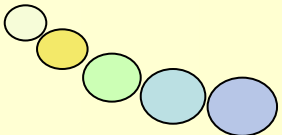


# **A Systematic Strategy to Foster Critical Thinking in the EFL Classroom**

11th National ELT Conference  
The Critical Thinker: Mind over Matter  
Bogotá, Colombia.



5SCT

Nancy Gutiérrez & Alicia Arráiz

April 2008



# A Systematic Strategy to Foster Critical Thinking

I. Introduction

II. Literature Review

A. Critical thinking

Definitions / Approaches for native and non-native speakers.

B. Common strategies to language acquisition and critical thinking

III. The 5 step strategy to foster critical thinking (5SSCT)

IV. Methodology

A. Groups

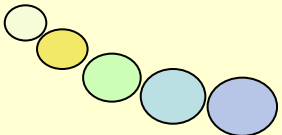
B. Instruments

C. Administration of instruments

D. Evaluation of data

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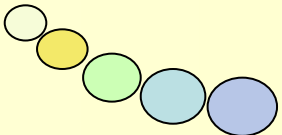


# A Systematic Strategy to Foster Critical Thinking

“National polls indicate over 90% of the faculty in this country think critical thinking is the most important part of undergraduate education”.

Derek Bok

President Emeritus of Harvard University (Cited in Barry, S. (2006). *Assessing Critical Thinking Skills*. Tennessee Technological University)

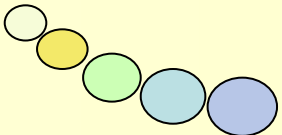


# A Systematic Strategy to Foster Critical Thinking

## Critical Thinking Definition 1:

“purposeful, self-regulatory judgment that results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based”

Delphi Report (1987)

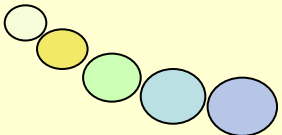


# A Systematic Strategy to Foster Critical Thinking

## Critical Thinking Definition 2:

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

Scriven, M. and Paul, P. (2006)



# A Systematic Strategy to Foster Critical Thinking

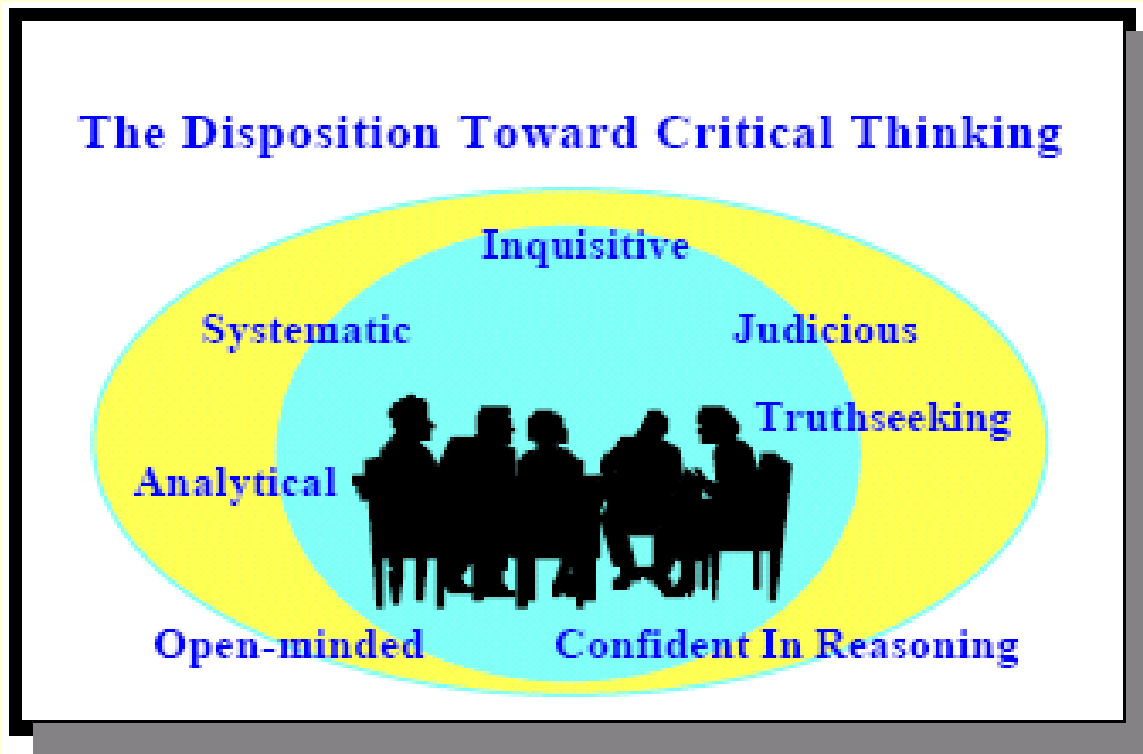
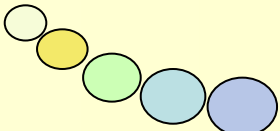
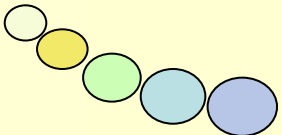
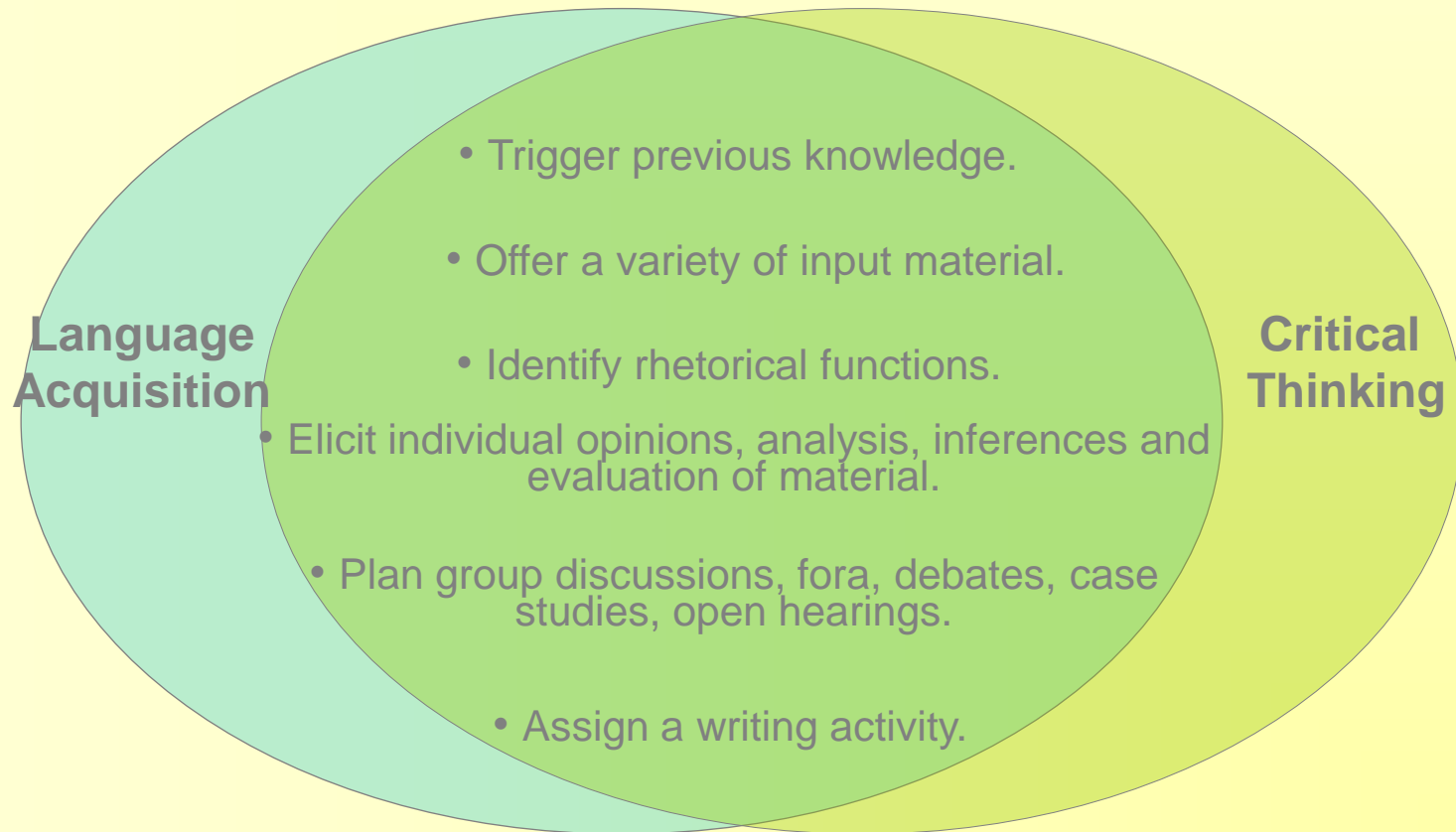


Figure 1. Characterological attributes related to the disposition toward critical thinking proposed by Facione & Facione (1992).

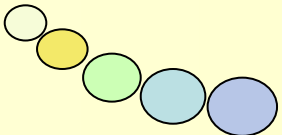


# Common Strategies to Foster Language Acquisition and Critical Thinking



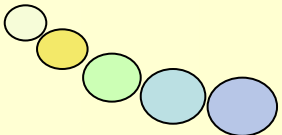
# Common Strategies to Foster Language Aquisition and Critical Thinking **ORAL**

- Trigger previous knowledge.
- Offer a variety of input material (readings, media articles, statistics, web sites, movies, videos).
- Identify rhetorical functions (definition, description, classification, comparison & contrast, cause & effect, example, narration, facts and opinions).
- Elicit individual opinions, analysis, inferences and evaluation of material.
- Plan group discussions, fora, debates, case studies, open hearings.
- Assign a writing activity for synthesis.



# A Systematic Strategy to Foster Critical Thinking

The *Five Step Strategy to Foster Critical Thinking (5SSCT)* combines a content-based approach along with critical thinking teaching strategies used in native speakers with the aim to provide EFL teachers with a systematic methodology to foster the acquisition of a second language through the development of critical thinking skills.

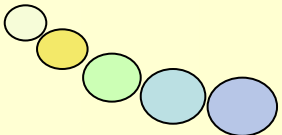


# 5 Step Strategy to Foster Critical Thinking (5SCT)

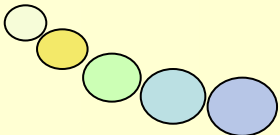
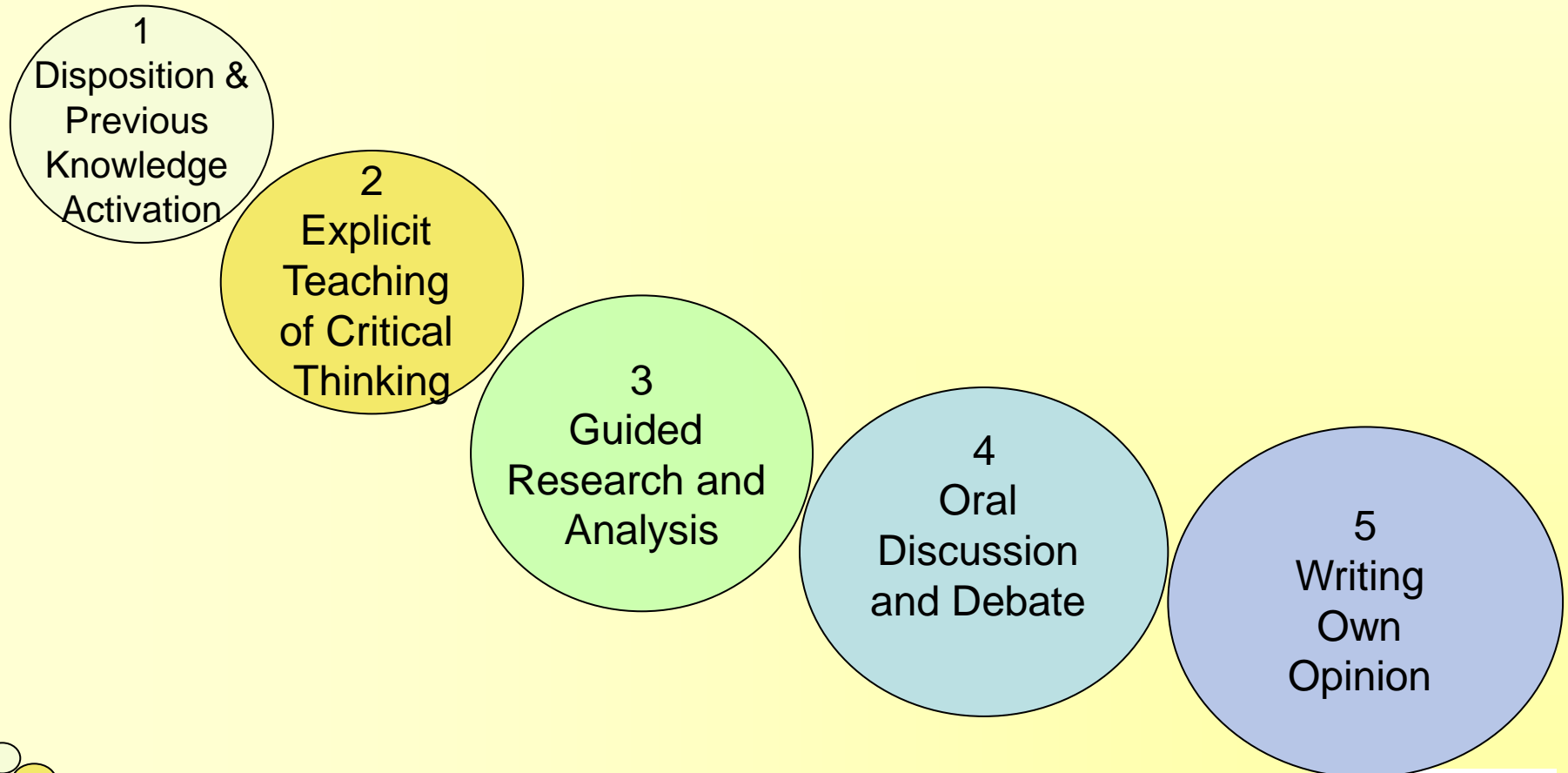
**content-based approach**

**with critical thinking teaching strategies  
used in native speakers**

**to provide EFL teachers with  
a systematic methodology  
to foster the acquisition of a second language  
through the development of critical thinking skills.**



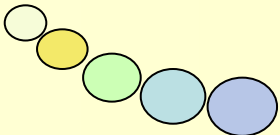
# 5 Step Strategy to Foster Critical Thinking (5SSCT)



# 5 Step Strategy to Foster Critical Thinking (5SCT)

1  
Disposition &  
Previous  
Knowledge  
Activation

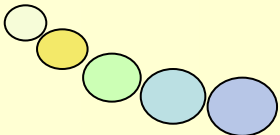
Activity	Theoretical Support
<p>Teacher poses challenging questions, provides shocking facts and statistics, brings a piece of news from yesterday's paper.</p> <p>Teacher makes students realize there is a question on the table and different perspectives to answer.</p>	<p>Activation of previous knowledge on a subject and of students' disposition to think critically make students connect something they know to a desire to learn more about it and look for solutions.</p> <p>Facione (2000); Halpern (2001); Paul and Elder (2007).</p>



# 5 Step Strategy to Foster Critical Thinking (5SCT)

2  
Explicit  
Teaching  
of Critical  
Thinking

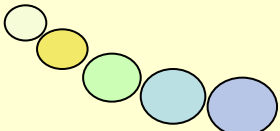
Activity	Theoretical Support
<p>A. Critical Thinking Theory - Definitions/Atributes <a href="#">(Critical Thinking Class Presentation)</a></p> <p>B. Critical Thinking Practice with short opinion article <a href="#">(A Critical Thinking Exercise)</a></p> <p>- Analysis through questions.</p> <p>-Evaluation with WSU rubric.</p>	<p>If students learn about advantages of being critical thinkers, they will have motivation to develop their CT skills.</p> <p>It Involves making students conscious of CT desirability and teaching them basic strategies to develop CT skills. Facione &amp; Facione (1992); Walker(2003).</p>



# 5 Step Strategy to Foster Critical Thinking (5SCT)

3  
Guided  
Research and  
Analysis

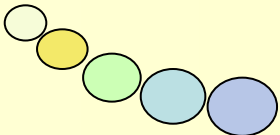
Activity	Theoretical Support
<ul style="list-style-type: none"> <li>- Pre-selected sources (links to web sites with facts, statistics and/or opinions) presented along with teacher designed activities.</li> <li>- Given as a homework internet assignment or a in-class activity in a computer equipped classroom.</li> <li>-Examples: <a href="#">u1_research_and_write_death_penalty0708b.doc</a></li> </ul>	<p>Facts and contrasting perspectives on specific contents provide:</p> <ul style="list-style-type: none"> <li>a) a variety of input material to foster language acquisition (content-based approach) and</li> <li>b) multiple perspectives to foster critical thinking.</li> </ul> <p>Pally (2000); Traub (2007).</p>



# 5 Step Strategy to Foster Critical Thinking (5SCT)

4  
Oral  
Discussion  
and Debate

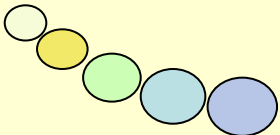
Activity	Theoretical Support
<ul style="list-style-type: none"><li>•Class discussions<ul style="list-style-type: none"><li>•Debates</li></ul></li><li>•Open hearings</li><li>•Case studies<ul style="list-style-type: none"><li>•Fora</li></ul></li></ul>	<p>Critical thinking is a dynamic activity where individual perspectives develop through individual analysis and social interaction.</p> <p>Concept are formed through collaborative action.</p> <p>Newman, Webb and Cochrane (1995); Brookfield (1987), Garrison (1992) and Brookfield (2006).</p>



# 5 Step Strategy to Foster Critical Thinking (5SCT)

5  
Writing  
Own  
Opinion

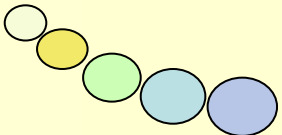
Activity	Theoretical Support
<ul style="list-style-type: none"><li>- Opinion essay assignment.</li><li>- Students are encouraged to show their improved critical thinking skills.</li><li>- Free number of paragraphs</li><li>- Students are provided and evaluated with the WSU rubric.</li></ul>	<p>When students are required to write, they are forced to synthesise what they have learned and structure their thoughts in a clear expression.</p> <p>Walker (2003); Gocsik (2005).</p>



# A Systematic Strategy to Foster Critical Thinking

## OBJECTIVE:

Evaluate effectiveness of the proposed strategy 5SSCT to foster critical thinking in EFL students of intermediate and advanced levels in English program at Universidad Metropolitana, Caracas.



# Research Methodology

## Groups

- 4 Groups of 30 students (N=120) from EFL courses at UNIMET, Caracas.
- 2 Experimental groups (selection based on teacher experience with CT activities) received CR instruction with 5SSCT.
- 2 Control groups (random selection) received traditional content-based instruction.

## Instruments

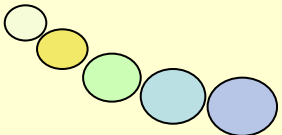
- Pre and Post tests: [Pre and Post Tests Formats for Nancy and Alicia.doc](#)
  - Same open question to be answered in an structured opinion essay.
  - Undefined number of body paragraphs.
  - Graded assignment (1% of the grade for the course).

## Administration of instruments

- First and last week of semester 0708A.
- Same instructions

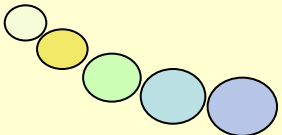
## Evaluation of data

- Rubric: Guide to Rating Critical & Integrative Thinking from WSU (2006).
- Rater: Expert professor on writing and critical thinking, not related to research.



# Research Results

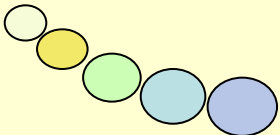
- 55% (68 students) of original sample did pre and post tests: insufficient data.
  - Subject attendance affected by political context.
- Total Post test scores higher than pre test scores in experimental and control groups.
- Difference between Total Post test scores and pre test scores is higher in experimental groups.
- Authors hypothesized higher differences in experimental groups to have resulted from CT instruction.
- However, no generalizations are made based on the results of this investigation.



# Research Results (1)

Subject No.	Criteria in WSU Rubric to Rate Critical & Integrative Thinking																		
	Identifies problem, question, or issue		Considers context and assumptions		Develops own position or hypothesis		Presents and analyzes supporting data		Integrates other perspectives		Identifies conclusions and implications		Communicates effectively		Total score				
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post			
1	3	3	2	1	4	3	4	3	2	1	3	3	3	4	21	18			
2	3	3	1	3	3	4	1	3	1	1	3	3	3	3	15	20			
3	3	4	2	3	2	1	3	2	1	1	1	3	2	4	14	18			
4	1	2	1	1	1	2	1	2	1	1	1	1	2	3	8	12			
5	3	4	3	3	3	4	3	4	1	1	1	2	3	4	17	22			
6	1	2	1	2	1	2	1	2	1	1	1	1	1	2	7	12			
7	2	3	1	3	3	4	1	4	1	1	3	3	4	4	15	22			
8	1	2	1	2	1	2	1	2	1	1	1	2	2	2	8	13			
9	1	3	1	2	1	3	1	3	1	1	1	2	1	3	7	17			
10	1	3	1	3	1	3	1	2	1	2	1	1	2	3	8	17			
11	1	2	2	2	3	3	1	3	1	1	3	3	3	3	14	17			
12	2	2	2	2	2	2	1	1	1	1	2	2	3	3	13	13			
13	1	3	1	1	1	3	1	3	1	1	1	2	2	4	8	17			
14	3	2	2	3	3	3	1	3	1	1	2	3	3	3	15	18			
15	1	3	1	1	1	3	1	2	1	1	1	1	1	2	7	13			
Ave	1,8	2,7	1,5	2,1	#	2,0	2,8	1,5	2,6	1,1	1,1	1,7	2,1	#	2,3	3,1	#	11,8	16,6
Diff.	0,93		0,67			0,80		1,13		0,00		0,47			0,80			4,80	

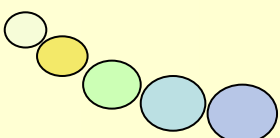
Table 2. Difference between average scores in pre and post test in 5SSCT group Intermediate Level



# Research Results (2)

Criteria in W/SU Rubric to Rate Critical & Integrative Thinking																
Subject No.	Identify problem, question, or issue		Consider context and assumptions		Develop own position or hypothesis		Present and analyze supporting data		Integrate other perspectives		Identify conclusions and implications		Communicate effectively		Total score	
	No.	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre
1	2	2	2	2	2	3	1	2	1	1	1	2	3	3	12	15
2	1	2	1	1	1	2	1	1	1	1	1	1	2	2	8	10
3	3	2	3	1	3	3	3	3	1	1	2	1	2	3	17	14
4	1	2	1	1	2	1	1	2	1	1	1	1	2	3	9	11
5	1	2	2	1	2	1	2	3	1	1	2	1	2	2	12	11
6	1	2	3	2	3	3	2	1	1	1	1	1	3	3	14	13
7	2	1	2	2	3	3	2	1	1	1	2	1	2	2	14	11
8	2	4	2	4	3	4	3	3	1	1	2	4	3	4	16	24
9	1	3	1	2	2	3	2	1	1	1	1	2	2	3	10	15
10	3	1	3	1	3	1	3	1	1	1	3	1	4	2	20	8
11	1	3	1	2	1	3	1	2	1	1	1	2	1	2	7	15
12	3	2	3	1	4	1	2	2	1	1	1	2	4	3	18	12
13	1	1	1	2	1	2	1	1	1	1	1	1	1	1	7	9
Ave.	1,7	2,1	1,9	1,7	2,3	2,3	1,8	1,8	1,0	1,0	1,5	1,5	2,4	2,5	12,8	12,8
Diff.	0,38		-0,23		0,00		-0,08		0,00		0,08		0,15		0,31	

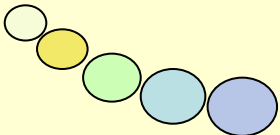
Table 3. Difference between average scores in pre and post test in traditional content-based instruction group. Intermediate Level.



# Research Results (3)

Criteria in W/SU Rubric to Rate Critical & Integrative Thinking																
Subject No.	Identify problem, question, or issue		Consider context and assumptions		Develop own position or hypothesis		Present and analyze supporting data		Integrate other perspectives		Identify conclusions and implications		Communicate effectively		Total score	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	1	3	1	1	1	3	1	1	1	3	1	3	3	3	9	17
2	3	3	2	1	3	3	2	1	1	1	3	2	4	3	18	14
3	3	3	1	3	3	4	2	2	1	2	3	2	3	3	16	19
4	3	3	2	1	3	3	1	1	1	2	2	2	4	3	16	15
5	2	1	1	2	2	3	1	1	1	1	1	2	2	3	10	13
6	4	2	3	2	4	2	3	2	3	2	3	2	4	3	24	15
7	2	4	2	3	2	4	1	3	1	1	1	2	3	4	12	21
8	2	3	1	3	2	3	1	1	1	1	1	3	2	3	10	17
9	4	3	4	3	4	4	3	3	4	3	1	1	3	4	23	21
10	3	3	2	3	3	3	1	2	1	1	2	2	2	3	14	17
11	1	3	1	2	1	4	1	3	1	1	1	3	2	3	8	19
12	2	2	1	1	2	1	1	1	1	1	1	1	3	2	11	9
13	4	4	3	4	4	4	3	3	3	2	1	3	3	4	21	24
14	3	3	1	1	3	3	2	2	1	1	3	2	2	2	15	14
15	4	4	4	4	4	4	2	4	3	4	1	4	3	4	21	28
16	4	4	4	4	4	4	3	3	4	4	4	4	4	4	27	27
17	3	3	2	4	3	3	2	1	3	4	1	3	3	4	17	22
18	4	2	4	1	4	2	2	2	3	1	3	2	4	3	24	13
19	4	4	4	3	4	4	4	4	4	4	4	3	3	4	27	26
Ave.	2.9	3.0	2.3	2.4	2.9	3.2	1.9	2.1	2.0	2.1	1.9	2.4	3.0	3.3	17.0	18.5
Diff.	0.05		0.16		0.26		0.21		0.05		0.47		0.26		1.47	

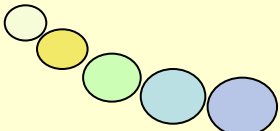
Table 4. Difference between average scores in pre and post test in 5SSCT group. Advanced Level



# Research Results (4)

Criteria in WSU Rubric to Rate Critical & Integrative Thinking																
Subject No.	Identify problem, question, or issue		Consider context and assumptions		Develop own position or hypothesis		Present and analyze supporting data		Integrate other perspectives		Identify conclusions and implications		Communicate effectively		Total score	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	1	3	1	1	1	3	1	1	1	3	1	3	3	3	9	17
2	3	3	2	1	3	3	2	1	1	1	3	2	4	3	18	14
3	3	3	1	3	3	4	2	2	1	2	3	2	3	3	16	19
4	3	3	2	1	3	3	1	1	1	2	2	2	4	3	16	15
5	2	1	1	2	2	3	1	1	1	1	1	2	2	3	10	13
6	4	2	3	2	4	2	3	2	3	2	3	2	4	3	24	15
7	2	4	2	3	2	4	1	3	1	1	1	2	3	4	12	21
8	2	3	1	3	2	3	1	1	1	1	1	3	2	3	10	17
9	4	3	4	3	4	4	3	3	4	3	1	1	3	4	23	21
10	3	3	2	3	3	3	1	2	1	1	2	2	2	3	14	17
11	1	3	1	2	1	4	1	3	1	1	1	3	2	3	8	19
12	2	2	1	1	2	1	1	1	1	1	1	1	3	2	11	9
13	4	4	3	4	4	4	3	3	3	2	1	3	3	4	21	24
14	3	3	1	1	3	3	2	2	1	1	3	2	2	2	15	14
15	4	4	4	4	4	4	2	4	3	4	1	4	3	4	21	28
16	4	4	4	4	4	4	3	3	4	4	4	4	4	4	27	27
17	3	3	2	4	3	3	2	1	3	4	1	3	3	4	17	22
18	4	2	4	1	4	2	2	2	3	1	3	2	4	3	24	13
19	4	4	4	3	4	4	4	4	4	4	4	3	3	4	27	26
Ave.	2.9	3.0	2.3	2.4	2.9	3.2	1.9	2.1	2.0	2.1	1.9	2.4	3.0	3.3	17.0	18.5
Diff.	0.05		0.16		0.26		0.21		0.05		0.47		0.26		1.47	

Table 4. Difference between average scores in pre and post test in 5SSCT group. Advanced Level

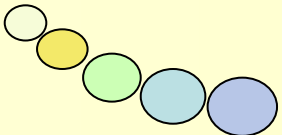


# Research Results (5)

Intermediate level:

Score differences between pre and post tests

Criteria in WSU Rubric	5SSCT (n=15)	Traditional content-based instruction (n=14)
1. Identifies problem, question, or issue	0,93	0,38
2. Considers context and assumptions	0,67	-0,23
3. Develops own position or hypothesis	0,80	0
4. Presents and analyzes supporting data	1,13	-0,08
5. Integrates other perspectives	0	0
6. Identifies conclusions and implications	0,47	0,08
7. Communicates effectively	0,80	0,15
Total score	4,8	0,31

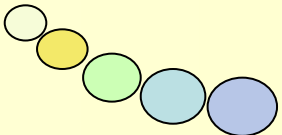


# Research Results (6)

Advanced level:

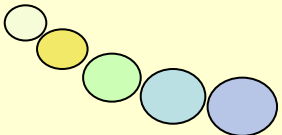
Score differences between pre and post tests

Criteria in WSU Rubric	5STCT (n=20)	Traditional content-based instruction (n=19)
1. Identifies problem, question, or issue	0,05	0
2. Considers context and assumptions	0,16	-0,11
3. Develops own position or hypothesis	0,26	0
4. Presents and analyzes supporting data	0,21	0,05
5. Integrates other perspectives	0,05	-0,05
6. Identifies conclusions and implications	0,47	0
7. Communicates effectively	0,26	0,05
Total score	1,47	-0,05



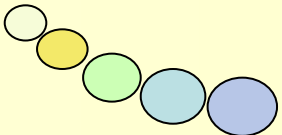
# Research Limitations

- Results should not be generalized since are based on the performance of a small number of students.
- Political context affected student attendance.
- Political context may have affected student performance.
- Political context may have affected teacher performance.
- One essay rater may provide questioned rater reliability.



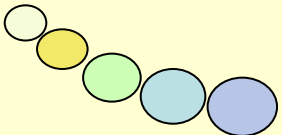
# Conclusion

- Investigation does not provide empirical evidence to validate the effectiveness of 5SSCT on intermediate and advanced level EFL students at UNIMET.
- Insufficient results point to a trend of higher test scores in groups that received 5SSCT.
- Authors hypothesize that this trend resulted from CT instruction.
- Authors believe that CR strategies in the EFL classroom are:
  - Natural
  - Easy
  - Effective
  - Demanding for teachers



# CR strategies in the EFL classroom are (Oral):

- Natural (teachers do it intuitively when they use the content based approach)
- Easy (Does not require of new teaching strategies)
- Effective (favors language aquisition & develops CR skills)
- Require an active and demanding role of the teacher.



# Thank You

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