Improving Student Metacognition and Self-Regulation Through a LASSI-based Assignment
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LASSI for Life: Cornerstone of International Freshman Seminar Prediction Profile for Academic and Professional Success via Metacognition and Self-Discipline
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Durham Technical Community College enrolls approximately 1,200 new students each fall and spring semester. Students in all degree programs, most diploma programs, and some certificate programs are required to take ACA 122 College Transfer Success, a one-credit hour, two contact-hour college success course. The course is designed to help students in three major themes: goal discernment, learning strategies, and college culture. Since Durham Tech began requiring the course in 2008, we have tracked fall-to-spring semester persistence rates and seen a longitudinal pattern of high rates of fall-to-spring semester persistence among students in our target population who successfully complete ACA 122.

Durham Tech students are diverse in age, race and ethnicity, and socio-economic status. Additionally, there are no pre-requisites for ACA 122 at Durham Tech, so we regularly teach students who place into low levels of developmental education along side their college-ready peers. We accommodate this diversity in academic readiness by creating open-ended assignments that meet students at their levels of writing ability and critical thinking. We credit the success of our course to not only the efforts we make to tailor instruction to the diverse students enrolled in the class but also to the direct instruction on metacognition.
Metacognition is thinking about how we learn, essentially asking not just what we're learning, but how we're learning it, with the goal of improving our competence in learning new and difficult material. Research indicates the effectiveness of metacognitive instruction, specifically highlighting how metacognitive approaches improve students' transference of skills to new information or tasks (Chick). Metacognitive strategies usually focus on improving students' capacities for planning and evaluating their own learning. In the process, students not only become more aware of how one learns (What do I need to know about this topic? What is the best method of learning this material?), but they also become more self-regulated learners, meaning they become self-reflective, self-aware, self-disciplined, and ultimately self-directed (How interested am I in learning this material, and how can I improve my motivation to learn it? Why am I resisting learning this new material, and how can I change that attitude?) (Nilson 2014).

Metacognition and self-regulation are critical concepts because our understanding and retention of information hinges on our accurate assessment of how well we're learning. As Stephen Chew, professor and chair of psychology at Samford University and leader in the field of metacognitive teaching and learning strategies, indicates, "Weaker students typically have poor metacognition; they are grossly overconfident in their level of understanding. They think they have a good understanding
when they really have a shallow, fragmented understanding that is composed of both accurate information and misconceptions" (as cited in Lang 2012). Student learning and development, then, are greatly helped by an increase in metacognitive and self-regulated instruction. In our college success course, one way we teach metacognition and self-regulation is through a LASSI-based assignment, the Problem-Solution Paper, which is assigned during the latter half of the course after students have practiced self-evaluation in other assignments and have read about learning strategies. Prior to the Problem-Solution Paper assignment, students complete the web version of the LASSI and bring their printed results to a class discussion on interpreting LASSI results. After learning how to read their results and participating in a brief in-class self-reflection activity, students receive the Problem-Solution Paper assignment, which is a three paragraph individualized paper. In the first paragraph, students use their LASSI results to identify and analyze a current struggle they are experiencing in college. In the second paragraph, students research and present three possible solutions to their problem. In the final paragraph, students select the best strategy for them to overcome their problem and describe their level of success as they implement that strategy over a week's time. In the final paragraph, students also describe how they would alter their selected solution to better improve their results. For example, students often select TMT, Time Management,
from their LASSI results as their Problem-Solution Paper topic since many of them often receive a low score on this scale. In the first paragraph, students describe why they selected time management, how long they've had a problem managing their time, and what will happen if they do not address the problem. Students are urged to be as specific as possible in reflecting on their problem, describing, for instance, the exact problem with time management, such as procrastination, failure to break large assignments into manageable tasks, meeting deadlines, prioritizing the day's tasks, etc. In the second paragraph, students discuss the strengths and weaknesses of three possible solutions to their specific problem, which they find in the textbook or through online sources. At the end of the second paragraph, students create a SMART (specific, measurable, attainable, realistic, and time-bound) goal for their selected solution, which they will implement in the next week. Many students, for instance, select to utilize a planner or create daily to-do lists in order to overcome time-management problems. After trying out their selected solution for a week, students then write their concluding paragraph, which analyzes the success of their strategy. Students indicate the strengths and weaknesses of their selected strategy and its implementation, noting how they would revise its application for better results. Students then conclude the essay with a revised SMART goal for future application of the method. Students regularly report that taking the LASSI and then
writing the Problem-Solution Paper is a beneficial exercise in applying meta-cognition concepts, mindfully practicing self-regulation, and improving their learning strategies. Because they can choose the academic problem that they want to address, they immediately feel more invested in the assignment than if they were to research an assigned topic. Similarly, they see that their LASSI scores are meaningful and not just an academic exercise. It is the combination of taking the LASSI, reflecting on their strengths and weaknesses, and then completing the Problem-Solution Paper that resonates with them. Many students end their Problem-Solution Papers with positive statements about how they see now that they can use specific learning strategies to improve their academic performance and that they will continue to experiment with additional learning strategies in the future. This process and assignment also encourages students to realize that successful students aren't innately different from unsuccessful students. Rather, all students can identify the behaviors that lead to success and begin to adopt those behaviors while shedding less productive ones. All students can regulate their own learning strategies and behaviors in order to achieve academic success; the LASSI and Problem-Solution Paper effectively demonstrate this idea to students in the college success course at Durham Tech.

References
Over the last twenty-five years, I have used the LASSI as the centerpiece of my “down and dirty” prediction profile, an integral part of our International Freshman Seminar here at Lehigh. Before sharing some tips that I have found to be very useful in convincing our fledglings of their need to ramp up or, in some cases, awaken to the need to develop learning/study skills to promote and optimize a successful academic experience in college, I would like to mention the two-pronged reason for our successful implementation of the LASSI: placing the student within the national norms (indeed, a “black and white” printout has clout) and student investment (in other words, a self-report inventory seems to facilitate trust in instructor expertise, illogical as that may sound). What then is the validity of self-report because, as we educators know, input = output. Let's find out!

To begin with, by way of garnering your trust, allow me to give you a short summary of my relevant credentials. First, I have been a reading specialist, since 1989 and a learning disabilities specialist/reading diagnostician since 2000, specifically teaching in the Intensive English Program (IEP) arena for many years, as well as working as a private diagnostician, performing comprehensive individual student testing/screening/interviewing, in addition to establishing documentation for students with learning differences. Also, I have taught study skills courses at several colleges and universities, as well as in high-risk high school programs,
and counseled developmental students. Additionally, I have worked with and taught students at every level for fifty years, from various countries and cultures, who speak a variety of languages as their first languages, including English. Therefore, based upon my extensive experience, I can easily say that only a small percentage of students have endogenous learning differences, whereas some difficulties stem from relationships, substance abuse, or family issues, while most students simply lack knowledge of study/learning strategies, preventing them from functioning optimally; equally important, they are unaware that they lack such knowledge. Enter the LASSI whose beauty and precision as a diagnostic tool and a foundation for planning almost any committed student's successful academic career is unequalled, no matter the country, the language, or the milieu. In fact, I have used the LASSI successfully in all instances.

Oh, yes, another important point is that the intensity and rapidity of our IEP at Lehigh precludes post-testing. Nevertheless, I have found again and again, reinforced by students' comments, that the LASSI has been the tool that has put these students on the road to success, given them the track to run on, as my dad used to say—if they have chosen to invest themselves by demonstrating the maturity to plan for their academic and professional futures. Furthermore, the LASSI prompts them to understand that, with such planning, not only can they experience success in college
but also begin to work on future career goals. For example, according to an international student from China:

In Freshman Seminar, I discovered . . . the result of the LASSI test (to be a) significant vehicle to improve my learning and writing efficiency: . . . LASSI surprises me the most at the low scores in Attitude and Interest Scale, and Motivational Scale. The test reveals that my underlying thought towards learning and college is negative. To improve my efficiency, I should accept more responsibilities for my academic outcomes and take advantage of short-term goals to accomplish specific tasks. For instance, if I develop interest in accounting instead of just finishing all assignments on time, I would be motivated to review concepts ahead of time and search more background information which would help my future career and make me interested. . . ”

Now, let me explain my venue for administering the LASSI. Used as the focal point of a constellation of self-reporting inventories that make up the prediction profile, the LASSI is completed by each international freshman for homework in the 5-hour Freshman Seminar. With the goal of including as much interaction, self-reflection, and enjoyment as possible in the plethora of theory and technique that needs to be presented in five hours (2/2.5 hour sessions), completion of a variety of self-reporting inventories is assigned: personality-type, learning style, multiple-intelligence, learning stages, relationship quotient, study skill GPA predictor,
Okay, allow me to set the stage for the LASSI process—we have completed the International Freshmen Seminar (high intermediate to advanced ESL students)—the students have filled out and discussed their inventories during Part B of the seminar—I have mentioned that they may come in for private conferences at will. In addition, in acute cases, I reach out to the student; also, private conferences can be automatically scheduled for each student (my favorite and most effective venue because “seeing is believing” when students are tacitly mandated to look at the LASSI results).

During the one-on-one, a more in-depth study of individual results, I begin by asking the student what he or she has discerned from these inventories in general; and then we begin with the LASSI in particular.

reading habits, stress indicator, and, last but not least, the online LASSI. We discuss, complete, compare, and laugh a lot, as we make some comments as a group during the second session of the seminar, where we look at volunteer individual results, followed up with optional individual conferences, to plan the student's second semester regimen for purposeful, effective, and economic study. I have found, through experience, that freshmen don't pay attention to this level of metacognitive reflection their first semester—what with social acclimation, and naïve academic bravado, they are not ready to modify or enhance their study skills until they have experienced some sort of “bottoming out” the first semester—then the light bulbs turn on in their heads; the aha moments occur.
I first ascertain whether or not the student has seriously completed the LASSI; in some cases, a student actually literally begs to take it over because he or she really wasn't serious at first blush but then has realized the error of his or her ways, especially after the self-reflective nature of the capstone project—a qualitative evaluation by each student of the seminar topics, through a series of one-minute papers requiring the completion of some supplementary reading of the seminar text on each topic (a sobering activity, I might add, according to the responses I have received, anyway).

First, the student is given an overview of the 10-subscale profile of the LASSI, scaffolded with the clearly targeted, indeed powerful and concise, LASSI Manual summary of each item (I specifically bring out the manual, reading and referring to it exactly, so the student is aware that we are not relying on my humble knowledge J, but that of a widely used study/learning diagnostic). After the student peruses the LASSI graph, now more aware of sophisticated college reading/writing demands, the 10 subscales are clustered. For example, patterns emerge, which direct the setting up of specific protocols/strategies/schedules for each student's needs. As mentioned to the students during the seminar, prior to the discussion and completion of the varied diagnostics, each of their profiles is unique—it's not one size fits all; therefore, individual strengths and weaknesses are honored. In other words, if students have learning and study strategies that work, the LASSI pinpoints
those areas, giving credence to the positive as well as the negative. On the other hand, if the student has weaknesses that have not been addressed, particular methods exist that may work best for him or her, perhaps only gleaned from individual conferencing/planning.

Now the specific subscale review begins where I have found that some cluster division works very well, usually starting with Information Processing—which gives me lots of clues in regard to learning styles, perhaps differences, even a discussion of the student's history of learning experiences (as the LASSI Manual suggests, “Using what we already know, that is our prior knowledge, experiences, attitudes, beliefs, and reasoning skills to help make meaning out of new information is critical to success in educational and training settings . . . not just the amount of knowledge but the ways that knowledge is acquired and organized”); then we implement suggested LASSI strategies to support this area of study. Next, we move to the Motivation, Concentration, Attitude cluster—discussing what attitude refers to and how that impacts motivation and thereby concentration (again the LASSI Manual is targeted and clear in explanation in this area: “If the relationship between school and life goals, [whether they be] academic, personal, social or work related, is not clear, then it is difficult to maintain a mind-set that promotes good work habits, concentration, and attention to school and its related tasks.”). In fact, we first discuss whether or not the student wants to be at Lehigh and/or if he or she is
currently in a major of choice; then we review the multisensory techniques learned in the Freshman Seminar, especially my favorites, SQ4R and Cornell Notetaking, to promote and enhance amelioration of problem areas. Now is the optimum place to talk about Main Idea—a wealth of material supports this subscale and higher order comprehension skill, always of paramount importance and a major problem for freshmen, especially our international students (LASSI commentary suggests that “if a student cannot select the critical information, then the learning task becomes complicated by the huge amount of material the individual is trying to acquire as well.”). Easily, we segue to Anxiety and, to student dismay, why sometimes anxiety coping skills can be too high, rendering a student cavalier and blasé about work—translated, unproductive and unengaged. Nevertheless, as mentioned in the Manual, “If students are tense, anxious, or fearful about . . . academic situations, this will divert their attention away from the academic task and inward to self-criticism or irrational fears . . . once these attentional blocks are removed, many students show large increases in performance.” From there, it is a short hop to Time Management, where I mention that the national research points to at least 50% of freshmen struggling with scheduling (Gardner & Barefoot, 2014); and then I bring out the daily, weekly, and semester grids that they have completed during the seminar—now interest waxes; “and this array of grids reminds students to create workable schedules, and perhaps, even
more important, it helps students to create the motivation to use them,” according to the LASSI Manual. Finally, we get down to the details of the testing cluster: Study Aids (“Unless students know how to recognize and use these hints and aids, they will not benefit from them . . . also important for students to know how to generate their own study by . . . going to instructor . . . searching for related material on the Web, forming study groups, comparing notes with other students to check for accuracy or completeness,” reports the LASSI; Self-Testing (“Without them [these self-testing strategies], learning could be incomplete or errors might persist undetected . . . strategies both support and contribute to knowledge consolidation and integration across topics.”); then Test Strategies, (“Knowing about test-taking and test preparation strategies and how to use them helps students . . . demonstrate their knowledge and skill acquisition so it can be accurately evaluated,” suggests the LASSI.). Quite seamlessly, relying on the credibility of the LASSI Manual direction of explicit aids and techniques for this final cluster, I reintroduce the student to concrete support materials to promote skill reinforcement as outlined in the Seminar.

All in all, the LASSI is a “black and white” touch point for complete learning and study skill planning, a jumping off place for identifying learning strategies, a focus for a balanced academic life, and a comprehensive review of any student's whereabouts on the learning/study continuum. In a word, effectively processing the Learning And Study Strategies Inventory can be a catalyst for the development of the metacognitive strategies that promote a passion for lifetime independent learning for the sake of learning, not just another easy fix to skate through college academics without acquiring any real wisdom.

References
“LSU Shreveport's Quality Enhancement Plan focuses on teaching students how to become more aware of their learning and how to make study and learning decisions more effectively.” (1)

In order to better prepare their students for professional and personal success in an ever-changing, global environment, Louisiana State University Shreveport will use the LASSI as part of their intensive Quality Enhancement Plan to emphasize and implement metacognitive practices throughout their curricula. After reviewing different assessment tools, they “determined the LASSI (Learning and Study Strategies Inventory) assessment to be the most consistent in terms of assessing whether the student learning outcomes had been achieved.” (2)

Metacognition occurs when a student is actively, mentally engaging in the learning process. Research and anecdotal evidence from faculty members led LSU Shreveport to identify metacognitive processes as the deciding factor in student success. They are aggressively implementing a plan to increase metacognition in all of their courses. To this end, the LASSI will be given as a pre and post assessment in all Freshman Seminar courses. In addition, the LASSI instructional module, Becoming a Strategic Learner, will be given in all Freshman Seminar courses to “provide students with the conceptual foundations to be more effective learners...students will be taught declarative and procedural knowledge about strategic and self-regulated learning
with the objective of developing conditional knowledge to determine when and under what conditions to apply a given skill or strategy. The course uses direct instruction, modeling, and guided practice with feedback.”

(3) They hope to replicate the success of students at the University of Texas at Austin who consistently demonstrate higher academic achievement and a higher likelihood to graduate when compared to students who did not take the course. LSU Shreveport will also offer the LASSI and LASSI instructional module, Becoming a Strategic Learner, to all transfer students. In addition, the LASSI will be given to graduating seniors with results cross-referenced with the student's Freshman Seminar score to analyze changes in aptitude across the 10 scales: information processing, selecting the main ideas, test strategies, attitude, motivation, anxiety, concentration, time management, self-testing, and study aids.

(1) Quality Enhancement Plan, Louisiana State University Shreveport, 2015, page 15
(2) Quality Enhancement Plan, Louisiana State University Shreveport, 2015, page 9
(3) Quality Enhancement Plan, Louisiana State University Shreveport, 2015, pages 18 and 30