Thinking

#### Critical Thinking as Training Path for Forming Concepts and Building Arguments: An Experience with Freshmen

**Francesco Piro**

Professor: History of Philosophy

University of Salerno

This session is focused on a teaching and learning experience carried out from 2013 until now, consisting of a training path in critical thinking which was offered to freshmen in Education at the Salerno University. The original goal of this training was to provide students suitable knowledge for the understanding of philosophical texts. The training path aimed to furnish the freshmen of the proper instruments for reading and analyzing theoretical texts, enabling them to a critical reading.

The story of this training path includes two steps: the starting phase and the experimental phase. In the starting phase, the tools to help understanding of arguments and texts were defined. The result of this process was to draw up a format, that was later developed as a textbook. The format took into account many didactic models which were used in the Anglo-American textbooks on Critical Thinking. In detail, both models centered on the learning of formal logic and those based on the “informal logic” approach were considered. The format was structured as an introductory path or a “box of tools”, with many exercises and games.

Along the progress of the experimental phase (2018-2019), the structure of this training path was rearranged, modifying aspects of the training path in a way that was partially inspired by the educational model of Matthew Lipman’s Philosophy for Children.

The feeling and feedback from students was excellent; in fact, they reacted with great enthusiasm, stopping in the classroom even after the end of the scheduled time. The replicability of the proposed approach and experiences performed also in extra-curricular contexts, and the use of the acquired skills during the training could be very useful for their future work as educators.

## Roundtable Discussions Continued

### Interaction of Variables: A Key Concept in Critical Thinking

**Simón Guerrero**

Ministry of Education of the Dominican Republic

Autonomous University of Santo Domingo

Dominican Republic

**Zoidi Carpio**

United Nations Development Program

Dominican Republic

There is interaction between two independent variables when the dependent variable value that results from one independent variable is caused by the specific value assumed by the other independent variable. For instance, if you ask someone if to put labels to the elements of a set facilitate or hinders a learning task, the correct answer would have to be “it depends”, unless more data is provided. Actually, every time someone answers “it depends” to a question, that means most of the times that this question refers to a situation which there is an interaction of variables and that one of the independent participant variables is being omitted, what makes it difficult to give a correct answer. But it is a very common mistake, both in the academic field and in daily life, not to realize that an independent variable which is interacting with another one is being omitted, although it significantly affects the values of the dependent variable. In the previous example on the effect of the labels on a learning task, it is not possible to answer the question if “the nature of the task”, an independent variable with which “put up labels” interacts, is omitted. When it comes to serial learning tasks, putting labels facilitates learning. When it’s a puzzle solving task, it makes it difficult. Another example: Is it difficult to learn German? There are many interacting variables to consider. It is not the same to learn German as when you are a child than to learn it after adult. Another important variable to take into account when learning German, is the student’s native language. It has to be harder for a Chinese to learn German than for a Dutchman whose mother tongue has the same Anglo-German origin. Interaction of variable is everywhere. Even in sports. The fans of Maradona, to prove their idol is superior to Messi, claim that the latter has never won a World Cup. As if to win a World Cup there was no need to consider other variables such as the quality of the players of the National Team. Although mistakes related to the interaction of variables are very frequent, the concept is not explicitly mentioned in the critical thinking literature.

## Roundtable Discussions Continued

### Ontology as a Foundation and a Part of Contemporary Critical Thinking: New Literacy for Information Era

**Evgenii Volkov**

Faculty: Social Sciences

Associate Professor: Department of General Sociology and Social Work

Lobachevsky State University of Nizhni Novgorod

Russia

Ontology (in its contemporary meaning) is a way we see and represent the elements and constructs to build our knowledge and beliefs on physical and social realities. Although, the ontological approach has been developing greatly in the sphere of IT and business processes engineering, and has become a basis for knowledge management and knowledge engineering, it is still underestimated in education. It is possible to enrich critical thinking model in many ways through the integration with ontology.

The author developed a basic training course in ontology as an introduction to a critical thinking course. He has been delivering it for university students and a group of adults as a Moodle-based online course. The theoretical grounds and the experimentation results will be presented on the session.





## Concurrent Sessions and Roundtable Discussions

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Distinguished Scholar Carol Tavris spoke at the 36th Conference.

## Concurrent Sessions and Roundtable Discussions

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## Concurrent Sessions and Roundtable Discussions

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## Concurrent Sessions and Roundtable Discussions

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## Concurrent Sessions and Roundtable Discussions

### Presenter Information, continued

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## Concurrent Sessions and Roundtable Discussions

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**Xiaoting Xiang**

Faculty  
Chongqing University of Education  
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**Alina Zapalska**

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## About Richard Paul

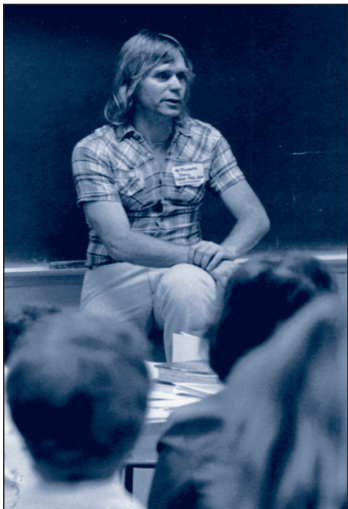
### The Founder of the Center and Foundation for Critical Thinking

In 1968, Richard Paul completed his doctoral dissertation for the Ph.D. in Philosophy. His dissertation focused on the following seminal questions:

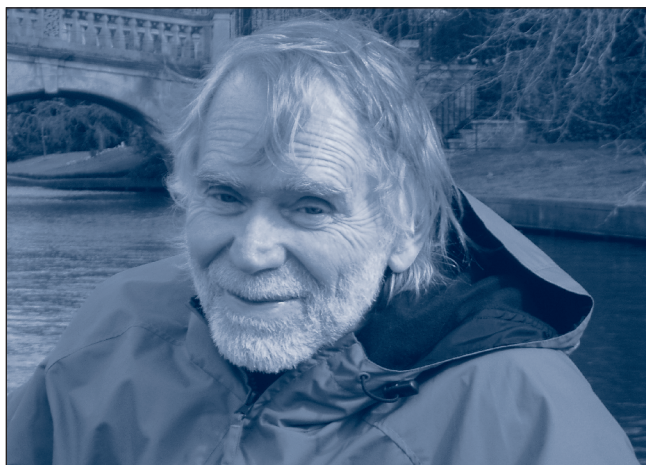
To what extent do traditional philosophical approaches to the analysis and assessment of reasoning effectively guide one in determining what makes sense to believe and what to reject? More specifically, to what extent do these approaches provide adequate theory for determining when questions have been adequately answered and when assertions or claims have been sufficiently validated?

In his critique of traditional philosophical approaches to reasoning, Paul illuminated the conflicting nature of these approaches, as well as the limitations and often glaring inconsistencies within and among them. He asserted the need for replacing the fragmented, inconsistent, and conflicting philosophical approaches to reasoning with an integrated, systematic, and – if possible – universal approach.

Paul argued that the primary task of the logician is to develop tools for the analysis and assessment of reasoning in every discipline and domain of human thought – tools to be used in reasoning through life's many complex problems and issues. He emphasized the importance of the "logic of language" to human reasoning. He set forth the idea that every subject and discipline has a fundamental logic that could and should be explicitly formulated (and that an adequate theory of reasoning would provide the foundation for that logic).



Paul's focus on the importance of explicating intellectual tools for analyzing and assessing reasoning in his 1968 dissertation laid the groundwork for what would become his life's work. It planted the seeds for the critical thinking theory Paul would develop throughout many years of thinking about the problematics in thinking,



and about the concepts that can be used to intervene in these problematics, thereby improving thinking.

Paul developed, throughout his lifetime, precisely what he called for in his early critique of philosophy: an integrated approach to the analysis and assessment of reasoning, now used by perhaps millions of people throughout the world. Almost 50 years after the completion of his dissertation, after many years of doggedly pursuing the questions he opened up in it, the name “Richard Paul” and the concept of critical thinking are virtually synonymous throughout the world.



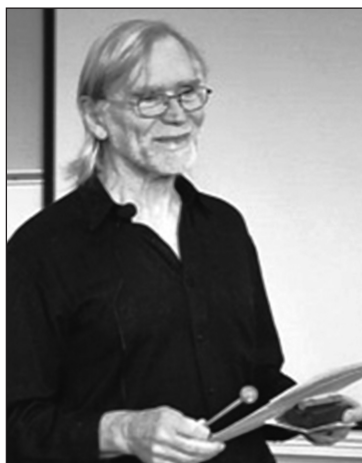
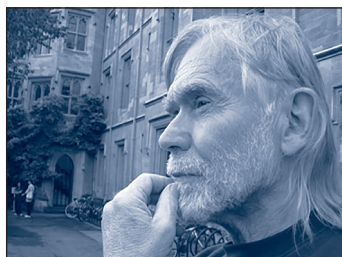
The importance of Paul's work lies in its richness and in its universal application to human decisions and interactions, in its simplicity and in its complexity, in its delineation of ethical versus unethical critical thought, and in its integration of insights from many domains of human reasoning. Through a developed lens of critical thinking, Paul has detailed a multilogical, multidisciplinary approach to understanding and improving the human mind – and, thus, the human condition.

Richard Paul was a living example of a critical mind at work, systematically employing intellectual skills human minds rarely learn, even at foundational levels. His genius lay, among other things, in his willingness to take ideas seriously, to resolutely pursue those ideas through strict adherence to intellectual

standards, to clearly distinguish in his own mind what is known from what is simply believed, and to sincerely embrace and embody the intellectual virtues of the cultivated mind – and to do all of these things routinely and consistently even, and most especially, in his own personal life.

Richard Paul cultivated theory that, were it to be taken seriously in any broad-scale way, would greatly reduce suffering and the pervasive injustices that exist throughout the world, for Paul developed a fairminded conception of criticality accessible to all humans through their own natural languages.

Richard Paul died in August of 2015, but we carry forward his vision for a more forgiving world, a more compassionate world, and a more merciful world.





## A Special Thank You to Our Donors

In 2017, after decades of self-reliance, the Foundation for Critical Thinking necessarily began its first-ever fund drive as a 501(c)(3) non-profit organization. Rapid global changes have required us to call on you, the critical thinking community, for help. In every annual conference program, we honor those whose generous gifts in the preceding year helped us to continue our important work toward advancing rational, fairminded critical thinking. Below, you will find a list of donors who offered their support of our work – either in time or resources – from May 25th, 2018 through March 3rd, 2019.

To donate to the Foundation for Critical Thinking and contribute to the development of fairminded critical societies, visit [www.criticalthinking.org](http://www.criticalthinking.org) and click ‘Donate.’ We also welcome in-kind gifts (email Dr. Linda Elder - [lindaelder@criticalthinking.org](mailto:lindaelder@criticalthinking.org)) in marketing, web design or web maintenance, and other volunteer capacities. We are profoundly grateful for all of your gifts.

### Friends of the Foundation for Critical Thinking

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<i>Terry Holt</i>	<i>Georgios Koumakis</i>	<i>Joshua Hunt</i>	<i>...and a special</i>
<i>Cynthia Searcy</i>	<i>Jai Kang</i>	<i>Heidi Anderson</i>	<i>thank-you to</i>
<i>Micah Janus</i>	<i>Laurice McGinnis</i>	<i>Svitlana Koval</i>	<i>Phoenix Rose!</i>
<i>Andy Garza</i>	<i>JoAnne P. Clark</i>		

### Sustainers (Major Gifts)

For the second year in a row, our one and only benefactor at the topmost ‘Sustainer’ level has been illustrator and graphic designer Kathy Abney. Through the donation of her amazing talents, Ms. Abney has long made things possible that otherwise could not have been done, including dozens of critical thinking publications and this very conference program.



## Foundation for Critical Thinking Books and Guides

The following publications have been written by Foundation for Critical Thinking Fellows:

- *Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World*
- *Critical Thinking: Tools For Taking Charge of Your Learning and Your Life, Third Edition*
- *Critical Thinking: Tools for Taking Charge of Your Professional and Personal Life, Second Edition*
- *Critical Thinking: Learn the Tools the Best Thinkers use*
- *Learning to Think Things Through: A Guide to Critical Thinking Across the Curriculum*
- *30 Days to Better Thinking and Better Living With Critical Thinking*
- *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 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 Thinker's Guide to Fallacies: The Art of Mental Trickery and Manipulation*

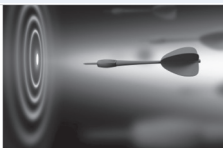
- *The Thinker's Guide for Conscientious Citizens on How to Detect Media Bias and Propaganda*
- *The Thinker's Guide to the Art of Socratic Questioning*
- *The Miniature Guide to Understanding the Foundations of Ethical Reasoning*
- *The International Critical Thinking Reading & Writing Test*
- *A Miniature 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*
- *The Instructor's Guide to Critical Thinking*
- *Historical Thinking: Bringing Critical Thinking Into the Heart of Historical Study*



# Join the Critical Thinking Community Online

Our community invites all to join who want to advance fairminded critical thinking across your work and life. This community is sponsored by The Foundation for Critical Thinking and its donors, and the site will be launching this Fall. Our community members advance and foster basic concepts and principles in critical thinking.

**Coming Soon...** [www.community.criticalthinking.org](http://www.community.criticalthinking.org)



**Criteria Corner**

Humans live in a world of thoughts. We accept some thoughts as true. We reject others as false. But the thoughts we perceive as true are sometimes false, unsound, or misleading.


And the thoughts we perceive as false and trivial are sometimes true and significant. The most doesn't naturally grasp the truth. We don't naturally see things as they are. We don't automatically sense what is reasonable and what unreasonable. Our thought is often biased by our agenda, interests, and values. We typically see things as we want to, the best way for our personal good. Choosing reality is common in human life. It is a phenomenon to which we all unfortunately fall prey.

Each of us views the world through multiple lenses, often shifting them to fit our changing feelings. In addition, much of our perspective is unconscious and arbitrary and has been influenced by many forces – including social, political, economic, biological, psychological, and religious influences. Social rules and taboos, religion and political ideologies, biological and psychological impulses, all play a role, often unconscious, in human thinking. Sometimes, these internal and external influences are deeply influential in the intellectual and emotional lives of most people.

**We need a system for intervening in our thoughts. We need to take rational command of our cognitive processes in order to rationally determine what to accept and what to reject. In short, we need standards for thought, standards that guide us to consistently excellent thinking – standards we can count on taking our thinking on track, to help us mirror in our minds what is happening in reality, to reveal the truth in situations, to enable us to determine how best to live our lives.**

We posit that there are at least nine intellectual standards important in conducting affairs of everyday life. These are clarity, precision, accuracy, relevance, depth, breadth, logic, significance, and fairness.

Beginning with these nine intellectual standards will help set the stage for conceptualizing intellectual standards more broadly and for appreciating the essential role of intellectual standards in human reasoning.




**Triangle of Thinking, Feeling, and Wanting**

Everyone thinks. It is our nature to do so. But much of our thinking left to itself is biased, distorted, ill-founded, or prejudiced. Much of our thinking leads to problems in our lives. Much of our thinking leads to cruelty and injustice. Of course, the mind doesn't just think. It also feels and wants. What is the connection? Our thinking shapes and determines how we feel and what we want. When we think well, we are motivated to do things that make sense and methodical to act in ways that help rather than harm ourselves and others.

At the same time, powerful emotions or desires influence our thinking, help or hinder how well we think in a situation. At any given moment, our minds that comprise of our thoughts, feelings and desires can be under the sway of our rationality or our potential reasonableness. When we are ruled by our rational decisions, we see the world from a more self-serving perspective. We are not truly concerned with how our behavior affects others. We are fundamentally concerned with getting what we want and/or with validating our beliefs and views.

The key to understanding human thought then, is to understand its essential duality: its capacity for rationality (being trapped in egotism and/or inaccurate thought with its attendant self-deception, self-deception, rationalizations, and so forth) and its capacity for reasonability (being freed from self-deception, myths, and delusions. Through training, feeling and wanting are, in principle, equally important. It is only through thinking that we take command of our minds. It is through thinking that we figure out what is going wrong with our thinking. It is through thinking that we figure out how to deal with obstructive emotions. It is through thinking that we change our perspective (desires) to produce action. It is through reasonability for thinking that we understand others and ourselves. It is through thinking that we understand our minds and its functions. It is through thinking that we understand our development caused by egotism and egotistical thought. If we work upon our mind in a daily regimen, we can take the steps that lead to our empowerment as thinkers.

**To learn more about the relationship between thoughts, feelings and desires, read *The Thinker's Guide to Taking Charge of the Human Mind*, pp. 3-10.**



The  
Critical  
Thinking  
Community

[www.community.criticalthinking.org](http://www.community.criticalthinking.org)



## Critical Thinking Seminar

### EDUCATOR'S ACADEMY SEPTEMBER 26 - 29, 2019

AT COMPTON GARDENS,  
BENTONVILLE, NW ARKANSAS

Thursday & Friday, Sept. 26-27: Improving  
Authentic Assessments Using Critical Thinking

Saturday & Sunday, Sept. 28-29 - Socratic  
Questioning through a Robust Conception  
of Critical Thinking



We will also offer an advanced strand using the Oxford Tutorial Approach infused with critical thinking for those returning and for those seeking certification.

**To register or for more details – visit:**  
**[www.criticalthinking.org](http://www.criticalthinking.org) and select *Conferences & Events***

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ADVANCE THEIR REASONING ABILITIES!

CT700: HOW TO INFUSE CRITICAL THINKING  
INTO INSTRUCTION

For instructors interested in developing their understanding of critical thinking and their ability to bring it into the foundation of instruction. This course is for teachers and faculty actively teaching during the semester. Academic credit is also available through Sonoma State University.

This course introduces a substantive conception of critical thinking and how to infuse this concept throughout your instruction. It fosters understanding of how to teach critical thinking skills to students through any subject or discipline, and at any level of instruction. In this course,

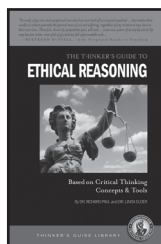
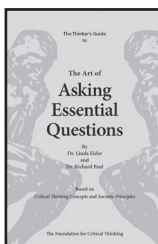
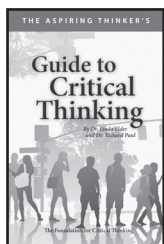
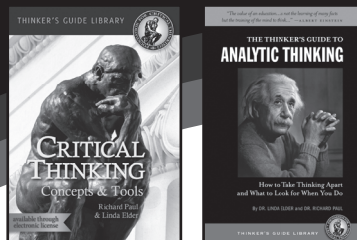


you will be introduced to the elements of reasoning, universal intellectual standards, and intellectual traits through readings, discussions, and practical application activities. You will redesign lessons and strategies using the concepts and principles of critical thinking. You will practice strategies for Socratic discussions. You will help students learn to consciously use critical thinking concepts and strategies in learning, and in their lives.

You will redesign and teach lessons you develop for your own classes - and receive credit for doing so!

**To register or for more details – visit:**  
**[www.criticalthinking.org](http://www.criticalthinking.org) and select *Online Courses for Instructors***

## ROWMAN & LITTLEFIELD IS PLEASED TO ANNOUNCE OUR NEW PARTNERSHIP WITH THE FOUNDATION FOR CRITICAL THINKING



Since its inception, the FCT has originated, created, developed, and published numerous books, thinker's guides, textbooks, and other instructional materials focused on illuminating the explicit tools of criticality. As of June 1, 2019, these FCT products will now be sold by Rowman & Littlefield.

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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](http://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



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