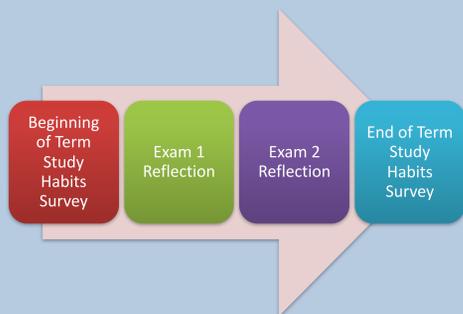


Abstract

Many college students appear to lack sufficient study skills to be successful in their courses. The aim of this research is to assess the study skills that students enter a course with, in order to determine their deficiencies. A study habits inventory was completed by students at the beginning and end of a term to determine what change, if any, has been made in study skills. Additionally, students completed a reflection assignment after each midterm exam where they reported on their exam preparation and proposed changes that they intend to make to their study habits. Results from this study are intended to be used to determine what instruction on study habits/techniques could benefit students.

Context

The study habit survey was given to participating students in the Winter 2016 CH 122 (second term of general chemistry) class. This research is to study my own teaching practices per the Action Research Fellowship. Additionally, this course uses assignments that require students to reflect on their course preparation.



Research Questions

During a ten-week course, do students report a change in study techniques or in study habits?

Do student final grades correlate with identified techniques or study habits and/or with changes of these behaviors?

Background and Frameworks

I strongly believe that all students can be successful given a proper learning environment and support. Students traditionally view chemistry as a challenging course, which is true, but I emphasize to students that if they are willing to work hard they can be successful. However, in my time teaching I have noticed that many students begin college with poor study skills and do not know how to effectively manage their time or how to prepare for exams. As I teach a lower-division course I feel that it is my responsibility to help students grow as learners so that they can be better prepared for future courses.

One assignment that I am particularly fond of is a post-exam reflection (aka exam wrapper). While I have anecdotal evidence of this assignment helps students improve their study strategies and exam scores I would like to conduct a more robust study to see what the true effect is. One of my goals of this study is to see how students benefit from this assignment and determine if the assignment could be altered to be more effective.

Methods

At the beginning and the end of the term students in CH 122 were given a short online survey to assess their current study skills, they were given the same survey at the end of the term. The survey results were compared to course grades and student responses to an exam reflection assignment.

Sample Study Habit Survey Questions

I study most subjects with the idea of remembering the material only until the test is over.

Never
 Rarely
 Sometimes
 Most of the Time
 Always

I try to write down everything my instructor says, as close to word for word as possible.

Never
 Rarely
 Sometimes
 Most of the Time
 Always

If I am sure I will remember something, I do not write it in my notes even if it seems important.

Never
 Rarely
 Sometimes
 Most of the Time
 Always

Except for important quotations and the definitions of technical terms, I copy my notes in my own words rather than the exact words used by my instructor or my textbook.

Never
 Rarely
 Sometimes
 Most of the Time
 Always

When I have difficulty with my work, I do not hesitate to seek help from my instructor.

Never
 Rarely
 Sometimes
 Most of the Time
 Always

I put my lecture notes away after an exam and never look at them again.

Never
 Rarely
 Sometimes
 Most of the Time
 Always

Sample Exam Wrapper Questions

What percentage of your preparation time was spent in each of these activities? (Must sum to 100)

Reading textbook section(s) for the first time

Rereading textbook section(s)

Watching videos

Rewatching videos

Reworking homework (Mastering Chemistry) problems

Solving textbook problems for practice

Reviewing your own notes

Reviewing worksheets

Reviewing quizzes

Reviewing recitation problems

Reviewing Learning Objectives

Getting help in the Mole Hole

Other

Total

If you answered Other, please specify the activity below:

Which of the things you mentioned doing to study for the exam were most helpful? Why?

Based on your responses to the questions above, name at least three things you plan to do differently in preparing for the next exam. For example, will you just spend more time studying, change a specific study habit or try a new one (if so, name it), make math more automatic so it does not get in the way of chemistry, try to sharpen some other skill (if so, name it), solve more problems for practice, or something else?

Did you improve on Exam 2, as compared to Exam 1? If you did, why do you think you did better? If not, what will you do differently as you prepare for the final exam?

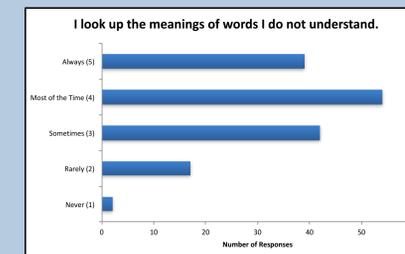
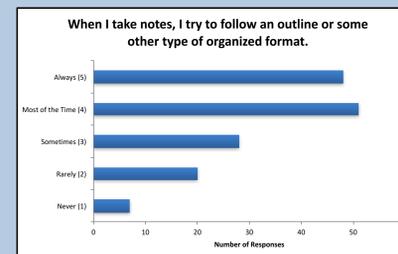
Based on your responses to the questions above, describe how you plan to prepare for the final exam. What aspects of your exam preparation do you plan to continue? Will you make changes to how you prepare? If so, name the changes that you will make. For example, will you just spend more time studying, change a specific study habit or try a new one (if so, name it), make math more automatic so it does not get in the way of chemistry, try to sharpen some other skill (if so, name it), solve more problems for practice, or something else?

Discussion

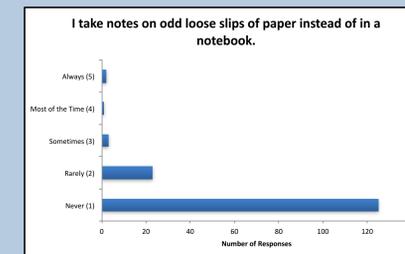
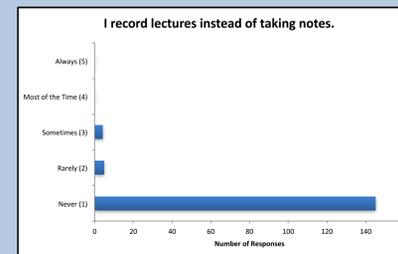
Data was analyzed for 154 students who completed the beginning and end of term study skills surveys and both midterm exam exam wrappers. Analysis of the end of term survey results show little to no correlation between engaging in good study habits (e.g., completing assigned readings before class, seeking help when needed) and final grades in the course. However, there is a correlation between engaging in bad study habits (e.g., skipping class, short study periods) and final grades in the course. Students who reported more frequently engaging in bad study habits tended to earn lower grades in the course. Future analysis will include a comparison of the exam wrapper results with course grades and survey results as the exam wrappers give snapshots of how students are studying during the term.

Results

What students say they do

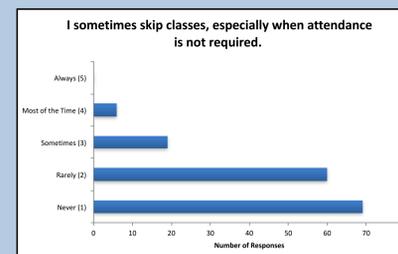


What students say they don't do

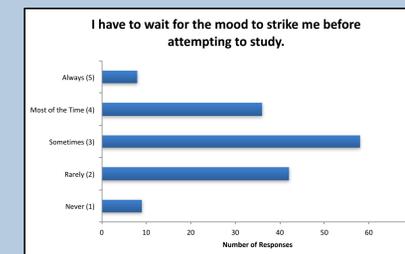
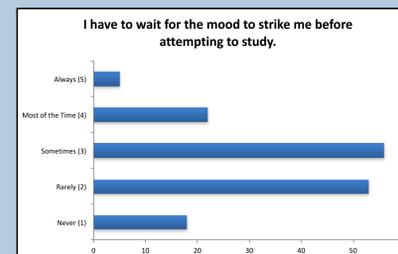
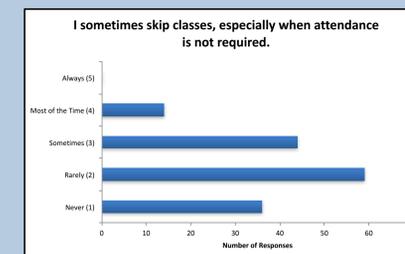


Where students reported the biggest changes

Beginning of Term Survey



End of Term Survey



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References

Jones, C. H., Slate, J. R., & Kyle, A. (1992). Study skills of teacher education students. *The Teacher Educator*, 28, 7-15.

Ambrose, S., Bridges, M., Lovett, M., DiPietro, M., & Norman, M. (2010). *How learning works: 7 research-based principles for smart teaching*. San Francisco, CA: Jossey Bass.