Student Self-Tracking for Success in the Classroom

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Abstract
We describe a method, Student Self-Tracking, to improve success in the classroom. In the fall of 2016, students in Biology gateway courses completed an assessment form in the first week of class that included a description of expectations, concerns, outside commitments, motivations for doing well and a checklist of twenty-three study strategies they planned to use during the semester. After each exam they reexamined the checklist and explained why they did or did not do well on the exam and their plan of action in the future. The percentage of students who received a grade of > 70% increased on successive exams. The category that differed most among those who did and did not receive a grade > to 70% was the amount of time spent studying and preparing each day. Students felt the process helped them with study habits and strategies. Early intervention through the use of this instrument was effective. doi: 10.21692/haps.2017.055

Key words: retention, self-tracking, student, success, responsibility

Introduction
Retention and completion are the rally words of colleges today. This is especially true in community colleges. Community college students face unique challenges including being the first generation of college students in the family, having low income, needing to work, having families of their own, lacking a family support system, and having poor study habits (Hanover Research 2014). The task for community colleges is to provide students with the opportunity to achieve their dreams despite their many challenges.

Retention and completion methods do not necessitate lowering standards; instead it is necessary to raise students up to appropriate levels. Some colleges use early alert systems to keep track of student progress and provide timely intervention if necessary. Multiple indices are used in early alert systems including tracking attendance, grades, poor performance on assignments, participation in class, difficulty in math or reading, college adjustment, and financial or health concerns. Students in high-risk categories such as first year students, student athletes, provisional admission students, remedial students, international students and students taking gateway courses are often monitored more closely. The goal of intervention is to keep students on the correct upward pathway. However, results from studies assessing alert systems are equivocal and these systems may not be a panacea (Hanover Research 2014, Tampke 2013). We proposed a different twist to this system, Student Self-Tracking, which includes early instructor intervention and appropriate advisement to mitigate the problem(s).

Purpose
The purpose of this study was to get students involved in their own success through a self-tracking process. We want students to be self-aware and responsible in their studying and learning. We want them to assess themselves and the course and to communicate with the professor to develop a plan for success. Student self-tracking started the first week of the semester with each student describing their expectations of the course, motivations to be successful, commitments outside of class that might affect their ability to do their best in class, and perceptions of successful studying/learning strategies. After each exam students are assessed as to why they did or did not do well and devised a plan for improvement. This prompted timely faculty and student discussion to develop a plan of action. Instead of only having an alert process that is instructor driven, we included the student. The hope was to develop communication between the student and the instructor with a mutual goal of developing strategies for success.

Method
Six Biology faculty investigators were involved in this study. The study was conducted during the fall semester of 2016. Nine Biology classes with a total of 225 students participated in this study. Student ages ranged from 19 to 49 years old. The Institutional Review Board of Monroe County Community College (MCC) approved this study under the category of minimal risk, IRB file number 16-10. James Cronmiller, who serves as the Chair of the IRB at MCC, recused himself from review of this study. The acting Chair of the IRB, Angel Andreu, Director of Institutional Research at Monroe Community College, approved the study.

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During the first two weeks of the semester, students were given a Self-Assessment Form. This form included the following:

Open-ended questions

Question	Purpose of question
Why are you taking this course?	Purpose and motivation for taking course
What are your expectations concerning this course?	Describe expectations
Do you have any concerns?	Elicit general concerns or concerns about learning/ studying deficits
What are your motivations to do well in this course?	Describe motivating reasons for doing well in the course
Do you feel there may be outside commitments such as family, work, significant other (boy or girl friend) that may take time or energy and affect your ability to do your best in this course?	List the commitments, challenges students are facing as they take the course.
What are your expectations concerning the instructor of this course?	What do they want from the instructor

Check list of study habits. What is your study plan for this course?
(Please check from the list below)

Yes	No	
☐	☐	Attend class/ lab
☐	☐	Bring your textbook (lecture); lab manual (lab)
☐	☐	Pay attention in class
☐	☐	Take careful notes
☐	☐	Be organized (Bring writing material, i.e., a three ring binder or notebook)
☐	☐	Read information before class/lab
☐	☐	Complete all assignments on time
☐	☐	Tape record lecture (with permission of your instructor)
☐	☐	Be an active learner, asked questions, be engaged
☐	☐	Form a study group
☐	☐	Schedule time outside of lab period to come into lab and study models or materials
☐	☐	Take advantage of the Science Education Tutor Center, Instructor office hours, or seek help from tutors
☐	☐	Spend two to three hours studying and preparing each day
☐	☐	While studying do you "Force Recall" after learning an item of information, force yourself to recall it and check to see if you got it right
☐	☐	Will not cram for an exam
☐	☐	Study in an area free from distractions (TV, phone)
☐	☐	Set a schedule and stay with it
☐	☐	Read textbook and lab manual
☐	☐	Recopy notes, organize notes, summarize, repeat or re-phase orally, re-read text for understanding.
☐	☐	Use Publisher website (such as Connect); do practice problems and activities
☐	☐	Use DVDs, videos
☐	☐	Write index cards

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Recommendations: Test anxiety may be increased when you do not feel confident or you have not prepared well. So study and be prepared. Allow yourself to feel confident if you have studied and done your best. Get adequate sleep (8 hrs) and good nutrition.

Students were instructed to be honest, straightforward and transparent in their assessments as they completed this form. Students were told that the form would be used as a learning instrument to improve student success and that all answers would be held in strict confidentiality and would not be held against them.

After each exam, students completed a form with the following questions.

Why did you do well on this exam?

Why did you not do as well as you would have liked on the exam? What are your plans to do better?

The initial checklist of study habits was re-examined after each test. This prompted immediate faculty and student discussion to develop a plan of action. Action plans included an assessment of one or any combination of the following: study strategies, commitments outside of the classroom, time management, use of a tutor, working in study groups, and referral to appropriate college resources.

At the end of the semester students evaluated the process by answering two questions:

1. Do you feel the self-assessment process was effective and helpful?
2. Did it help you assess study habits and guide you in planning future strategies?

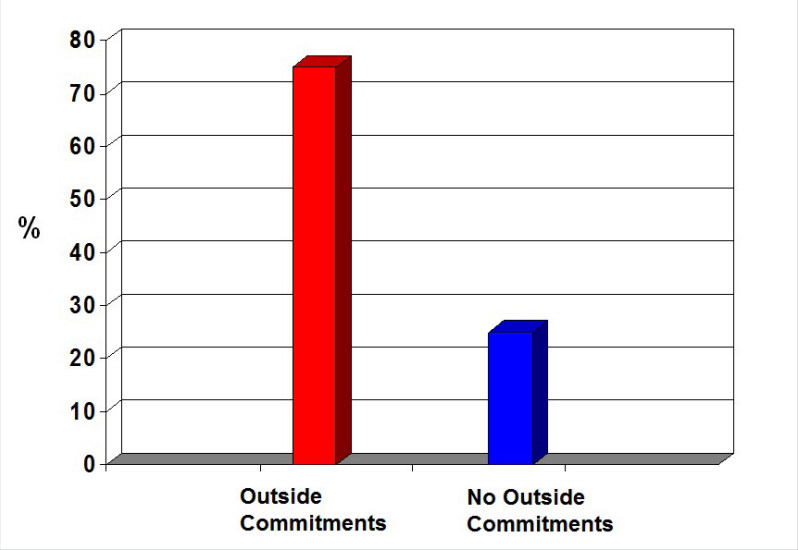
Students received ten points for each assessment they completed.

The Student Self-Tracking process was evaluated by assessing student grades and student assessment of the method. Efficacy of each study strategy was determined by assessing the number of students who used a certain study method and received a grade of ≥ 70% on an exam. The cutoff value of ≥ 70% was used because a C is the minimum grade requirement for students in a gateway course.

Results:

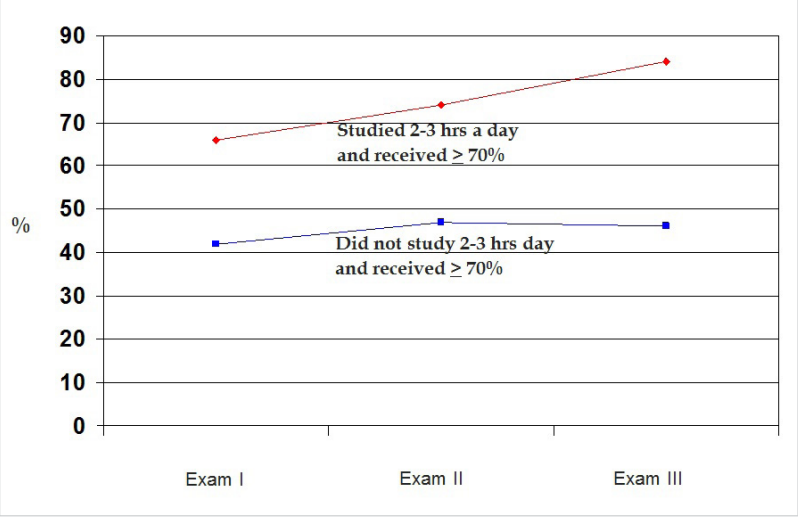
The reasons students took a particular gateway course and had motivation for doing well included keeping up with the progression stages of their degree program, seeking self-fulfillment, and working to fulfill the expectations of family members. Student expectations for the course included gaining foundational information for their degree, gaining personal knowledge, and getting good grades. The concerns students had entering the course were apprehension about the difficulty of the course, trepidation about the amount of memorization required, doubts about their ability to understand the material, concerns about coping with the pressures of outside work, time management issues, and the necessity for interacting with potentially disruptive class mates. The expectation students had of the instructors included their hope that the instructor would be a good teacher who knew the subject well, presented the material clearly and concisely, and was also fair, understanding, flexible, and available for advice.

Seventy-five percent of students in this study had outside commitments including work and/or had children (Graph 1).



Graph 1. Comparison of students with and without outside commitments.

A greater percent of students who studied and prepared for tests two to three hours a day received grades ≥ 70% on the first three exams (66%, 74%, and 84% respectively) vs. those who did not study and prepare for tests two to three hours a day (42%, 47%, and 46% respectively) (Graph 2).



Graph 2. A comparison of the percent of students who studied and prepared for tests two to three hours each day and received a grade ≥ 70% with the percent of students who did not study and prepare for tests two to three hours each day and received a grade ≥ 70%.

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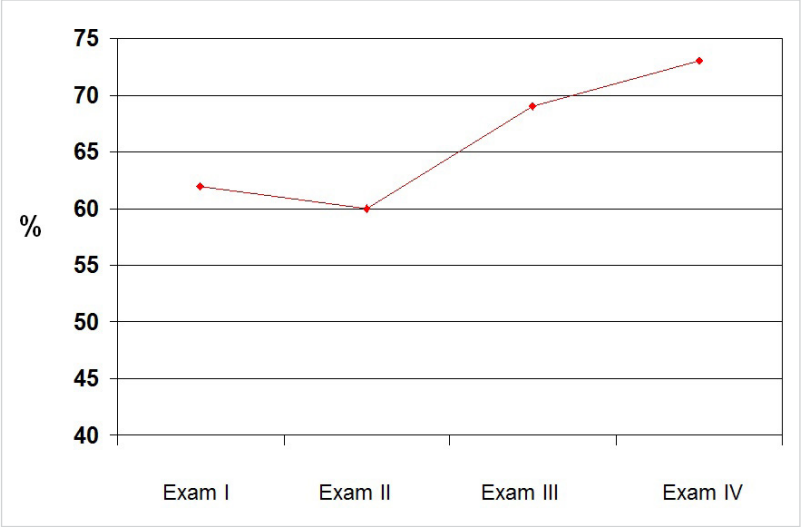
The first week of the semester 88% of students stated they would study and prepare for tests two to three hours a day. The results showed a steady increase in the percentage of students who said they studied and prepared for tests two to three hours a day from exam I to exam III (57%, 58% and 75% respectively).

Although the most significant differences in study habits between students who received ≥ 70% was preparation and time spent studying, other important influences included:

1. Setting and sticking to a schedule
2. Recopying notes
3. Completing assignments
4. Reading textbook
5. Studying in groups
6. Using the tutor center
7. Studying free of distraction

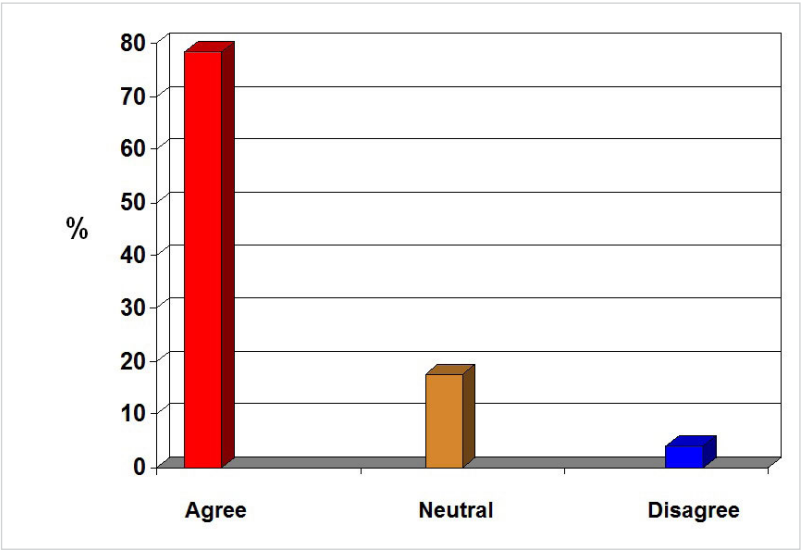
There was a progressive increase in scores 70% or above from the first to the fourth exam (Graph 3).



Graph 3. Comparison of the percent of students who received ≥ 70% on four exams.

Students in previous semesters who were not using the Student Self-Tracking process, did not show the same upward progression in grades. There were fewer withdraws in classes using the Student Self-Tracking process.

Students felt the self-assessment process was effective. It helped them assess study habits and guided them in planning future strategies (Graph 4).



Graph 4. Students felt the self-assessment process was effective and helpful. It helped them assess study habits and guided them in planning future strategies.

Conclusion and Discussion

Students in this study were taking gateway Biology courses such as Anatomy and Physiology or General Biology to advance into professional careers. They are considered at-risk students. Seventy-five percent of students in this study had outside commitments including work and/or marriage, with/without children. The students were extending themselves to pursue a college degree to improve their opportunities. Students entered the course with concerns including apprehension about the difficulty of the course, trepidation about the amount of memorization required, doubts about their ability to understand the material, concerns about coping with the pressures of outside work, time management issues, and the necessity for interacting with potentially disruptive class mates. Students expected the instructor to be a good teacher who knew the subject matter and was clear, concise, fair, understanding, flexible, and available for advice. Understanding the concerns and expectations of students early in the semester allows instructors to address these issues. Although these are

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typically well-motivated students, many needed guidance as they navigated these rigorous courses.
Students who employed appropriate study habits did better than those who did not. Habits that appeared to have the most impact on success included preparation and time spent studying each day, setting and sticking to a schedule, recopying notes, completing assignments, reading the textbook, studying in groups, using the tutor center, and studying free of distraction.

After each exam students explained why they did well and/or why they did not. They devised a plan of action to continue doing well or to improve. If students found it difficult to meet expectations, they met with instructors to discuss and implement a plan for future success. The strategies used by students were based on their needs and may have included acquiring time management skills, use of tutors, entering study groups, applying different study strategies or seeking counseling. At the beginning of the courses, a high percentage of students projected that they would use most or all study and learning strategies on the list to succeed in the course. Not all students initially followed their intentions. However, there was a steady increase in the number of students using learning enhancement strategies during the semester. Advisement with the implementation of appropriate strategies helped guide students greater success, which was one purpose of this project. We were especially interested in increasing the success of students on the fringe.

As part of the process, students were given ten points for completing each of the four assessment forms during the semester. Student grades were determined out of a possible 1,000 points, so the points they received for completing a form was a small incentive for their work. Students were honest and forthright in this process and that is the reason it worked. They took their studies and commitment to do well seriously and they felt it was to their benefit to take advantage of faculty advisement, learning strategies and available resources.

Seventy-eight percent of students reported that the self-tracking process was helpful and effective. It required them to reflect on their approach to the course. It gave them direction and made them responsible for their own study habits and success. A smaller percent of students selected neutral on their assessment of the process. Many of those stated they already had the discipline and good study habits to succeed. All students felt the self-tracking process promoted a close cooperative working relationship with the professor.

We used Microsoft Excel to store and analyze our data. Inputting data to keep track of students did take time. Our plan in the future is to place the forms in Blackboard to help automate the process. The maximum number of students in a biology class at our college is twenty-four. At this number, the process is manageable. The use of the self-tracking method in larger classes may pose a challenge. However, a platform such as Blackboard to automate it may be helpful. Our study examined one segment of at-risk students, those taking gateway courses. We plan on expanding this study to include other courses and other types of at-risk students. We will keep track of the future effectiveness of this method by tracking retention and course completion.

Success is the ultimate goal of students and their teachers. This study described a face-to-face personalized method that involves students and instructors working together for success. This is a process in which decisions are driven by data and that type of process has been proven to be a successful approach (Achieving the Dream: Community Colleges Count 2009). It is also a student-centered method that keeps students actively involved in their learning and development (Kuh 2005). The Student Self-Tracking process is simple and our results have shown it to be effective. Students appreciated this approach and were grateful for the sincere concern instructors had for them.

About the Authors

James Cronmiller, teaches Human Anatomy and Physiology and is Co-Director of Undergraduate Research.

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