

Charles A. MacArthur  
Zoi Traga Philippakos  
Henry May  
Jill Compello

SREE Conference,  
Arlington, VA  
March 2020

Research reported in this article was supported by the Institute for Education Science, U.S. Department of Education, grant R305A160242. The opinions expressed are those of the authors.

# BASIC WRITERS AND THE CHALLENGES OF WRITING FROM SOURCES:

# EXPERIMENTAL STUDY OF A STRATEGY INSTRUCTION APPROACH

# SUPPORTING STRATEGIC WRITERS PROJECT

- Funded by IES since 2010 to design and evaluate instructional approaches to improve outcomes for underprepared college students. (Goal 2, 2010-2014; Goal 3, 2016-2021)
- The instructional approaches are based on strategy instruction with self-regulation integrated with approaches common in college composition.
- Brief overview of instructional methods and prior research
- Today's presentation focuses on our latest research that aligns instruction with the expectations of FYC by introducing students to writing with sources, which requires integration of reading and writing

SUPPORTING  
STRATEGIC  
WRITERS PROJECT:  
KEY IDEAS



Strategies for writing and reading based on rhetorical analysis and genres.



Metacognitive strategies to support self-regulation and motivation.



Critical instructional methods.



## GENRE- BASED STRATEGIES

- Writing and reading strategies integrate rhetorical knowledge of genres with processes.
  - Planning strategies – Use genre knowledge to set goals, generate content, and organize
  - Evaluating/revising strategies – Use genre-specific evaluation criteria
  - Reading comprehension – Use genre knowledge to identify key ideas
- Units focused on genres
  - E.g., personal narrative based on NPR *This I Believe* series
  - E.g., argumentative essay with counterargument

# ELEMENTS OF ARGUMENTATIVE WRITING

- Introduction
  - Issue: What is the issue? Why is it important?
  - Position/Thesis: What is your position?
- Reasons 2-4
  - Clear reason: Give a reason for your position
  - Supporting Evidence: Support your reasons with facts, examples, and explanations.
- Opposing Reason and Rebuttal Essay
  - Opposing reason: What do others have to say?
  - Evidence for opposing reason: Give facts, examples, or explanations.
  - Rebuttal: Say why you disagree. Give your reasons.
- Conclusion
  - Re-state position: Tell what your position is again.
  - Finish with a strong point

# RHETORICAL GOALS & BRAINSTORMING

---

## Set Goals Using TAPFOR

**T**

Topic

**A**

Audience

**P**

Purpose

**F**

Form

**O**

Organizational  
Elements

**R**

Requirements

---

## Brainstorm

For	Against

# GRAPHIC ORGANIZER

*Graphic Organizer: Argumentative Writing with Opposing Position (IROC)*

Issue:

Position [I say]:		Opposing Position [What others say]:		
Reasons [Why I say what I say]	Evidence	Reasons [Why they say what they say]	Evidence	Rebuttal [Why they are wrong]

# GENRE-SPECIFIC RUBRIC

## Argumentative Writing: Evaluation Rubric

Writer's Name: \_\_\_\_\_ Reviewer's Name: \_\_\_\_\_ Date: \_\_\_\_\_

Rubric Score: 0 =missing 1 = needs work 2 =good

INTRODUCTION	Score			
<ul style="list-style-type: none"> <li>Issue: Does the writer say why the issue is important?</li> <li>Position: Is the writer's position clear?</li> </ul>				
REASONS (Paragraphs 2-4)	Reason 1	Reason 2	Reason 3	Reason 4
<ul style="list-style-type: none"> <li>Clear Reason: Does each topic sentence give a clear/accurate reason?</li> <li>Supporting Evidence: Is each reason supported with facts, examples, or explanations?</li> </ul>				
OPPOSING POSITION & REBUTTAL				
<ul style="list-style-type: none"> <li>Opposing reason(s): What did the opposing side say?</li> <li>Evidence for opposing reason: Supported with facts, examples, or explanations?</li> <li>Rebuttal: Does it argue against specific reasons/evidence?</li> </ul>				
CONCLUSION				
<ul style="list-style-type: none"> <li>Restate position: Is the position stated in new words?</li> <li>Strong point: Does it leave the reader something to think about?</li> </ul>				
Other				
<ul style="list-style-type: none"> <li>Are transition words used effectively?</li> <li>Were all assignment requirements met?</li> </ul>				
PEER FEEDBACK:				
What was done well?	Suggestions for improvement:			
Writer's Goal: What will I change?				



## METACOGNITIVE STRATEGIES

- Writing is hard
- Writers need metacognitive strategies to organize and regulate their efforts.
- Research on writing strategies shows that adding metacognitive, self-regulation strategies increases the effects on writing.
- Regular practice setting goals and reflecting on progress help students develop a sense of control over the writing process – which is critical to motivation.

# STRATEGIES FOR ACADEMIC SUCCESS

1

## Goal Setting

What are my long-term goals?

What specific goals do I have for this assignment?



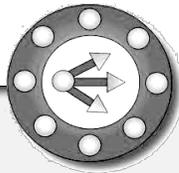
2

## Task Management

How can I manage my work to get it done?

What strategies can I use?

How can I motivate myself to do my best?



3

## Checking Progress

Am I using the strategies?

Are they helping me to get the task done?

Shall I consider other strategies?



4

## Reflection

How did I do on the task?

How did the goals and strategies work?

What worked well and what did not?

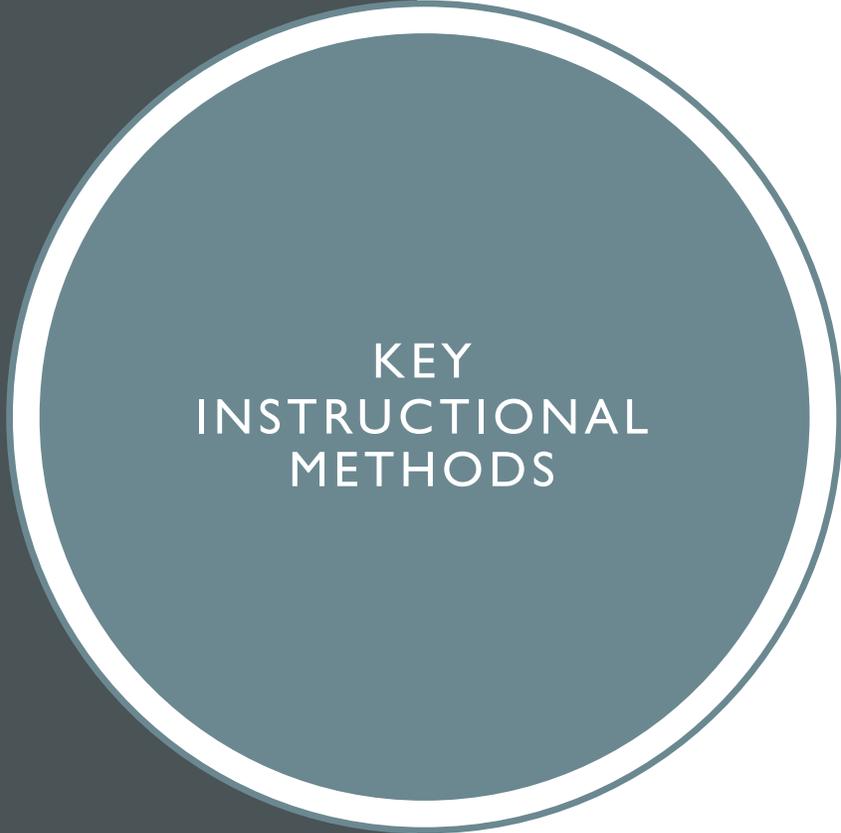
What strategies will I try next time?

What goals will I set next time?



## DEVELOPING METACOGNITION

- Journals are dedicated to writing reflection on the self-regulation strategies.
- Class discussion of the journal reflections adds to student understanding of the value of the strategies.
- Instructors model the metacognitive strategies as part of writing.



KEY  
INSTRUCTIONAL  
METHODS

- Introduction to the Genre and Evaluation of Strong and Weak Examples
- Think-aloud Modeling – Making the Invisible Visible
- Collaborative Practice
- Peer Review – Developing Self-Evaluation
- Supporting Self-Regulation

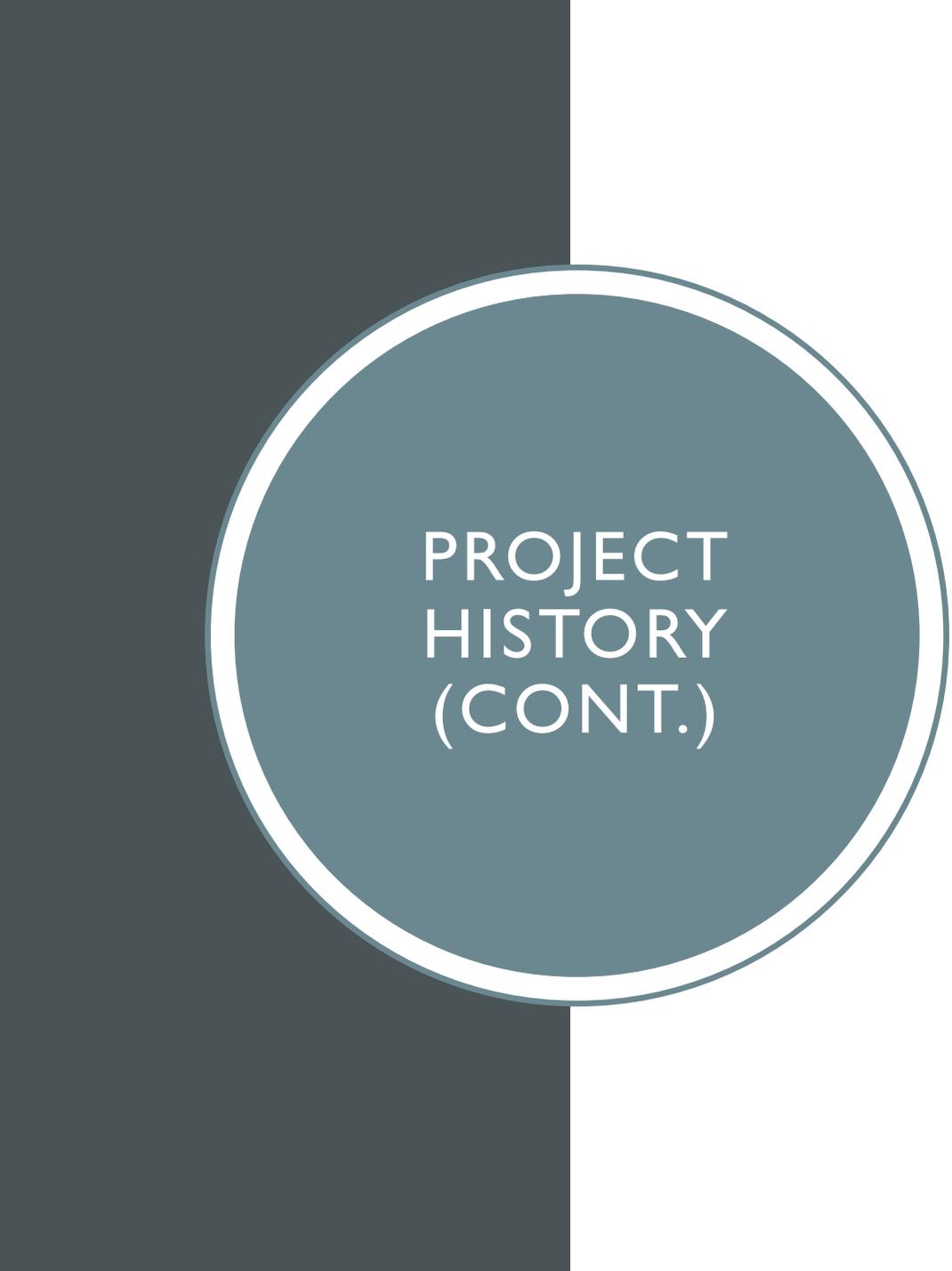
INSTRUCTIONAL  
SEQUENCE:  
A STRATEGY FOR  
TEACHING STRATEGIES

1. Introduce the genre
2. Analyze good and weak examples
3. Explain and model the strategy using think-alouds
4. Collaborative practice or joint construction
5. Guided practice
6. Peer review
7. Support self-regulation throughout; teach to mastery



## PROJECT HISTORY

- Design research – 2010-13
  - Collaborative work with community college faculty
  - 3 cycles of design, implementation, and revision
  - Large pre to post gains in writing and motivation
- Quasi-experimental study – 2012
  - 2 colleges, 13 instructors, 276 students – 48% minority, 10% non-native English speakers.
  - Large effects on overall writing quality (ES = 1.2) and motivation
- RCT – 2016-17
  - 2 colleges, 19 instructors, 207 students – 57% minority, 12% non-native English speakers.
  - Large effects on overall writing quality (ES = 1.7), standard NAEP writing (ES=0.67), and motivation (ES range 0.25-0.50)
  - Last year at SREE



PROJECT  
HISTORY  
(CONT.)

## Writing with Sources

- Further development – 2017
  - 2 colleges
- Quasi-experiment of accelerated course – 4 weeks, followed by 11-week FYC (Nefferdorf, E.)
  - Large positive effect on writing essay using sources (ES = 0.96)
- RCT - writing with sources – 2018-19
  - Today's presentation



## CHALLENGES OF WRITING USING SOURCES

- Finding sources and evaluating their credibility.
- Critical reading - understanding the main ideas and evaluating the evidence.
- Synthesizing information from multiple sources.
- Background knowledge.
- Many underprepared students need work on both reading and writing.
- An important goal for developmental courses is alignment with FYC and other college courses.

## CRITICAL READING: SUMMARY-RESPONSE STRATEGY

- **Summary**
  - First reading: Rhetorical preview -- TAAPO
  - Second reading:
    - Highlight the genre elements (e.g., position, reasons, counterarguments)
    - Take notes in your own words using the graphic organizer (GO)
    - Evaluate the ideas; comment on the GO
  - Summarize using the GO & sentence frames
- **Response**
  - Comment on author and source credibility
  - Evaluate the author's arguments
  - Add your own ideas, if you wish

# TAKING NOTES

## TAAPO and Graphic Organizer (GO)

### Taking Notes to Write a Summary-Response Paper

Analyze Using TAAPO:

Topic:

Author and source:

Audience:

Purpose:

Organization (elements):

Citation:			
Issue/Problem:			
Author's position (or central idea)			
Reasons (or main points)	Key evidence (or supporting details)	Comments for response	
Opposing position (if present)			
Opposing Reasons	Support/evidence	Rebuttal	Comments for response

# ELEMENTS OF A SUMMARY-RESPONSE

- **Introductory sentence**
  - Author & source: Does it mention the author and source?
  - Position/thesis: Does it state the author's position?
- **Main ideas**
  - Reasons: Are the main ideas accurately stated?
  - Evidence: Does it include **only** the most important evidence?
  - Are opposing reasons and rebuttals stated clearly and accurately?
- **Summary Features**
  - Is it written in the summarizer's own words?
  - Attributions: Are the ideas clearly attributed to the author?
  - Citations: Does it include an appropriate reference?
- **Response**
  - Credibility: Does it comment on the credibility of the author and source?
  - Evaluation: Does it evaluate specific strengths and weaknesses of the argument?
  - Does it comment on what ideas might be used in writing an essay?
  - Optional: Does it give an opinion on the issue?

## EVALUATING CREDIBILITY OF SOURCES

- Awareness of fake news, media bias, and personal bias.
- Strategy based on research by Wineburg et al. on comparing processes for evaluating online information used by fact checkers versus college students and professors.
- SAP strategy
  - S – Evaluate search results
  - A – Check authors – Jump off.
  - P – check publisher – Jump off.
- Tools for checking publishers and facts.

# STUDY – WRITING WITH SOURCES – 2018-19

- Participants & activities
  - 2 colleges, 23 instructors, 187 students (53% minority, 23% non-native English)
  - Multisite randomized trial
  - Professional development and coaching, Instructor's guide and student book
  - Implementation for a full semester

# MEASURES - STUDENTS

- Accuplacer pretest
- Pretest argumentative essay without sources rated for quality and length
- Posttest argumentative essays using 2 given sources
- Written summary of a published article
- Motivation scale (pre /post): Self-efficacy, learning goals, beliefs about writing, affect
- NAEP 12<sup>th</sup> grade argumentative prompt posttest
- Interviews with sample of students

## MEASURES - TEACHERS

- Interviews with all instructors, pretest and posttest
- Observation of treatment classes for fidelity of treatment
  - Checklist and quality rating scale
  - Lesson components score averaged 1.6 on 2-point scale
  - Quality of key instructional practices averaged 2.5 on a 3-point scale
- Control – Description of instruction – Observations, syllabi & assignments

# ANALYSIS

- HLM analysis with students nested in instructors and college and condition as factors; pretest covariates
- Essay quality & length
- Summary quality
- NAEP essay quality
- Motivation

# ANALYSIS

- HLM equation with random effects for instructors and fixed effects for colleges:

$$Posttest_{ij} = \beta_0 + \beta_1(Pretest_{ij}) + \beta_2(Treatment_j) + \beta_3(College_j) + \beta_4(Treatment_j \times College_j) + \alpha_j + \varepsilon_{ij}$$

where:  $Posttest_{ij}$  is the outcome for student  $i$  under instructor  $j$

$\beta_0$  is the model intercept

$\beta_1$  is coefficient for the *Pretest* covariate

$\beta_2$  is the treatment effect for College 1

$\beta_3$  is the fixed effect differentiating Colleges 1 & 2

$\beta_4$  is coefficient for the treatment by site interaction term (i.e., testing for differential treatment effects between colleges)

$\alpha_j$  is a random effect for instructors

$\varepsilon_{ij}$  is the student-level residual term

## QUALITY OF BASELINE AND FINAL ESSAYS

	College 1		College 2		Total	
	Control	Treatment	Control	Treatment	Control	Treatment
Baseline M (SD)	2.19 (.76)	2.21 (.71)	2.29 (.60)	2.22 (.75)	2.23 (.69)	2.22 (.72)
Posttest M (SD)	2.72 (1.11)	3.56** (1.36)	2.63 (1.24)	3.02 (1.08)	2.68 (1.16)	3.35** (1.28)

Posttest quality,  $p < .01$ , ES (Glass's  $\Delta$ ) = .56  
 College effect,  $p = .067$ .  
 College 1,  $p < .01$ , ES = .71. College 2, ns, ES = .40

Note:  $p$  and ES values are based on HLM analyses.

# NAEP WRITING

	College 1		College 2		Total	
	Control	Treatment	Control	Treatment	Control	Treatment
NAEP quality M (SD)	3.04 (1.21)	3.20 (1.20)	2.93 (1.39)	3.03 (1.09)	2.99 (1.28)	3.13 (1.15)

# MOTIVATION

- Self-efficacy – 3 subscales
  - Tasks and processes
  - Grammar
  - Self-regulation
- Goal orientation
  - Mastery
  - Performance
  - Avoidance
- Beliefs about writing – 2 subscales
  - Importance of content
  - Importance of conventions
- Affect

All subscales had good internal consistency & were equivalent at baseline.

No significant differences by condition.

# SUMMARY

- Quality of final essays
  - Overall positive effect, ES = .56
  - Unlike prior studies, effectiveness varied by college.
- NAEP standard writing assessment – no effect.
- Motivation – no effects
- Summary writing results to come

# DISCUSSION