

## Research Study Overview: Developing Metacognitive Instructors Phase I

NOTE: The call for participation is now closed. However, we plan to have future phases and will send out a call for additional participation as those phases are developed. You may also decide to try out this journal reflection approach on your own.

This document provides an *overview* of Phase I of a metacognitive instruction research study that aims to support an easy-to-implement multi-institutional research project. By *metacognitive instruction* we mean instructional approaches that incorporate the regular and *intentional* use of a collection of strategies to prompt *awareness and self-regulation* of teaching and its impact on student learning (e.g., intentionally monitoring what works and why and choosing alternate strategies when appropriate).

Later study phases will build on Phase I, adding additional assessments that move beyond instructor and student self-reports, and exploring new questions. A more complete proposal with background literature will be posted soon.

We have several institutions that plan to participate during the spring 2015 semester and we invite you to consider participation. As a participant you might choose to be part of the cross-institutional study (data shared and a combined paper will be prepared for publication). Or, you might choose to participate in isolation (run a research project but not be part of the cross-institutional study). Or you might choose to use the metacognitive instruction strategies but not be part of any study.

Those individuals leading the effort at their institution and sharing data as part of the collaborative cross-institutional study are invited to become co-authors in the resultant paper that we plan to submit for publication. As of Jan 2015, institutions that plan to participate in the cross-institutional study are:

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| U.S. Air Force Academy                    | (led by Lauren Scharff) |
| SUNY Buffalo State                        | (led by John Draeger)   |
| Kent State University                     | (led by Chris Was)      |
| Auburn University at Montgomery           | (led by Tara Beziat)    |
| University of Colorado College of Nursing | (led by Leli pedro)     |

Any persons or institutions that use this research overview in their own work should cite these proposal documents:

Scharff, L.& Draeger, J.(2014). Research Proposal for Developing Metacognitive Instructors Phase I. Retrieved from the Improve with Metacognition site at <http://www.improvewithmetacognition.com/wp-content/uploads/2014/11/OverviewDevelopingMetacognitiveInstructors21Nov2014.pdf>

If you would like more information about the study or copies of the final questionnaires, please contact either Dr. Lauren Scharff ([laurenscharff@gmail.com](mailto:laurenscharff@gmail.com)) or Dr. John Draeger ([draegejd@buffalostate.edu](mailto:draegejd@buffalostate.edu)).

**Project Organizing/Lead co-investigators:**

Lauren Scharff ([laurenscharff@gmail.com](mailto:laurenscharff@gmail.com))

John Draeger ([draegejd@buffalostate.edu](mailto:draegejd@buffalostate.edu))

**Please contact Lauren or John if you are interested in participating in the project.**

**Background**

Metacognitive instructors are aware of what they are doing and why. They have explicitly considered student learning goals and strategies for achieving those goals. They actively monitor the effectiveness of those strategies and student progress towards learning goals. Metacognitive instructors also engage in self-regulation. They have the ability to make intentional changes based on a situational awareness of student learning.

Very little prior research has focused on whether and how instructors are metacognitively aware of their own teaching practice, and the few papers available that focus on instructor metacognitive practices share recommendations but include little or no data (e.g. Shulman & Shulman, 2004; Tanner, 2012; ). Thus, this study has two main goals. The first is to develop a basic understanding of general instructor awareness of their own teaching practices and their motivations and deterrents for becoming more metacognitive about their teaching. The second goal is to gather some instructor and student reflection and attitude data in response to a semester-long metacognitive instruction intervention (instructor use of a journal). These two goals lead to the following research questions:

Goal One: To document and analyze both instructors' metacognitive awareness and self-regulation in their teaching, and to investigate motivations/deterrents for supporting metacognitive teaching practices.

- How familiar are faculty members with the concept of metacognitive instruction as it pertains to instructional practices rather than teaching metacognitive learning strategies to students?
- How likely are instructors to already be regularly incorporating aspects of metacognitive instruction?
- Which metacognitive strategies are more commonly used?
- What motivates and/or deters regular incorporation of metacognitive instruction strategies?
- Do these responses vary by the number of years an instructor has taught?

Goal Two: To investigate the impact of instructor participation in a semester-long, reflection and journal intervention on a) instructor self-reported metacognitive practices, b) instructor perceptions of teaching confidence and comfort, and c) student perceptions of instructor responsiveness to student engagement and achievement of the learning objectives.

- Does the regular use of a reflection and journal intervention (compared to less regular use or no use):
  - increase instructor awareness of their intended strategies to promote student engagement and achievement of lesson objectives?
  - increase instructor self-regulation when choosing (pre-lesson) and adjusting (during-lesson) teaching strategies?
  - increase instructors' sense of teaching confidence and comfort in the classroom?
  - impact student impressions of instructor responsiveness to their engagement and achievement of the lesson objectives?

Our working hypothesis is that the more instructors use the journal to increase their awareness of their intentions and strategies, the more metacognitive (aware and self-regulated) their instruction will become, the better they will feel about their teaching (e.g. perceptions of increased confidence in their classroom and in their ability to help their students achieve their learning outcomes), the more responsive they will be to student engagement and learning, and the more their students will learn. These hypotheses will be assessed using a) self-report questionnaires completed by instructors and students and b) journal samples from instructors. Control participants will be included for comparison. Later phases will additionally examine impact on student learning.

As part of their metacognitive practice, instructors will be asked to engage in pre-class reflections based on a series of prompts, reflect after class about their metacognitive behaviors during class instruction, and explicitly consider lessons learned/planned revisions for future lessons (see Table with question prompts below). Instructors are also encouraged to complete a written journal on their metacognitive practices (see journal entry template below). Several questionnaires will be used to gauge the efficacy of these practices.

### **Ways to participate in the study**

We invite you to participate in any of the following ways:

1. You can sign on as a research collaborator, invite instructors (including yourself) at your institution to participate, and become involved in the cross-institutional version of this story.
2. You can use the shared materials as a template for a study of metacognitive instruction in your own institutional context but not be part of the cross-institutional study.
3. You can participate as an instructor but not be part of a study.

Regardless of type of participation, if you engage in a research study approach, you will need to adapt the forthcoming proposal to your institutional context and IRB requirements and receive IRB approval

## Overview of Study Methodology Phase I

**Participants:** Ideally 5-10 instructors per institution will agree to participate by using the metacognitive instruction strategies. If possible, an additional 5-10 instructors will agree to serve as control participants. These instructors (both intervention and control) may choose to participate with a single section/class or with multiple sections/courses.

**Procedure:** Intervention instructors will engage in the regular use of metacognitive strategies using one of the levels of participation as outlined below. They will also complete the Demographics form, and the Pre, Mid1, Mid2, and End-of-semester questionnaires. They will also have their students complete Mid and End-of-semester questionnaires. Optionally, they will submit samples of their journals for qualitative analysis. Control instructors will teach their courses as usual without the incorporation of the regular intervention strategies. They will complete the Demographics form and the Pre-semester questionnaire. They will also have their students complete the Mid and End-of-semester questionnaires.

### Levels of instructor participation with the metacognitive intervention strategies:

- Full mental and full journal engagement --- mentally reflect on practice for each lesson (see Table), complete the written journal form (see attached) for each lesson
- Full mental and partial journal engagement --- mentally reflect on practice for each lesson (see Table), complete the written journal form (see attached) for some lessons
- Partial mental and partial journal engagement --- mentally reflect on practice for some lessons (see Table) and complete the written journal for some lessons.
- No written journal engagement --- mentally reflect on practice for some lessons (see Table).

### Table: Intervention Prompting Reflection Questions

Intent: to promote awareness and self-regulation. Complete sentences and full prose answers are not required for the journal.

| Activities                      | Questions:  |
|---------------------------------|---|
| Planning (Pre-class reflection) | <ol style="list-style-type: none"><li>1. For this lesson, what is your content/skill learning objective(s)?</li><li>2. What are your intended strategies during the lesson to engage students to achieve this primary objective(s)? Why?</li><li>3. How are you planning to assess student engagement with and achievement of your lesson objective(s) during the lesson?</li><li>4. What do you believe will be your biggest challenge during this lesson?</li><li>5. What are your alternative strategies to use during the lesson?</li></ol> |

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| <p>In-class monitoring (“in-the-moment” reflection during class). When making journal entry after class, use past tense of these questions.</p> | <ol style="list-style-type: none"> <li>1. What am I observing that tells me whether or not students are achieving my primary content/skill learning objective(s)?</li> <li>2. If I observe something is not working, how can I modify my approach?</li> <li>3. What is the biggest challenge that I am encountering during class?</li> </ol>   |
| <p>Lessons Learned / Planned revisions for future lessons (post-lesson reflection)</p>  | <ol style="list-style-type: none"> <li>1. What strategies worked well? What is your evidence for their success?</li> <li>2. Did your actual biggest challenge match with your prediction before class? Explain.</li> <li>3. What changes to do you plan to make when teaching this content/skill goal in the future? Why?</li> <li>4. How might you learn about additional alternate strategies to teach this content/skill goal (e.g., consult literature, talk with other instructors, attend workshops)?</li> </ol> |

**Definitions** of terms used in the assessment questionnaires drafted below. For the purposes of this study:

1. **Metacognition** refers to an intentional focusing of attention on the development of a process so that one becomes aware of one’s current state of engagement and accomplishment, along with situational influences and strategy choices that are currently, or have previously, influenced engagement in and accomplishment of that process.
2. **Metacognitive instruction** refers to **an instructor’s regular use** of a collection of strategies to prompt awareness and self-regulation of teaching and its impact on student learning (e.g., intentionally monitoring what works and why).
3. **Metacognitive instruction strategies** refers to **the behaviors** that promote awareness and self-regulation of teaching and its impact on student learning (e.g., pre-class reflection on learning goals for a particular lesson, intentionally adopting teaching strategies designed to support those goals, active monitoring of student learning, a willingness to shift to alternative strategies based on situational awareness of student needs).
4. **Reflective teaching** refers to one of a number of ways you might think about your teaching (e.g., considering whether an assignment seemed to “work,” whether students enjoyed a particular activity), but does not include intentional focusing on the development of an instructional process that results in explicit behavioral change based on self-regulation and situational awareness.

## Assessments

### Types of Assessment

- Intervention Instructor Questionnaires: Demographics, Pre, Mid, Post-semester (required).
- Control Instructor Questionnaires: Demographics, Pre- and Post-semester (required)
- Mid and Post-semester student questionnaires (required for intervention and control).
- Periodic samples of instructor reflection journal entries (optional)

**Demographic information (Pre-semester for all participating instructors):** Complete these for each class/section included in the study --- only one section of one course is required for participation in this study, but an instructor may include more. If additional sections are included, then intervention and assessments should be completed for each.

- Instructor name
- Instructor course/section
- Institution
- Number of years teaching in higher-education -- 0-1 years, 2-4 years, 5-9, 10-15 years, 16+ years