Supporting Metacognition in Writing Strategy Instruction: Effective Learning Strategies for the First-Year Student and Beyond

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Abstract

To meet the challenges of college, students need to develop not only knowledge and academic strategies but also strategies for self-regulated learning. For the past decade, the Supporting Strategic Writers (SSW) project has developed and evaluated instructional approaches that include strategies for critical reading and writing integrated with metacognitive strategies for learning. Two years of design research (MacArthur & Philippakos, 2012) and three experimental studies in developmental courses (MacArthur et al., 2015; 2022; 2023) have found large effects on the quality of writing and positive effects on motivational factors like self-efficacy and affect. The authors explain how they have adapted the learning, reading, and writing strategies for use across the curriculum, including first-year experience courses, summer bridge programs, ESL, and upper-level courses.

Recommended Citation

The Need to Teach College Readiness

In 2014, Amy Parks wrote that "the life of the traditional first-year student is rife with negotiations against chaos" (para. 3). The chaos to which she refers is the "confusion" that so many first-year students have about their "learning identities." Parks asks: "[W]hat if all their previous academic problem-solving strategies are inadequate for the new set of college-level tasks?" How much truer is Parks' point today, ten years later, because of the pandemic's many effects on learning, because of the growing amount of online and hybrid education that students must navigate, and because of the increasingly high cognitive demands of college-level reading and writing? How much more "inadequate" are the strategies that today's students bring to their first-year of college? According to a recent study done by EAB, a higher education consulting firm, 22% of first-year students reported being emotionally and academically unprepared for college (8% higher than in 2019), and first-generation college students reported the same at the rate of 28% (Hall, 2023). Too many first-year students are, simply put, not coming to college ready for college.

In an effort to establish just what educators mean when they talk about "college readiness," a group of hundreds of scholars and secondary and postsecondary educators collaborated to produce *The Framework for Success in Postsecondary Writing* (CWPA et al., 2011). In short, they argued that to be prepared for college writing and college work, students must develop certain "habits of mind" and encounter a range of experiences across disciplines that build communication and analytic skills because writing and reading skills cross into every domain (CWPA et al., 2011). "Habits of mind," the FSPW authors explained, include concepts like curiosity, engagement, flexibility, persistence, and responsibility–the very qualities that most educators report are alarmingly absent in too many students today. Driscoll and Wells (2012) identified a similar concept in their "dispositions," which they define as the attitudes that students have toward knowledge and skills that influence how they use what they know and learn (value, self-efficacy, attribution, self-regulation). Arguably, during the pandemic, students were not given the challenges or responsibilities needed to develop these "habits of mind" (CWPA et al., 2011) or "dispositions" (Driscoll & Wells, 2012) in an educational context in which many instructors and students struggled just to get by. And without these "habits of mind" (CWPA et al., 2011) or "dispositions" (Driscoll & Wells, 2012) established as they enter college, first-year students have a tougher time developing the writing, reading, and analytical skills that they need even just to write a typical research paper (Kintsch, 2004), never mind to engage in deep learning. Today's first-year instructors, then, need to teach more than introductory biology or first-year writing; they also need to help students cultivate the "habits of mind" (CWPA et al., 2011), "dispositions" (Driscoll & Wells, 2012), and literacy skills that will set them up for success in all their classes and beyond. The question is: how?

The authors of this paper and others have worked together over the past decade to develop an instructional approach for college writing instruction called Supporting Strategic Writers (SSW, MacArthur & Philippakos, 2023). Based on self-regulated strategy instruction, SSW was designed for developmental writing classrooms, and it has been studied extensively in that context with highly positive results (Graham et al., 2016). In the SSW program, students learn systematic strategies for planning and revising based on rhetorical purposes, text structures, and linguistic features of genres. Critically, these strategies are integrated with metacognitive, self-regulation strategies for goal setting, task management, progress monitoring, and reflection.

Our research on SSW in college basic writing, including four experimental studies comparing SSW instruction to control classes, has found large effects on writing quality and motivation. The first two studies (MacArthur et al., 2015, 2022) found large effects on the quality of argumentative writing without sources; the average student in SSW classes scored at the 90th percentile of control students. The studies also found positive effects on motivation, especially self-efficacy (or confidence) in writing. Two other studies (MacArthur et al., 2023; Nefferdorf, 2024) focused on writing using sources and included strategies for critical reading. Again, both studies found strong positive effects on the quality of writing.

Many of the instructors involved in the experimental studies recognized the power of the approach and applied the instructional methods used in SSW in other first-year courses. In this paper, the authors (one of the principal researchers and three instructors who have used it in their classrooms and collaborated in improving the curriculum) describe their efforts to adapt the metacognitive, reading, and writing strategies to other first-year courses, including first-year composition, a summer bridge program, and discipline-specific courses.

Across these varied courses, a critical goal was to help students develop self-regulated strategies for critical reading and writing and develop a sense of self-efficacy and independence as learners. This independence, the ability to make one's own choices about what to do next in pursuit of learning, is arguably the key difference between a high school attitude toward writing and a college one (Blake et al., 2016) since learning to write is not just a matter of mastering content (what is a thesis statement, how to write a coherent paragraph, and so on), but of mastering the self (How do I manage the complex tasks demanded of a writer?) (Blake et al., 2016).

Given the challenges that so many first-year students experience today, including feeling negative about writing and themselves from previous writing instruction (Lunsford, 2015; Wardle & Downs, 2020), the authors wanted to share their successes in the hopes that others will consider SSW in teaching their writing assignments across the curriculum, particularly in the first-year classes. In the next section, we present a theoretical framework on metacognition and reflection. Then, we describe how the SSW curriculum supports metacognition. After that, we describe how we applied the metacognitive strategies from SSW in other first-year courses and reflect on student learning. Note that we did not conduct systematic research in these classes, but our observations over the last decade are consistent with the gains in writing and motivation found in the four experimental studies of SSW.

Metacognition, Transfer, and Self-Regulated Learning

Reflection and metacognition, important components of self-regulated learning (SRL), are used widely across educational settings because of their utility and effectiveness. Metacognition increases students' awareness of the moves they make as writers, giving them more control over their decisions and practices when writing (Wardle & Downs, 2020). Metacognition also helps students synthesize new experiences and existing mind-maps (Bransford et al., 2000; Ryan & Ryan, 2013; Yancey et al., 2014) as well as contextualize those new experiences within their culture (Ryan & Ryan, 2013). When students go through the processes of "experiencing, reflecting, thinking, and acting," a process Kolb and Kolb (2009) call the Experiential Learning Cycle/Spiral, they develop their potential for learning (p. 294), and

they view that learning as "knowledge transformation" in which they are agents, rather than as "knowledge transmission" where they are passive recipients (Ryan & Ryan, 2013, p. 246).

The other critical effect of cultivating metacognition in learning is transfer: applying lessons to new learning situations. In the teaching of reading, research has shown that metacognition shows "apprentice" readers the reading processes they are using, "and indeed, that there are reading processes," a discovery that enables apprentice readers to make progress toward becoming accomplished readers (Greenleaf et al., 2023, p. 26). In composition studies, teaching-for-transfer writing courses (Yancey et al., 2014) require "systematic reflection" as well as composition-specific content; writing-about-writing curricula (Wardle & Downs, 2020) cultivate metacognition regularly as well, leading students toward deep learning about writing processes and threshold concepts (Adler-Kassner & Wardle, 2016) that allows them to apply lessons to new writing occasions. The ability to transfer lessons from one situation to another marks, in effect, the transformation of students from participating in teacher-regulated learning to being agents directed by self-regulated learning, or students learning independently. This is the goal of education.

How SSW Supports Metacognition and Independence

The Supporting Strategic Writers (SSW) instructional approach is based on extensive research on strategy instruction with self-regulation (Harris & Graham, 2009; MacArthur, 2011). The goals of SSW are consistent with standards for college writing: students will develop knowledge of academic writing; strategies for critical reading, planning and revising; and the motivational beliefs that support continued critical reading and writing in the future (CWPA, 2014; Driscoll & Wells, 2012; Rose, 1989). As in many first-year composition courses, students learn strategies based on the rhetorical purposes, text structures, and linguistic features of genres. But what makes SSW unique is that these writing strategies are *integrated* with self-regulated learning (SRL) or metacognitive strategies for goal-setting, task management, progress monitoring, and reflection. This integration is critical; SRL cannot be taught in a vacuum since students need to apply SRL lessons in a subject or discipline to see that SRL is effective. A person cannot, for example, learn to manage their tasks or reflect metacognitively without having tasks to manage or a subject to reflect upon.

This integration helps students not only learn the content of the course, but also develop the "dispositions" (Driscoll & Wells, 2012) toward learning like flexibility, persistence, and other "habits of mind" (CWPA et al., 2011) that help them internalize what they have learned. Developing these dispositions (particularly flexibility and persistence) can be challenging for first-year students who scored low in these and other "habits of mind" in a recent study (Hamilton & Kalyuk, 2022). Another common challenge for many first-year writers is the desire to write in the ways they did in high school writing assignments (Lunsford, 2015). The SSW curriculum, however, explicitly foregrounds self-regulated learning (SRL), supporting students' awareness about their learning capabilities (metacognition) and helping them form their learning identities. This is because SRL is cultivated in the same way that metacognition is cultivated: with goal setting, task management, progress checking, and reflection, strategies that together are referred to in SSW as the Strategy for Academic Success (Figure 1). By integrating these learning strategies into every stage of the writing process, the SSW curriculum helps instructors

provide educational experiences that engender the desirable FSPW "habits of mind" (CWPA, 2011) and Driscoll and Wells's (2012) "dispositions."

Figure 1

Supporting Strategic Writers "Strategies for Academic Success"

The integration of writing strategies and the SRL strategies occurs at many levels. First, the writing strategies help students to think metacognitively about and control the writing process. The writing strategies are based on social and cognitive models (Hayes & Flower, 1986; MacArthur & Graham, 2016) that view writing as a goal-directed, problem-solving process of goal setting, planning, drafting, and evaluating/revising. The planning strategies begin, for example, with analyzing the rhetorical goals of a writing task based on topic, audience, purpose, and genre; then students brainstorm based on their prior knowledge (Figure 2).

Figure 2

Strategy for both Rhetorical Analysis when Reading and Planning when Writing.

TAAPO & IDEA T- CHART

TAAPO

T (Topic)

A (Author)

A (Audience)

P (Purpose)

O Organization)

Idea T-Chart

Use for Brainstorming and Integrating Ideas from Sources

Topic or Issue:	
One Side	Opposing Side
What questions do I have?	

Note. This example is from the unit on the argument genre.

Finally, they use genre-based graphic organizers to select and organize ideas for their essay (Figure 3). With the content organized, students can concentrate on finding the right words and elaborating their ideas while drafting. Genre is central to the writing task as genre awareness is central to becoming an independent writer (Lunsford, 2015; MacArthur & Graham, 2016; Wardle & Downs, 2020).

Figure 3

Strategy for Both Notetaking when Reading and Organizing when Writing.

ARGUMENT GRAPHIC ORGANIZER (GO)

Use for Notetaking and for Planning your Own Essay

Citation:			
Issue/Problem:			
Author's position (or central idea)			

Reasons (or main points)	Key evidence (or supporting details)	Comments

Opposing position (if present)			

Opposing Reasons	Support/evidence	Rebuttal	Comments

Note. This example is from the unit on the argument genre.

Perhaps the strongest connection between the writing strategies and SRL strategies occurs during the evaluation and revision of a draft. The curriculum places a strong emphasis on learning self-evaluation, which is essential both for good writing and SRL. Evaluation is guided by genre-specific rubrics with clear criteria. For example, the rubric for argumentative writing includes questions such as 'Is the position stated clearly?' 'Is the first reason supported with

evidence?' 'Are opposing reasons considered and rebutted?' When students have completed drafts, peer review provides an opportunity for students to learn effective self-evaluation and to learn from others. In self-evaluation and peer review, students are taking ownership of the evaluation process, and, rather than waiting to be told by an authority figure what does and does not work, students are acting as their own authorities (or as true authors), deciding what works and what does not work in their writing.

Another strength of SSW is that the SRL strategies complement the writing strategies by focusing student attention on their learning over time. Students begin new assignments with the lessons learned from the reflection on the previous assignments in mind. Thinking back to the feedback they received from peers and instructors on previous work as well as their own reflections, students set individual goals for the new writing task; these are in addition to the rhetorical goals set as part of the writing strategy. For example, one student might decide that she needs to do a better job providing evidence to support her reasons, while another might set a goal to improve transitions. In addition to setting writing goals, students reflect on how they used the strategies and how the strategies helped their writing. Then, as part of task management, they set goals and make plans to use the strategies better or to modify them to fit their needs. In other words, students set goals both for their writing (e.g., improve evidence, transitions) and for strategies to complete their work (time and task management). As they work, they check their progress by asking themselves whether they are following their plans (Am I using the strategy?) and whether they are working toward their individual writing goals. This progress checking is important because it gives them opportunities to make adjustments. After completing the assignment, they reflect again on their writing progress and success with using the strategies. Importantly, when they see their own progress as judged by themselves as well as the instructor, their confidence improves. As students make gains in confidence, or self-efficacy, they are more likely to think about what else they could try (Pintrich, 2003).

The overall goal of strategy instruction is for students to learn to use strategies flexibly (flexibility being yet another of the FSPW "habits of mind" [CWPA et al., 2011] needed for college success), so that they can transfer and adapt them to future writing tasks. This focus on students' learning over time increases the likelihood that students will transfer the strategies they learned to future courses. The integration of SRL and writing-course content supports transfer or growth toward becoming independent learners. Students learn to evaluate their progress on tasks and think on their own about next steps to take, rather than wait for an instructor to evaluate their progress. This reflection helps students assess which learning strategies work for them and which do not (Kolb & Kolb, 2009), enabling them to guide their own discovery, an essential component of independence as learners (NASEM, 2018). With this identity as independent, self-regulated learners in place, students can move toward the college-ready "habits of mind" (CWPA et al., 2011) that characterize independent, lifelong learning. In other words, metacognition, actuated as SRL, is a foundational "habit of mind" that cultivates the development of other "habits of mind" like curiosity, persistence, engagement, and responsibility, and so it also develops college-readiness (CWPA et al., 2011).

For students to benefit from SRL, lesson plans must be designed to incorporate how students will consider their learning experiences (Ryan & Ryan, 2013). With intentionally planned reflective elements in discipline-specific classes, Ryan and Ryan (2013) discovered both quantitative and qualitative data in support of improved student performance. They cite McGuire et al. (2009) when they noted that well-constructed reflective assignments with clear directions

and rubrics were the best tools for helping students synthesize information between the classroom and the workplace. Driscoll et al. (2020) found that metacognitive exercises were much more effective for teaching nuanced genre knowledge when they were specific to skills needed in the text that students just completed. When students were asked to describe generalized writing tasks, it did not serve to enhance their genre knowledge (Driscoll et al., 2020).

SSW ties numerous practices and theories together in one multi-pronged and coherent curriculum, supporting both instructors in their teaching and students in their learning. Ryan and Ryan (2013) call this a "pedagogic hub" (p. 253). In this way, the practices can be more easily used across the curriculum using similar terms and can help ensure students' success in both learning about the discipline under study and deepening their knowledge through reflection (Ryan & Ryan, 2013). Since many students do not have schemas around writing tasks, SSW offers strategies in a global approach that support students in creating those schemas, including all the writing stages for many genres.

How SSW Has Been Applied in Different Contexts

Although SSW was originally designed for the first-year developmental writing class, the authors have recognized its usefulness in other first-year class contexts as a means of supporting students' development of self-efficacy, persistence, and agency. Below are the first-person narratives of three instructors involved in the SSW experimental studies who have successfully used the curriculum in various ways over the past decade.

Introductory Writing Courses

Since participating in the 2012 study examining the effectiveness of SSW with developmental writing students, I have incorporated its principles regularly into all my classes, including both levels of first-year writing courses. When first-year writing students use these strategies, they progress in what I see as a critical lesson: taking ownership of their writing.

One SSW strategy for which my students are widely grateful is the analysis of stronger and weaker examples at the start of any assignment. To begin a new assignment, together we analyze student examples of that assignment from previous semesters. Students enjoy hearing something closer to their own voice than that of a professional writer, and they can easily access where their fellow student writers have made more and less effective rhetorical moves, a practice that engages them in a productive kind of metacognition rooted in examining similarities and differences (Beach, 2003). This builds their confidence about the genre under study.

Another SSW component that helps my first-year writing students grow into more independent and self-efficacious writers is the gradual release of responsibility. In these classes, I use think-aloud modeling to start, and then the students and I collaboratively compose an essay (or part of one, given time constraints). Then, with guidance from me, the students write a similar one on their own based on peer and instructor feedback on rough drafts as well as their self-evaluations of those drafts. By the end of the term, they write an essay from start to finish in the two-hour final exam session entirely on their own, with a shift in responsibility for writing progress from teacher to student that marks the development of the "habits of mind" (CWPA et al., 2011) needed for college writing. Students recognize that a project that once took three to

four weeks now takes them only two hours, which sets them up to see that they can produce a solid draft in a short time on future writing assignments. Again, the students themselves recognize this–it is not the teacher telling them–which contributes to their growth as independent writers and students.

The most important curricular component of SSW that I have made a part of all my teaching is the integration of the Strategies for Academic Success (set a goal, manage tasks, check progress, and reflect) and the writing strategy (plan, draft, revise, edit, and finish). Regardless of the course, assignment, or class level, we begin by setting a goal for the assignment using the TAAPO strategy: Topic, Author, Audience, Purpose, Organizational elements of the genre. Students use this strategy as an aid in analyzing the rhetorical situation of the paper when writing (e.g., why am I writing? to whom? what kinds of information or organizational elements do I need to include to write in this genre?), and they use it again, together with the graphic organizer, as a support in taking notes when reading source articles for research papers (e.g., is this author reliable? what is the author's purpose in writing?). In identifying these aspects of the assignment, students set a concrete and measurable goal for their papers. TAAPO is effective, efficient, and easy to learn; in the TAAPO analysis, the students more easily recognize the writerly choices they make and why they make them, increasing their self-awareness and deep learning.

After setting their writing goal, it is easy for my students to check their progress as they write to see if they are still on track with reaching that goal, and, if they are not, they can shift strategies to bring the work back toward the goal. The key is that *they* are doing the evaluating of their progress: not the instructor. They are supported by the SSW strategies (e.g., TAAPO, genre-based graphic organizers and rubrics, Strategies for Academic Success), which support their taking control of identifying the strengths and weaknesses of their text. While writing, my students reflect both formally and informally on both their writing process (e.g., what is working and what is not for their timely production of the assignment?) and the writing product (e.g., is this draft still aimed at the goal set out in the TAAPO?). The formal reflections at the end of writing assignments in the forms of individual journal entries and a collaborative class conversation help them feel good about what worked and find ways to continually improve.

Many first-year students see completing assignments as a linear process: follow the steps, get the assignment done (Sommers, 1980). But completing a writing assignment well requires metacognition: the recursive nature of writing demands that authors regularly evaluate their work to decide at any point whether to draft, edit, revise, or even re-plan as Sommers (1980) found in her analysis of experienced writers. The SSW curriculum supports writers in making these moves so that they develop metacognitive awareness, or the "systematic reflection" that is characteristic of deep learning and transfer (Driscoll & Wells, 2012). It is these students who are more likely to be curious, engaged, persistent, and responsible–students with the "habits of mind" (CWPA et al., 2011) needed to succeed in college and beyond.

Bridge Program

I started using the SSW curriculum in 2014 in developmental writing courses that were prerequisites for university-level composition courses. Many of these students lacked confidence in their writing skills and were eager to try a new approach to writing. Students who were inexperienced with writing were reassured by the support and scaffolding built into the SSW

approach with graphic organizers and steps to manage the writing tasks. Their confidence increased with the gradual release of responsibility offered by the instructional approach, which begins with think-aloud modeling, progresses through collaborative writing, and culminates in independent writing.

Encouraged by the success I was witnessing with students in my developmental writing courses, I integrated the SSW curriculum into first-year composition courses as well. Similarly, students in these courses needed an approach to writing that would build their confidence and give them a structured approach to writing while also strengthening their critical reading skills and integration of sources in their writing.

Over the last ten years, my experience working with students who are making the difficult transition from high school to college has sparked my interest in "bridge programs" in general, and, more specifically, in bridge programs that support struggling writers. I have worked closely with this student population, designing curricula to support their needs, and, in the summer of 2022, I had an opportunity to integrate the SSW curriculum into a summer bridge program at the University of Delaware. As the coordinator for the writing course in the "Get Ready" program at the University of Delaware, I adapted the SSW curriculum to a five-week course, Strategies for College Writing, that provided high-need students with a structured approach to critical reading and writing. This approach can be used across many disciplines at the college level to improve students' writing skills and self-efficacy, so it seemed like a natural fit for the summer bridge program design. The writing course was also paired with a study skills course, Academic Self-Management.

The SSW approach my colleagues and I adapted for this five-week program included a six-step writing strategy paired with the metacognitive focus embedded in the Strategies for Academic Success. Students used this strategy to write summary-response papers and an essay with sources, gaining experience with the steps in critical reading and writing. An aspect of the course that I felt worked particularly well was the critical reading and integration of sources. Integration of ideas across sources is challenging, even for experienced writers, and, for students who are not confident or have little practice doing it effectively, it often results in plagiarism. The approach in SSW allows students to see argumentative writing as a process of understanding multiple perspectives and forming their own position and arguments, rather than piecing together or just cherry-picking quotes from sources. Students read the source material using a social annotation platform, Perusall, take time to discuss the articles, and then collaborate to build a consensus of meaning. This approach results in a kind of rhetorical intertextuality that promotes not only a holistic approach to the text, but also ethics around using outside sources, with specific instruction in APA style and use of signal phrases and sentence frames to support citation.

The writing course, Strategies for College Writing (SCW), provided a valuable complement to the academic skill building that students were exposed to in the concurrent Academic Self-Management (ASM) course. Much of what students learn in the ASM course is hypothetical; students do not know what college will actually be like and have yet to experience many of the challenges that the targeted skill-building content seeks to address. Pairing the ASM course with the SCW course provided students with an opportunity to practice some of the skills they were learning about, such as goal setting, time management, accessing and utilizing academic resources, the science of learning, and becoming an effective learner through metacognition. Students had targeted assignments for each of these skills in their ASM course

and also had weekly reflections in SCW using the framework of the Strategies for Academic Success. The reflections prompted students to set specific goals for their writing assignments, identify ways that they could manage their work and time (what strategies would they use), monitor their progress towards their goals, and reflect on their completion of tasks and use of the strategies and skills learned. The metacognitive aspect of the SSW approach used in the ASM class aims to help students with transfer of these skills to future reading and writing tasks, making it an effective tool for students to carry on to their first-year college courses.

When it came time for us to evaluate how well we did in meeting program goals, we asked the Get Ready students how they felt about their summer bridge experience in a focus group, and feedback from students was overall very positive. In their interview responses, students expressed gratitude to have been in the program, saying that they engaged in the kinds of reading and writing activities that kept their minds active over the summer and that the assignments gave them practice with writing in a structured way. Students also expressed satisfaction with the reflections and responses they wrote using the Strategies for Academic Success and specifically mentioned that understanding metacognition has helped them manage their efforts in their fall semester courses. Students also mentioned that they benefited from the "head start" that exposure to Canvas and Perusall gave them as well as learning about APA formatting. They felt that this made for an easier transition for them and reported that this was demonstrated in their grades.

Humanities, Ethnic Studies, Literature, ESL, and History Courses

I started as a basic writer: I struggled to understand a pattern other people thought was basic, and it was not until I was in graduate school that I started to get it. I started to teach writing, and I was hoping to make a difference. I would discuss genres and grammatical errors; students would nod and smile like they understood and then leave the classroom only to not write. People were failing my class and leaving their hopes of college with it, like Mike Rose's (1989) students.

In the spring of 2012, I received an email with an article about a writing curriculum, *Supporting Strategic Writers* (SSW), where the majority of the students improved 2 points on a 7-point scale of writing quality (MacArthur & Philippakos, 2012). The authors of the curriculum, Dr. Charles MacArthur, Dr. Zoi Philippakos, and Dr. Melissa Ianetta, wanted to know if our English department wanted to participate in another stage of the study; we were excited to do so. I was one of the intervention instructors, and the SSW training was more intense than my teacher training. Most English teachers do not like to script lessons, and most are not enthusiastic about making our thinking visible (think-aloud modeling). SSW is both of these things and the most effective curriculum I have ever worked with.

I started with this curriculum in a developmental writing classroom, but I have used SSW strategies in humanities, ethnic studies, literature, ESL, and history classes. The think-aloud is one of the most effective strategies because one challenge in teaching writing is that the mental process involved is invisible. Making those processes visible by speaking one's thoughts is a powerful tool. When I am brainstorming or struggling with an idea in front of a class, it feels vulnerable and uncomfortable. But for students, it is a revelation (and it is fun to watch). As one student reflected, seeing the parts of the writing process took out the guesswork and made writing easier (MacArthur et al., 2014).

Another SRL/metacognitive strategy around task management from SSW that has proven valuable is to scaffold out assignments that are assessing written communication as well as critical thinking. At first, students in all disciplines resist the scaffolding. ("Planning? Nobody has ever made me do this before!") However, students soon see value in spending time every week thinking about their project as they gain a deeper understanding of their subject. The students also have a weekly low-stakes assignment where it is safe to make mistakes as they engage in information literacy and incorporating outside sources into their project. Numerous students stated in reflections that the scaffolding allowed them to manage their procrastination more effectively. This type of scaffolding has proven effective across the curriculum and has been adopted by other discipline chairs in their curriculum design.

One element of the SSW curriculum that is highly effective for student empowerment is the SRL/metacognitive strategies themselves. Too often in my classrooms, I see students who think academic success, their own learning and growth, is not in their control. They do not want to try new things because they do not want to fail AGAIN. But then, in using the SRL/metacognitive strategies, students have to think about their goals, the steps they take to reach them, and whether those steps are working or not. Then they have to think about trying a number of new strategies connected to writing and thinking and their investment of time and effort into trying those new strategies.

One student, in her reflection, offered that goal setting changed her perspective. It was not that she just wanted a passing grade; she learned to ask herself what she wanted her readers to understand in her writing (MacArthur et al., 2014). One student found school going better than expected: "Throughout the semester, I have constantly used goal setting and task management. Planning ahead with a goal in mind helps me to better prepare and succeed…. Constantly planning ahead, I succeed[ed] or exceed[ed] my intended goal" (MacArthur et al., 2014). One student found that planning made it easier to get back on task even after time away; others found the writing process less frustrating because of the methodical approach found in the strategies. One student was able to change his perspective from feeling like a complete failure because he made mistakes into less of a complete failure because he was able to learn from them (MacArthur, et al., 2014).

The idea to use the strategies across the curriculum came from student reflections. One student wrote about scaffolding her work for Global Civilizations over five weeks rather than doing it in one sitting, and another student wrote about being happy that his work in Sociology 101 was being praised by the instructor instead of being a point of stress for him (MacArthur et al., 2014).

It is humbling and gratifying when students experience success with the SRL/ metacognitive strategies and they see how much of their own learning processes they do own. Success with SSW may have just changed the trajectory of that student's life in that they are going to be more willing to try new strategies in the future, and that opens up whole new possibilities.

Conclusion

The proliferating student success efforts that all colleges and universities now have in place are helpful, but post-pandemic, it seems that almost all students need such support in

developing the academic strategies and resilience to be successful in college. Providing that support in a way that is not connected to the content of the courses, in weekly meetings with success coaches or tutors, for example, can be helpful, but not as much as if the support were integrated into the class curriculum and guided by their instructors. Without that integration, students have no way to evaluate if the strategies are useful to them and that is if they are even asked for this analysis, which is unlikely. The ability to self-evaluate is key, and, in this sense, a curriculum originally designed for developmental writers is appropriate for first-year classes in general because of the focus on self-evaluation.

SSW offers a way for instructors to teach students self-evaluation as a part of metacognition and with the goal of self-regulated learning. The success of SSW is rooted in the integration of SRL strategies and the writing process. However, the SRL strategies can be integrated into any course content, especially those asking for communication/writing, information literacy, and critical thinking, which is most college assignments. This integration supports first-year students in recognizing that they are the agents of their own learning. Students learn to set goals, check their progress, analyze the results, and then repeat the process, setting new goals when needed. In this way, students discover how to engender their own continual growth, and they are much more likely to develop the academic "habits of mind" (CWPA et al., 2011) needed to succeed, like metacognition, engagement, persistence, curiosity, and responsibility.

The SSW curriculum is complex and has been applied most effectively when introduced to instructors with professional development workshops, which we recommend. However, there are elements of the curriculum that instructors can connect to assignments that they are probably already using. As the narratives above note, using the analysis of strong and weak examples, the gradual release of responsibility, the TAAPO, think-aloud modeling: these are all strategies that can be incorporated into first-year classrooms. Above all, first-year instructors can integrate the SRL strategies of setting goals, managing tasks, checking progress, and reflecting with their current assignments as a way of supporting self-regulation, metacognition, and transfer as well as the cultivation of academic "habits of mind" (CWPA et al., 2011).

This work suggests that further research on the effectiveness of SSW in a broad range of first-year and other courses is desirable. For more information about the Supporting Strategic Writers curriculum, please see our recent book, *Writing Instruction for Success in College and the Workplace* (MacArthur & Philippakos, 2023).

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