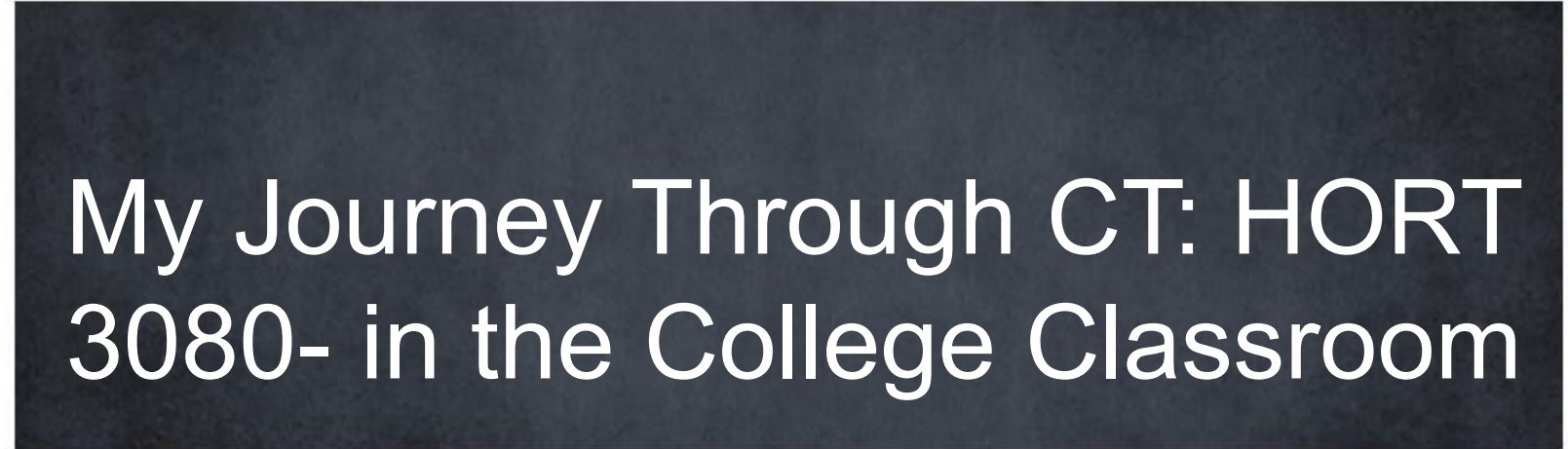




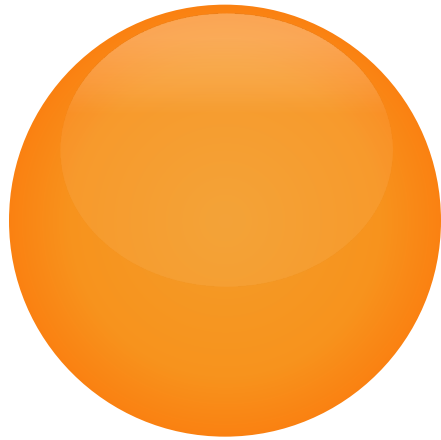
Dr. Ellen Vincent
Clemson University 



My Journey Through CT: HORT 3080- in the College Classroom



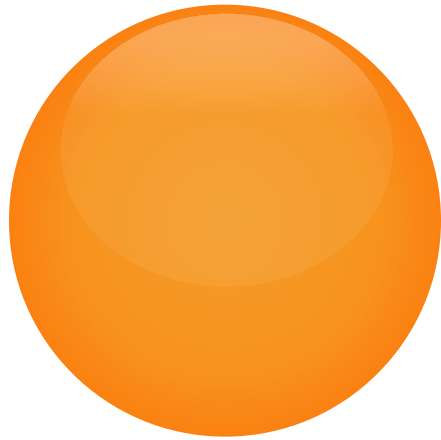
CT2 Faculty Learning Institute June 11, 2024



GOAL:
**USE TEACHING PROCESSES THAT CAN
EVOLVE AND ENCOURAGE STUDENTS
TO BE POSITIVE CHANGE AGENTS.**

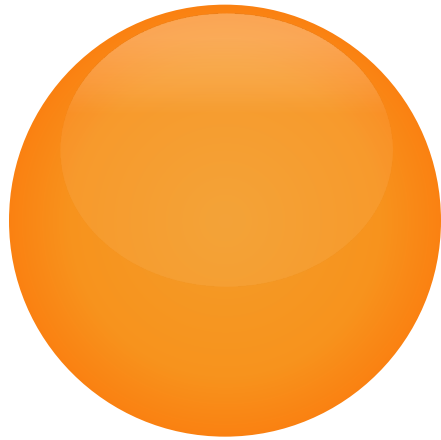
Dr. Ellen Vincent





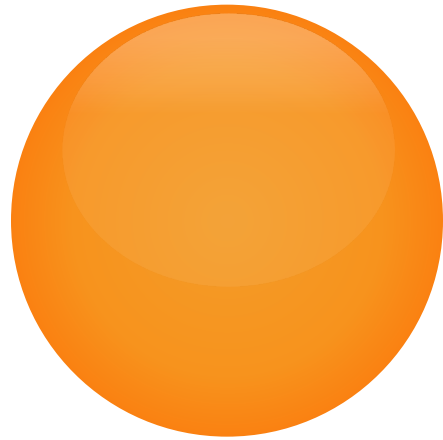
**TECHNIQUES:
INCORPORATE DIVERSITY AND
WORKPLACE READINESS
EVERYWHERE**

See Teaching Philosophy Statement Dr. Ellen Vincent



**TECHNIQUE:
BLEND LEARNING STYLES: COGNITIVE,
AFFECTIVE & EXPERIENTIAL TO BETTER
REACH ALL**

See Teaching Philosophy Statement Dr. Ellen Vincent



**ASSESSMENT:
SEEK PROOF OF STUDENT
LEARNING**

See next slide Dr. Ellen Vincent

Critical thinking assessment

- **Rubrics** that result in **essay artifacts** that demonstrate student knowledge of process.
- **Worksheets** that show **teams in process**.
- **Test questions** that identify **individual strengths and challenges**.
- **Exit survey questions** that identify **personal and professional topics of value**-which can inform future teaching.

Syllabus-HORT 3080 CT²

HORT 3080 CT² Sustainable Landscape Garden [2019] Design, Installation, & Maintenance

Sustainable Sites:

Holly Owings, MLA



<http://earthdesignsc.com/about/staff/>

Watt Center Green Roof



Lady Bird Johnson Wildflower Center



Photos by Ellen Vincent

Critical Thinking:

Judge Ricardo Urbina Dr. Frank Fear



David Brooks



Author Chamamanda. N. Adichi



Syllabus-HORT 3080 CT²



Critical Thinking Student Learning Outcomes

- (1) Explore complex challenges associated with sustainable landscape design, installation and maintenance.
- (2) Analyze sustainable design problems using multiple lenses and perspectives.
- (3) Extrapolate from one conceptual context to others in the sustainable landscape.
- (4) Develop creative solutions to complex challenges.
- (5) Communicate complex ideas effectively.

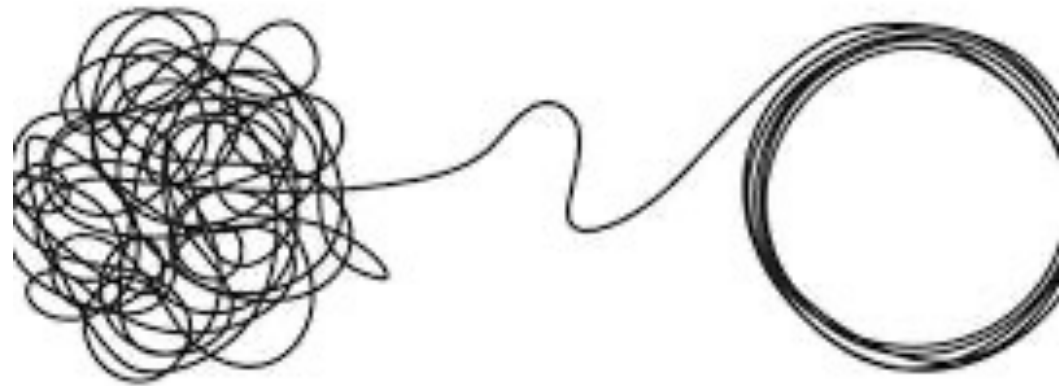
This class is a Clemson Thinks2 (CT2) seminar –developed to increase and enhance your critical thinking skills

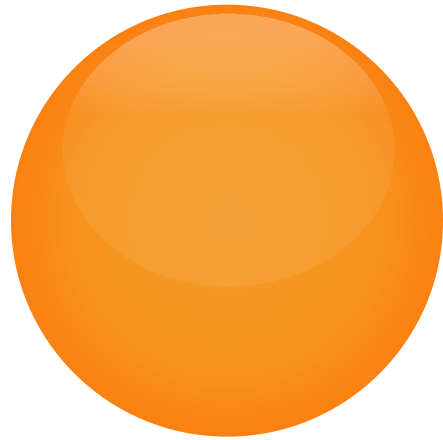


Introducing/defining complicated topics

- **Critical Thinking**
- **Sustainability**
- **Diversity**

- **Embrace messiness!**

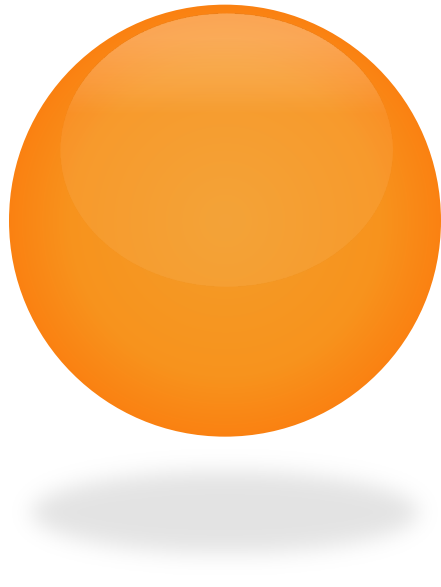




CRITICAL THINKING INTRODUCED/DEFINED

Actual class lecture slides show class number HORT 3080 on right



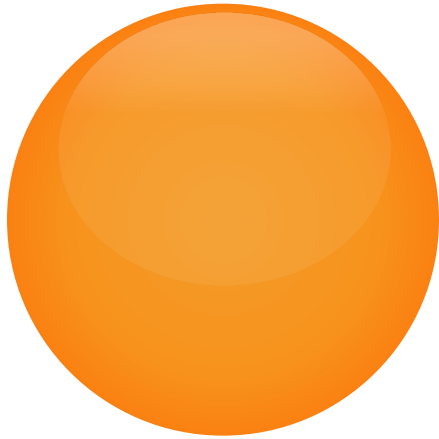


CRITICAL THINKING IS AN ANCIENT RICH CONCEPT

The practice and concepts are 2500 years old.

<http://criticalthinking.org/pages/defining-criticalthinking/766>

HISTORY



IT CAN BE TRACED IN THE WEST TO ANCIENT GREECE WITH ITS SOCRATIC METHOD AND IN THE EAST TO ANCIENT INDIA WITH THE BUDDHIST KALAMA SUTTA AND ABHIDHARMA LITERATURE.

<http://openmindspace.org/CriticalThinking>

Socrates

- Socrates 469–399 B.C.E., lived in Athens, Greece
- He never wrote anything. But Plato did.
- He was ugly, really ugly.
- He liked to talk and ask questions.
- He acknowledged women as teachers.
- Young people started to ask questions too.
- He was sentenced to death for *irreverence* to the gods and killed by drinking hemlock (*Conium maculatum*).



Socratic method

- Father of philosophy.
- **Questions** were asked to determine logic, ethics, fairness, and constancy.
- Inspired the scientific method (develop a hypothesis and then investigate validity.)



<http://en.wikipedia.org/wiki/Socrates>
<https://plato.stanford.edu/entries/socrates/>

[ps://www.amazon.com/SOCRATES-Translated-Introductory-Huntington-Illustrations/dp/B01DRMUZ8Y](https://www.amazon.com/SOCRATES-Translated-Introductory-Huntington-Illustrations/dp/B01DRMUZ8Y)

Sculpture by Constantin Brancusi

Socratic principle--Linda Elder



<http://lindaelderart.com/about.html>

Dr. Linda Elder, President
Foundation for Critical
Thinking; CA

THEY EMBODY THE SOCRATIC PRINCIPLE: *THE UNEXAMINED LIFE IS NOT WORTH LIVING*, BECAUSE THEY REALIZE THAT MANY UNEXAMINED LIVES TOGETHER RESULT IN AN UNCRITICAL, UNJUST, DANGEROUS WORLD. (ELDER BIOGRAPHY)

<http://www.criticalthinking.org/data/pages/14/fd4e6f74cc717ed36a9facc870b8a2e4fe0bd688b279.pdf>



<https://www.uleth.ca/notice/events/linda-elder-state-critical-thinking-human-societies-today#.XvM3ryhKg2w>

LINDA ELDER, PH.D. EDUCATIONAL PSYCHOLOGIST AUTHOR AND TEACHER OF CRITICAL THINKING

Career began in Memphis, TN with
underprivileged youth

**President of the Foundation for Critical
Thinking and Executive Director of the
Center for Critical Thinking**

<https://www.criticalthinking.org/>



(1937-2015)

RICHARD PAUL, PH.D. AWARD WINNING AUTHOR AND TEACHER OF CRITICAL THINKING

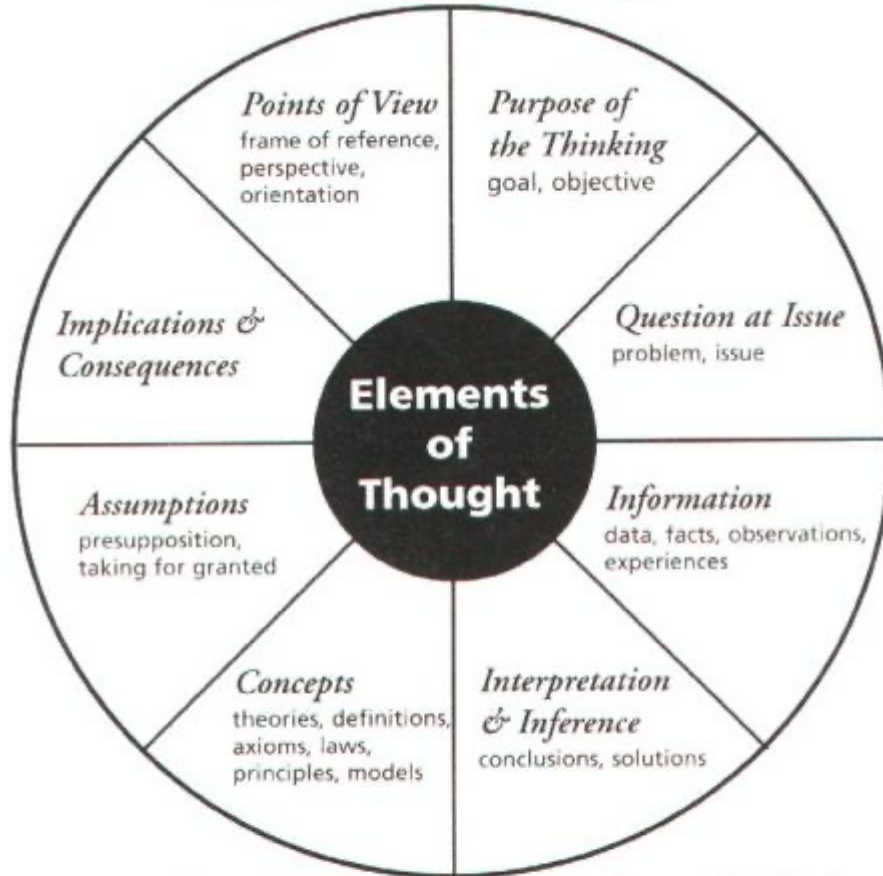
Earned 4 degrees; Director of Research and Professional Development at the Center for Critical Thinking; and Chair of the National Council for Excellence in Critical Thinking; Philosophy Professor at Sonoma State University.

Authored 8 books and over 200 articles

<http://www.criticalthinking.org/pages/dr-richard-paul/818>
<https://www.criticalthinking.org/pages/richard-paul-memorial/1231>

Critical thinking definitions

The Elements of Thought



CRITICAL THINKING WHEEL

Used With Sensitivity to Universal Intellectual Standards

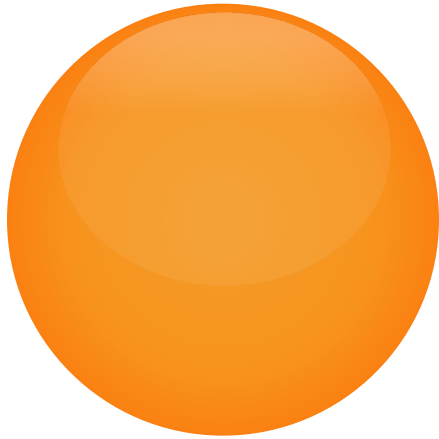
Clarity → Accuracy → Depth → Significance
Precision
Relevance

Critical thinking definitions-historic



http://3.bp.blogspot.com/-SRxM-4_fG6o/Tye7O48UZ3I/AAAAAAAAADNI/pluT8-qU0Kc/s400/Critical+Thinking+is...+Francis+Bacon.jpg

Critical thinking - Richard Paul



**WE QUESTION OUR OWN PURPOSES,
EVIDENCE, CONCLUSIONS,
IMPLICATIONS AND POINT OF VIEW
WITH THE SAME VIGOR AS WE
QUESTION THOSE OF OTHERS.**

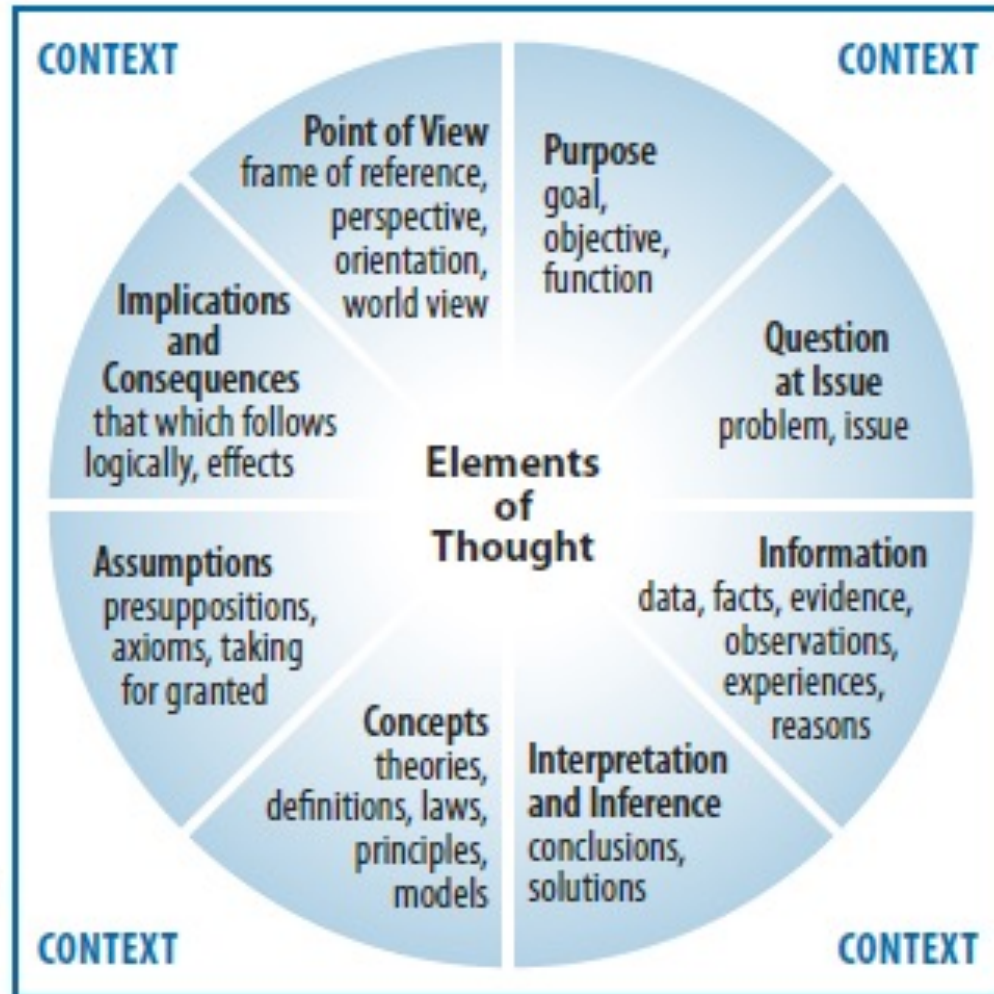
(PAUL BIOGRAPHY BY ELDER)

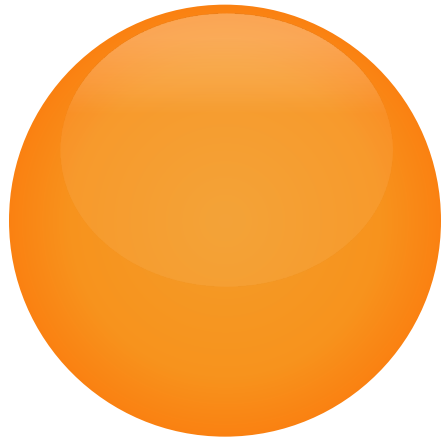
<http://www.criticalthinking.org/data/pages/37/ff640b6d016307b54cad91e5a9d4edfd4f18adb74215a.pdf>
<http://www.criticalthinking.org/data/pages/14/fd4e6f74cc717ed36a9faccc870b8a2e4fe0bd688b279.pdf>

Richard Paul-The Elements of Reasoning

Thinking, then:

- generates purposes
- raises questions
- uses information
- utilizes concepts
- makes inferences
- makes assumptions
- generates implications
- embodies a point of view





CRITICAL THINKING IS AN INTELLECTUALLY DISCIPLINED PROCESS

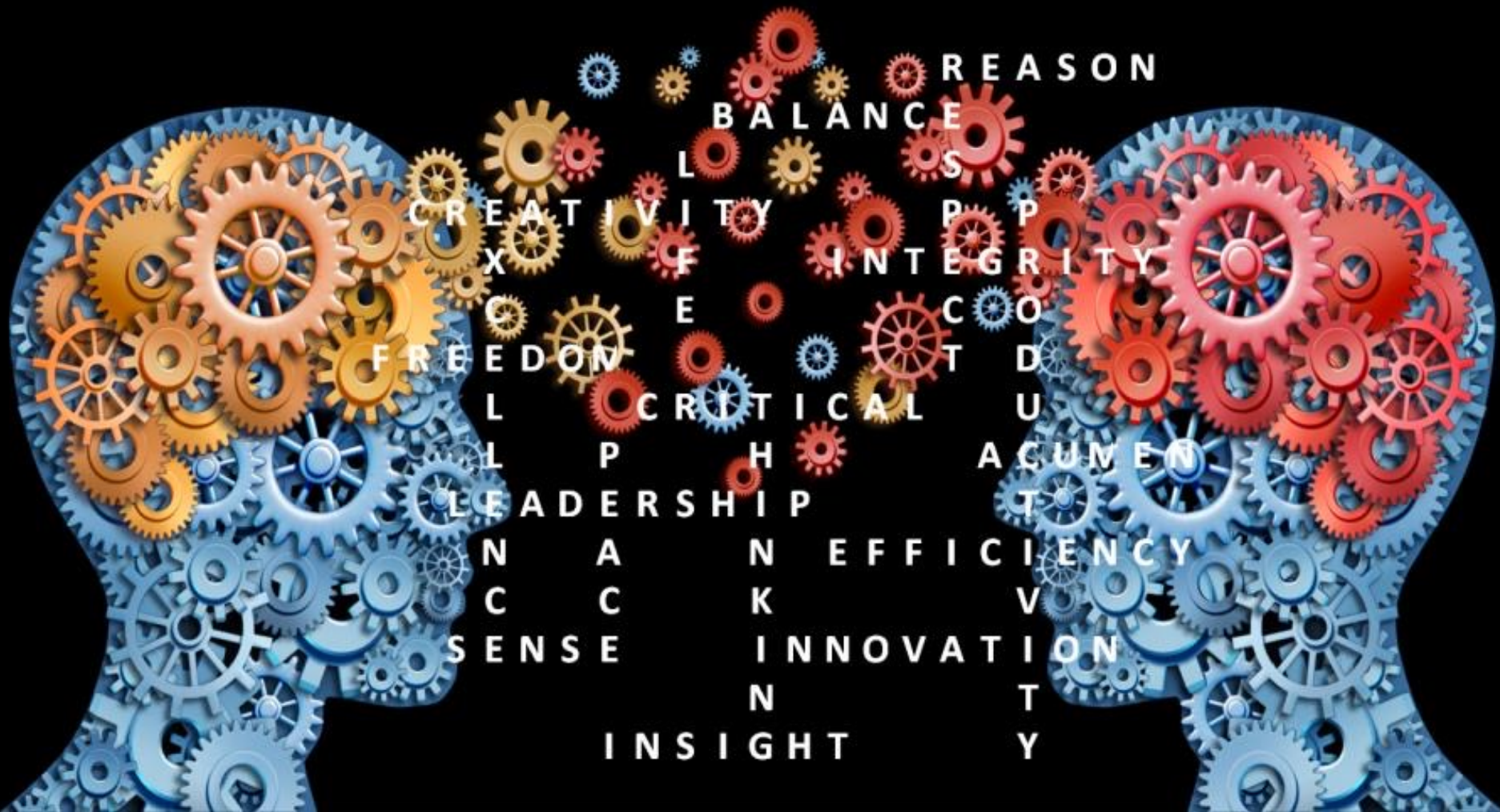
<http://criticalthinking.org/pages/defining-criticalthinking/766>

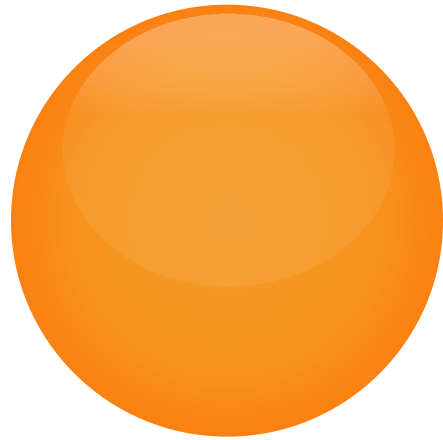
Critical thinking

- Critical thinking happens when we think about how we think... we track our own thoughts and decision making processes (Vincent, 2013).
- Critical thinking...the awakening of the intellect to the study of itself (Scriven & Paul, 1987 from the Foundation for Critical Thinking Defining Critical Thinking at <http://www.criticalthinking.org>).



<http://sandykumskov.com/images/think.jpg>





SUSTAINABILITY DEFINED/INTRODUCED

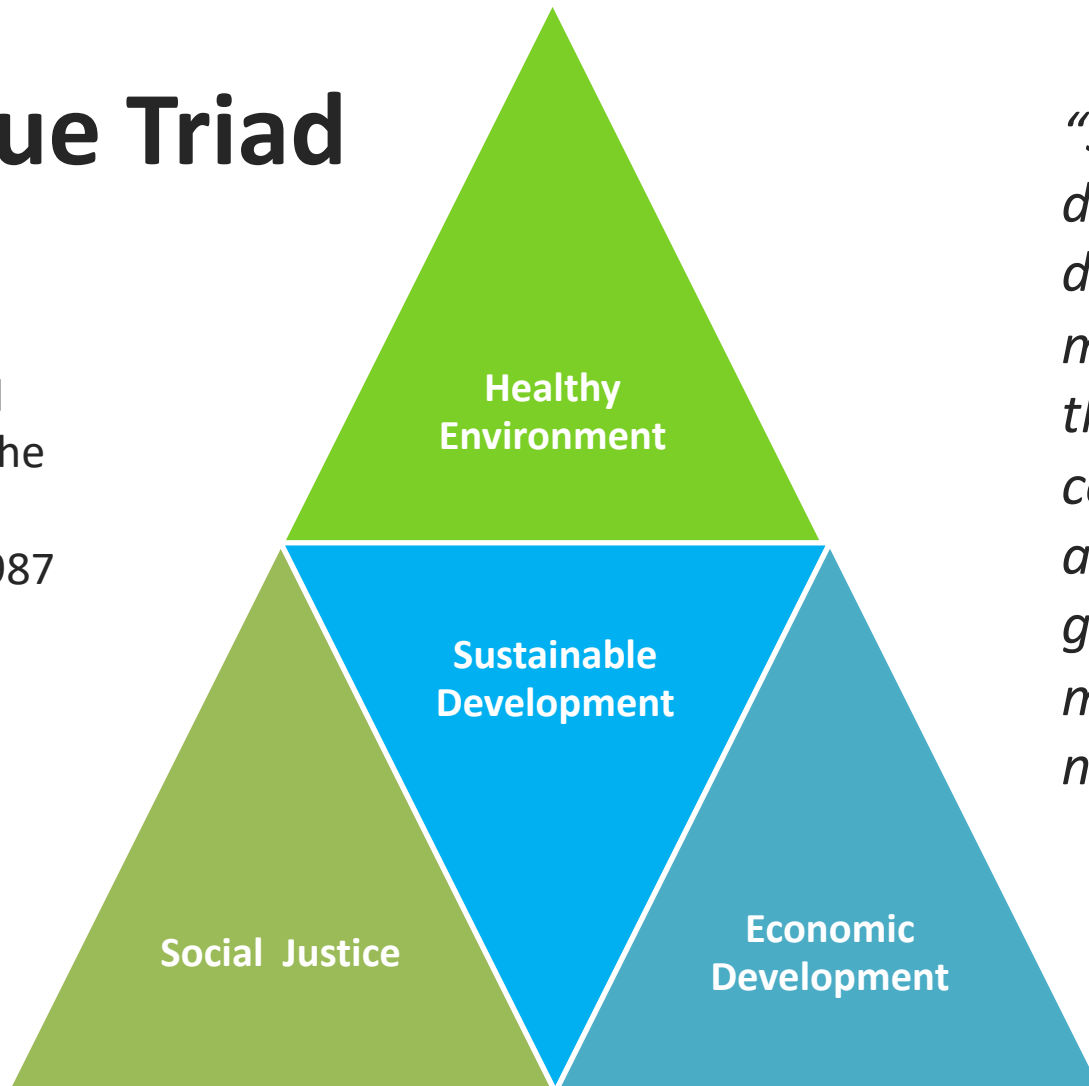
Historic and Contemporary



Sustainability defined-historic

Issue Triad

Brundtland
Report to the
United
Nations, 1987

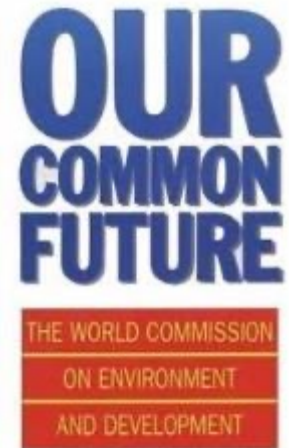


“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (1987, p. 8).

Issue triad created by E. Vincent using *Our common future* (1987) pp.37-38
The World Commission on Environment and Development (1987), *Our Common Future*. Oxford:
Oxford University Press

Gro Harlan Brundtland (b. 1939)

- Norwegian Minister for Environmental Affairs (1974-1979)
- Prime Minister of Norway (Feb –Oct 1981, May 1986-Oct 1989)
- Chair of United Nations World Commission on Environment and Development, published *Our Common Future* (April, 1987) aka The Brundtland Report
- Commissioners: 22 people 21 countries



Amazon prices:

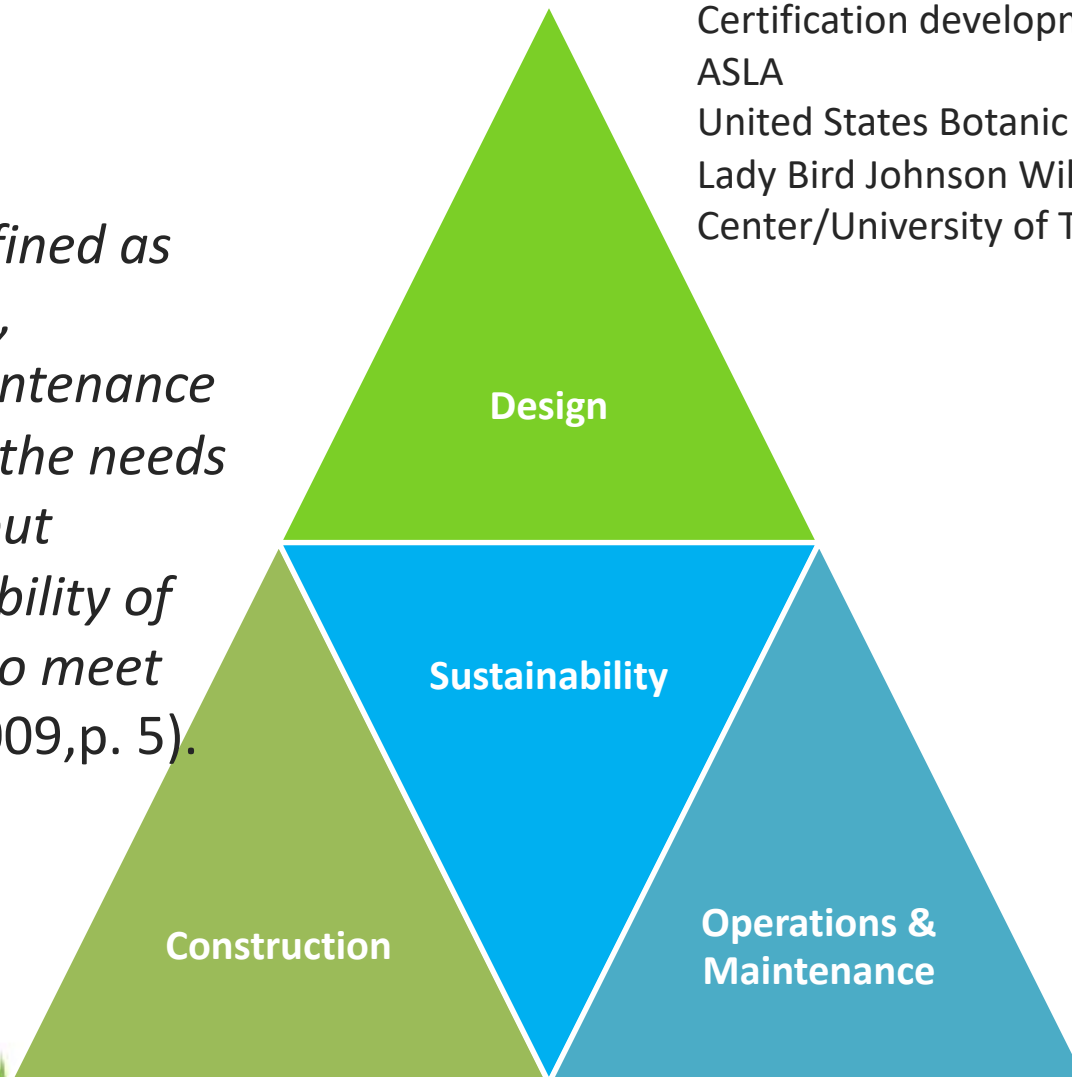
\$24.95 new

\$4.95 used

http://en.wikipedia.org/wiki/Gro_Harlem_Brundtland

Sustainability defined-contemporary

“Sustainability is defined as design, construction, operations and maintenance practices that meet the needs of the present without compromising the ability of future generations to meet their own needs” (2009, p. 5).



Certification development authors:
ASLA
United States Botanic Garden
Lady Bird Johnson Wildflower
Center/University of Texas at Austin

The Case for Sustainable Sites, 2009, p. 5

Sustainable Sites Initiative, (2009). *The case for sustainable landscapes.*

Sustainability: Modern definition creators, 2009

THE SUSTAINABLE SITES INITIATIVE™



- www.sustainablesites.org/



- <http://asla.org/>
- <http://www.wildflower.org/>
- <http://www.usbg.gov/>



Sustainability evolved-contemporary

2015-Sustainable SITES Initiative SITES® is produced by Green Building Certification Inc. (GBCI)

SITES v2 includes **18 prerequisites and 48 credits** for measuring site sustainability. To achieve certification, projects can earn a total of up to 200 points at the **Certified, Silver, Gold or Platinum** levels.

The rating system is divided into 10 sections, which cover **site context, design and construction, operations, maintenance, education and innovation**.

These strategies cover both **predesign and construction activities** and are tied together through an integrative process.

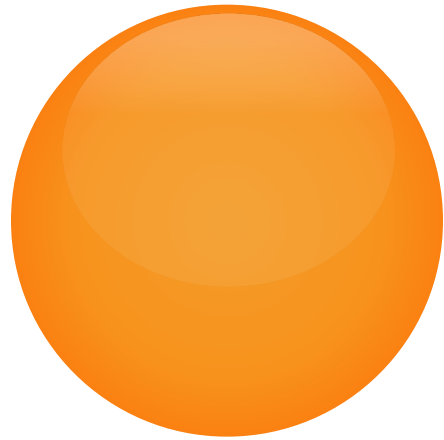
Program is designed to evolve over time.

Sustainable
SITES
Initiative™

https://www.asla.org/uploadedFiles/CMS/AboutJoin/Copy%20of%20SITESv2_Scorecard%20Summary.pdf

<http://www.sustainablesites.org/certified-sites>

<http://www.sustainablesites.org/about>



DIVERSITY: DEFINED/INTRODUCED

International, National, Local



What is diversity?

The condition or fact of being different or varied; variety:

- *a wide diversity of opinion/ideas*
- *genetic/biological diversity*

The fact of many different types of things or people being included in something; a range of different things or people

Definition of “diversity” from the [Cambridge Business English Dictionary](#) © Cambridge University Press

<https://dictionary.cambridge.org/us/dictionary/english/diversity>

What is diversity?

- Individual differences (e.g., personality, prior knowledge, and life experiences) and group/social differences (e.g., race/ethnicity, class, gender, sexual orientation, country of origin, and ability as well as cultural, political, religious, or other affiliations). AACU



Association of American Colleges and Universities

Moryah Jackson FLC: Diversity email 3/25/2019
Moryah Jackson, Former Clemson Director of Diversity
Education Office of Diversity & Inclusion

Progress-FLC



“Remember, inclusion and equity is not instantaneous, nor is it easy. It is a progression of small, medium and large advancements that incrementally improve culture and understanding.”

--Moryah Jackson

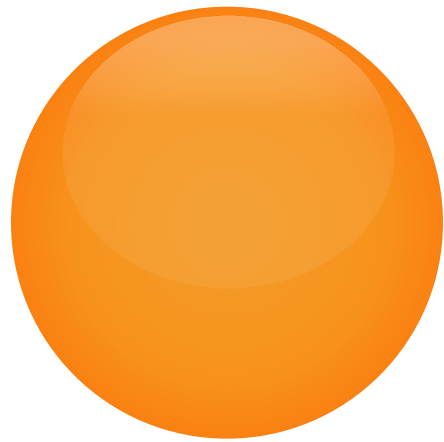
Director, Diversity Education, email 5/21/2019

France



Photo by Ellen Vincent

HORT 3080



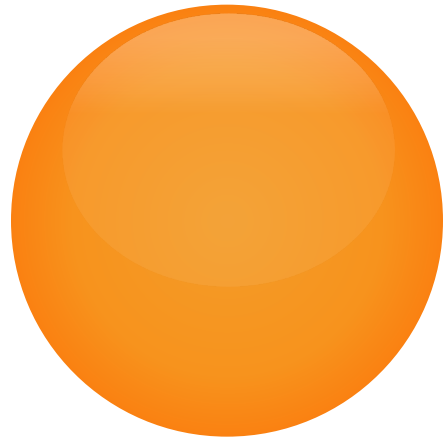
GROUP WORK

Dr. Ellen Vincent



Group Work & Critical Thinking

Group Work Problem	Solution
Students claim others don't contribute.	Conduct group work (not assignments) in class.
Some students feel they need to do all the work to ensure they will attain a high grade.	Offer professional communication strategies (engagement, dialogue and positive psychology) for them to try out in small groups in class.
Critical Thinking Problem	Solution
Definitions unclear	Provide multiple definitions: historic and contemporary; global and local; introduce real people; questions; embrace messiness
Relevancy	Use subject specific problems and outcomes; relate to workplace problem solving



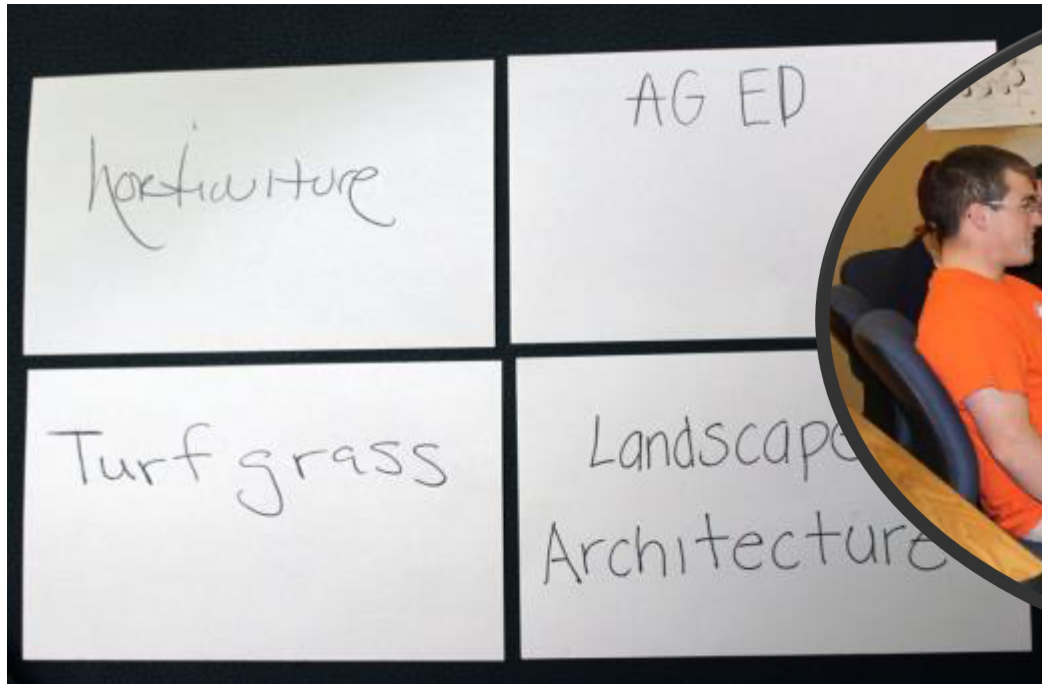
CREATING INTERDISCIPLINARY TEAMS IN THE CLASSROOM

Fair, random



Tool: Form mixed major teams

- ***Form interdisciplinary teams by mixing majors***
 - *Sort by major, shuffle cards, student rep from various majors select cards for team in full view, no personal names visible*



Tool: Group exercises

- *Provide clipboards and worksheets to professionalize the experience*
- *Worksheets contain space for name and major*



Tool: Group exercises

Group exercise: Sustainable Communications | HORT

Name	Major
1	Architecture
2	Hort
3	Civil Engineering
4	LAHC

State a claim (clear and obvious) made by authors (like a hypothesis) about engagement and/or dialogue:

In order for a group to be successful^{in a dialogue setting} every member must be included and energetically engaged, through maintenance and facilitation

Validity checks (search for truth) using three methods/sources:

1-Experiential (personal or others)

Multi- or interdisciplinary work with conflicting or multiple opinions. (e.g. lab work, architecture projects)

2-Authoritative (professors, .gov; .edu; non-profit organizations)

A contractor who has to deal with ...

2-Authoritative (professors, .gov; .edu; non-profit organizations)

A contractor who has to deal with and help converge ideas from a number of different professions on a daily basis.

3-Disciplined (peer reviewed lit, published surveys and experiments)

Published peer reviewed article on the subject of communication and engagement.

Alternate views/perspectives

Identify people or organizations who may disagree with the claim.

State the source of the view.


- A CEO who wants to have the final say on decisions, despite other opinions
- Control oriented people in positions of power
- A tenured professor who doesn't have Intellectual humility

HORT 3080 Group exercise: Sustainable Garden | CT2

Name	Major	Name	Major
1	He LA	3	EA. HORT
2	LA	4	Hort

Viewpoint from your discipline

Beliefs/claims (clear and obvious) of authors (like a hypothesis):



Be mindful of design process in working with other disciplines.

Methods/sources for checking validity

Experiential (personal or others):

How we feel and know about the claim through our own LA and design experience.

Authoritative (professors, .gov; .edu; non-profit organizations):

Ask professors about personal experience working w. collaboration / local consultants / viewpoints from ^{college} books

Disciplined (peer reviewed lit, published surveys and experiments):

Clemson extension for published surveys.

ASK professors about personal experience working w
collaboration / local consultants / viewpoints from books college

Disciplined (peer reviewed lit, published surveys and experiments):

Clemson extension for published surveys.

Multiple views: Perspectives (your own or imagined others) that do not support your claim. State the source of the view.



Prestigious design artists in different states or countries.

-they have been so highly regarded, they have "faith" in their design and don't plan to look and listen to outside sources.

Use reverse side if needed



Group Work: Oral presentations

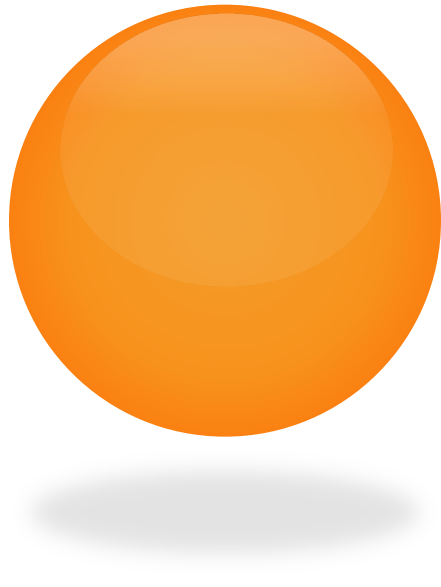
- **Workplace readiness:** Needed for successful professional team and client communications
- **Techniques:**
 - Stand up and address the whole room visually and verbally
 - Respectfully share the team perspective
 - Refer to team members by name and major

Rubric: Oral presentation

Group oral presenting: Grading rubric | HORT

Grading rubric 100 points total

	Item: Group content	Points earned
Content	Presenter represents the entire group <i>-Converging and differing views are respectfully represented. People's names or majors should be used when possible.</i>	50
	Technique	
Technique	Professional group presenters	
	Presenter stands and addresses the audience in the room (not the clipboard or table top) Presenter calls on team members when necessary to explain or add information	30 20
	Total	100



WHY USE INTERDISCIPLINARY WORK GROUPS IN THE CLASSROOM?

To contribute to positive solutions in the workplace and world

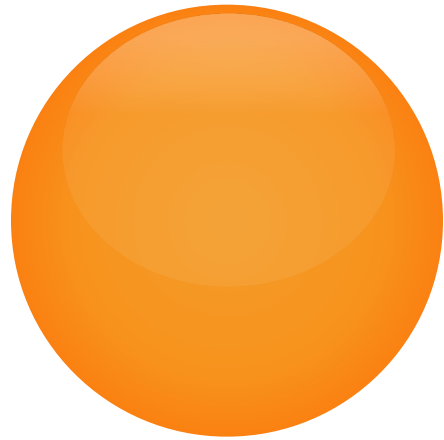
Shared leadership

Nelson
Mandela
convenes
The
Elders in
2007
(July 18)



http://desertpeace.files.wordpress.com/2009/09/the_elders.jpg

<https://theelders.org/nelson-mandela>



INTELLECTUAL TRAITS

Dr. Ellen Vincent



Intellectual Traits

Benefits:

- Allows for reflection and experimentation within interdisciplinary groups
- Socratic questioning moves from knowing it all to exploration and discovery
- Short answer test questions show personal and professional value

Critical thinking intellectual traits

- Intellectual humility
- Intellectual autonomy
- Intellectual integrity
- Intellectual courage
- Intellectual empathy
- Intellectual perseverance
- Confidence in reason
- Fairmindedness



<https://www.pinterest.com/pin/322148179572194734/>

HORT 3080

The Foundation for Critical Thinking

<http://www.criticalthinking.org/pages/critical-thinking-where-to-begin/796>

Test 3 Q#49 student response

Which intellectual trait are you becoming stronger at using or recognizing this semester? Identify and explain.

- *“Fairmindedness. Prior to this class, I would sometimes see another person's viewpoint that was completely different than mine and then look down upon them for thinking a different way. After being in this class this semester, I have truly begun to look at other people's viewpoints as a way of understanding them better. It has truly shown me that everyone is different and experiences different things, which then leads to different viewpoints.”*

Test 3 Q#49 student response

Which intellectual trait are you becoming stronger at using or recognizing this semester? Identify and explain.

- *“Intellectual empathy. Having worked in the role of a service provider for the last six or seven months has really granted me a new lens from both sides of the counter. I realize that I can never really understand what other people are going through so there's no good reason for me to stress them out more. Understanding what other people have issues with and doing what I can to mitigate those issues is one of my favorite aspects of working with customers.”*

Test 3 Q#50 student response

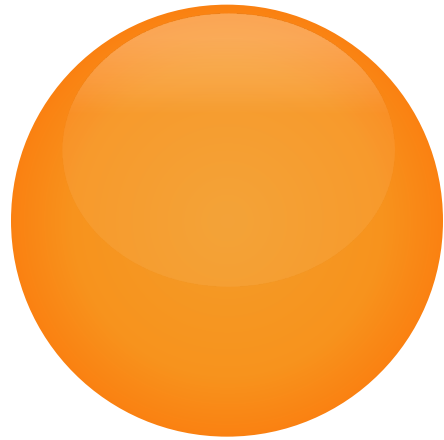
Which intellectual trait do you wish to learn more about and practice?

- *“I would like to learn more about **intellectual perseverance** to learn how to stay true to what I know during difficult times and hardships. I will definitely face more hardships during my life and would love to learn how to remain intellectually strong during these.”*
- *“**Intellectual humility** - having an awareness of the limits of one's knowledge, egocentricism and/or bias.”*

Test 3 Q#50 student response

Which intellectual trait do you wish to learn more about and practice?

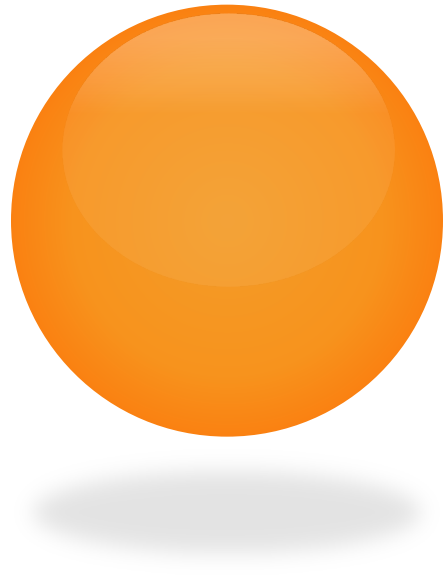
- *“Intellectual courage. I have always had a hard time expressing my personal claims/intellectual views on something due to fear of rejection or doubt. After taking this class and doing so many critical thinking activities, I believe that the confidence to speak out on things has improved in me.”*



WRITING EXERCISES

Dr. Ellen Vincent





CT² VISUAL REFLECTION ESSAY

Clear expectations/samples/common errors posted



CT2 Visual Reflection Essay

New knowledge + reflection/past experience = actions

I. Cognitive: New knowledge

II. Affective: Reflection/past experience

III. Experiential: Resulting personal actions

Diversity: Alternate view (assessment measure);

Photo (self expression; adds art to text)



Critical Thinking Visual Essay Items

1. Identify a claim/belief/assumption from the readings or class that you personally connect with.
2. Investigate the validity of the claim/belief/assumption.
3. Explore or look at the issue using multiple viewpoints.
4. Reflect from your past and tell the story.
5. Conclude with personal *informed* actions.
6. Add an image that supports your search.
7. Cite the image.



Sustainable Landscape Garden Design, Installation, & Maintenance HORT 3080

**HORT
CT²**

Critical Thinking Protocol in Visual Essay

Grading rubric: 100 points total

Each essay should contain a header that includes: Name; Class title; Date; CT2 Visual Essay

Save the essay with your last name and the essay # in the saved file name: e.g. Vincent_CT2 essay1

Critical Thinking Essay Item	Points
<p>Identify a claim/belief/assumption from class or readings that you personally connect with:</p> <p>Identify and clearly state a specific claim/belief/assumption that you perceive. Include the source(s) you are using in the text. Do not use quotes-use your own words.</p>	10
<p>Investigate the validity of the claim/belief/ assumption:</p> <p>How can you check the author's claim/belief/assumption for accuracy and validity? Be specific and use a minimum of two methods to determine the legitimacy of the author's claims.</p> <p>Experiential (personal experience); authoritative voices (professors, .gov, .edu sites); disciplined (peer reviewed literature; surveys; fact checks; repetition of experiments, etc.)</p>	20
<p>Explore alternate possibilities/conclusions using multiple viewpoints:</p> <p>What other possible perspectives, explanations, or interpretations can you suggest for a deeper understanding of the claim/belief/assumption? State the source of the view.</p>	10
<p>Reflection from your past:</p> <p>Using your own personal experiences share a story from your past that was triggered by the claim/belief/assumption. Make it vivid so the reader feels as though they were there with you.</p>	10

Cognitive

Cognitive

Cognitive

<p>Investigate the validity of the claim/belief/ assumption:</p> <p>How can you check the author’s claim/belief/assumption for accuracy and validity? Be specific and use a minimum of two methods to determine the legitimacy of the author’s claims.</p> <p>Experiential (personal experience); authoritative voices (professors, .gov, .edu sites); disciplined (peer reviewed literature; surveys; fact checks; repetition of experiments, etc.)</p>	<p>20</p>
<p>Explore alternate possibilities/conclusions using multiple viewpoints:</p> <p>What other possible perspectives, explanations, or interpretations can you suggest for a deeper understanding of the claim/belief/assumption? State the source of the view.</p>	<p>10</p>
<p>Reflection from your past:</p> <p>Using your own personal experiences share a story from your past that was triggered by the claim/belief/assumption. Make it vivid so the reader feels as though they were there with you.</p>	<p>10</p>
<p>Concluding personal informed actions:</p> <p>What informed action can you take in your daily life as a result of your critical analysis? Sit back and think about your critical examination of this topic. -What has changed (if anything)? <i>“I now plan to...”</i> or -What will you do now and why? Use “I” in this concluding section. Sample: <i>“As a result I will...”</i> or <i>“From now on I intend to...”</i></p>	<p>10</p>
<p>Image: Tells the story of your search all by itself</p>	<p>20</p>
<p>Image is correctly cited to source</p>	<p>20</p>
<p>TOTAL</p>	<p>100</p>

Affective

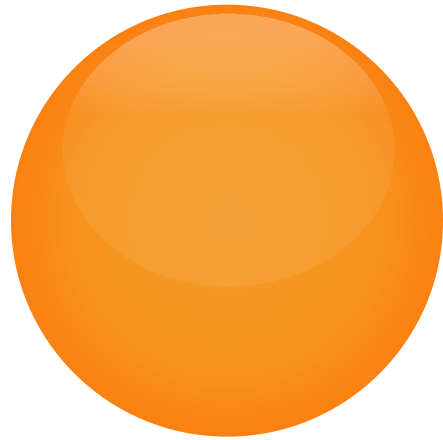
Kinesthetic

*Additional points may be lost for poor spelling and grammar or lack of header.



Community Garden Berkeley, CA

Photo by Ellen Vincent



TEST QUESTION RESPONSES FOR SUBJECT BASED STUDENT LEARNING



Q#46: What place/location featured or mentioned in class would you most like to visit?

Place to Visit	
Lady Bird Johnson Wildflower Center, Austin TX	26
Sierra Nevada Brewing Company, NC	8
SC Botanical Garden	2
Gardens of Versailles, France	1
Nigeria	1
Longwood Gardens, PA	1

Q#47: Which author, presenter, or person featured in this class would you most like to meet in person?

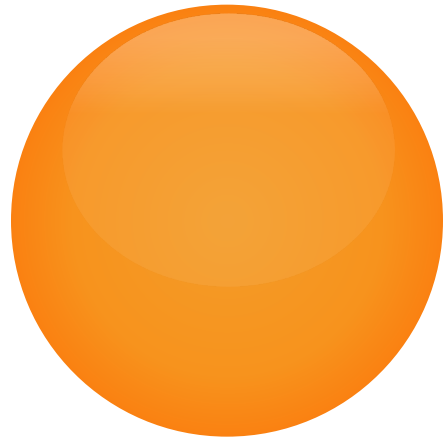
Person to Meet	
Susannah Horton, City of Asheville	16
Andrea Amaya-DeLong, Austin, TX	11
Lady Bird Johnson	2
Dr. Sarah White	2
Chimomanda Ndozi Adichi	1
Kaleigh Leasure	1

Q#48 Which intellectual trait have you seen becoming stronger at using or recognizing this semester?

Intellectual Traits-Strong	
Intellectual humility	14
Intellectual empathy	7
Fairmindedness	4
Intellectual perserverance	4
Intellectual courage	3
Intellectual integrity	2

#49: Which intellectual trait do you wish to learn more about and eventually practice?

Intellectual courage	9
Intellectual integrity	5
Intellectual perseverance	5
Confidence in reason	4
Fairmindedness	4
Intellectual empathy	3
Intellectual humility	2
Intellectual autonomy	2



EXIT SURVEY RESPONSES



Exit survey student responses

What one **belief/thought** has changed or altered as a result of taking this class?

- *“Listen to other people because they have opinions that matter.”* FORESTRY
- *“Being open to listen and plan with the landscape maintenance team during the planning stages.”* HORTICULTURE
- *“That all majors and disciplines are capable of working in a group and learning from each other.”* ANTHROPOLOGY

Exit survey student responses 2017

What one **belief/thought** has changed or altered as a result of taking this class?

- *“I have become more open to others’ opposing viewpoints on controversial topics.”*

AGRICULTURE EDUCATION

- *“I learned to be open-minded. I have learned to look at things from a different perspective than just my own. There are 2 or more sides to every story.”*

Exit survey student responses 2017

What one **belief/thought** has changed or altered as a result of taking this class?

- *“I now use empathy when listening to other people’s viewpoints. I now look at a person’s viewpoint with a better understanding of how they feel about an issue.”* HORTICULTURE

Exit survey student responses 2017

What one **belief/thought** has changed or altered as a result of taking this class?

- *“That I need to [take] into account other peoples thoughts and feelings more.”*
TURFGRASS
- *“I take working in groups [to be] more intriguing and helpful. I get to see how others think.”* HORTICULTURE

Exit survey student responses 2017

What one **practice/behavior** has changed or altered for you as a result of taking this class?

- *“The ability to think from more than one perspective.”* AGRICULTURAL MECHANIZATION
- *“I am a better critical thinker because of my ability to listen and fair mindedness I learned from this class.”* AGRICULTURAL EDUCATION

Exit survey student responses 2017

What one **practice/behavior** has changed or altered for you as a result of taking this class?

- *“Working in interdisciplinary groups is a relatively new concept for me. Throughout this class my openness to other viewpoints has changed during the duration of this class.”*

ARCHITECTURE

- *“Working in groups and being fair minded with everybody.”* HORTICULTURE

Exit survey student responses 2017

What one **practice/behavior** has changed or altered for you as a result of taking this class?

- *“The ability to collaborate with multiple disciplines.”* ARCHITECTURE
- *“Group work”* MARKETING/MGT
- *“I will listen to everyone’s opinions with a more open mind.”* AG EDUCATION

HORT 3080 Exit Survey 2023

Personal and Professional Perceived Benefits and Value

Direct quotes taken - spelling errors not corrected

- **Summary:** 32 of 36 (89%) of students completed the Exit Survey/Questionnaire. Common themes covered include sustainability, critical thinking, group work, oral presentations, and plant design.

Exit Survey-2023 Personal Perceived Benefit

What one belief/thought has changed or altered for you as a result of taking this class?

- *“I now look deeper into things, such as confirming information I obtain by using multiple sources, rather than just taking what one source says as fact.”*
- *“The idea that even if you don’t agree with someone you should still always hear them out.”*
- *“Economic development and nature can coexist.”*

Exit Survey-2023 Personal Perceived Benefit

What one belief/thought has changed or altered for you as a result of taking this class?

- *“One belief I had is that all lawns are bad. I now know, that when implemented and managed well, they can actually be sustainable.”*
- *“ My belief in public speaking, telling myself that I cannot do it. After taking this class I feel more comfortable speaking in front of people. I had a presentation yesterday and taking your class helped me get through it. Your class made me believe in myself.”*

Exit Survey-2023 Professional Perceived Benefit

What skill did you acquire/experience/enhance that helps prepare you for success in the workplace as a result of taking this class?

- *“Working in teams was a great help that will help in the future because it is likely that much of my work will take place in teams of multiple people, rather than just myself.”*
- *“Critical Thinking”*

Exit Survey-2023 Professional Perceived Benefit

What skill did you acquire/experience/enhance that helps prepare you for success in the workplace as a result of taking this class?

- *“I know how to complete meaningful plant profiles and how to find accurate information on plant species.”*
- *“I learned lots of new skills, like taking soil samples. This will be super helpful for me as a landscape architect when I’m taking inventory of a site. I’ll be able to use the data to decide what can be built or planted in a certain space.”*

Exit Survey-2023 Professional Perceived Benefit

What skill did you acquire/experience/enhance that helps prepare you for success in the workplace as a result of taking this class?

- *“Mainly listening to others. I feel like its hard to have a successful work environment if it’s run like a monarchy rather than a democracy. This class really showed the importance of collaboration and listening to what others have to say because it could open your mind a little bit and change or even reinforce your opinions.”*

Critical thinking assessment

- **Rubrics** that result in **essay artifacts** that demonstrate student knowledge of process.
- **Worksheets** that show **teams in process**.
- **Test questions** that identify **individual strengths and challenges**.
- **Exit survey questions** that identify **personal and professional topics of value**-which can inform future teaching.

Gratitude to Dr. David Knox

Hosts annual educational institutes

Supports exploratory and diverse CT2 expression

Conducts exercises in class that allow students to see CT as personal



CT2 Faculty Institute 2022

<https://www.clemson.edu/academics/programs/thinks2/institute/2022.html>

<https://clemson.academia.edu/DavidKnox>

https://www.google.com/search?q=daniel+yankelovich&rlz=1C1CHBF_enUS783US783&source=lnms&tbn=isch&sa=X&ved=0ahUKEwiH7Znsw5TcAhVjnuAKHZO3CTkQ_AUICygC&biw=901&bih=1087#imgrc=TM6Lkb7qWqiiFM

https://www.google.com/search?q=daniel+yankelovich&rlz=1C1CHBF_enUS783US783&source=lnms&tbn=isch&sa=X&ved=0ahUKEwiH7Znsw5TcAhVjnuAKHZO3CTkQ_AUICygC&biw=901&bih=1087#imgrc=gS6E2lwWc7n7WM

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- CAFLS Excellence in Teaching Award 2016
- Louis P. Parsons Award for Outstanding Service to Nursery and Landscape Industry 2015

Horticulture/Plant & Environmental Sciences



Photo by Mahaffey, Clemson University