

Student Study Inventory  
Used in CHM 2045 Chemistry Fundamentals  
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## Introduction

Lower division, large-enrollment STEM courses often have densely-packed curricula that must be thoroughly conveyed in each semester. With a necessary focus on course content, students may not be receiving training on *how* to learn the content, or reflecting on how their study habits are working. Study skills, metacognition, self-efficacy and even information about tutoring resources may be neglected in the rush to teach the topics that appear on the standardized exams. Use of Student Study Inventories (SSI) offer a mechanism for incorporating those essential but neglected skills or information in these challenging courses. SSIs have been implemented in two semesters of college freshman general chemistry course and are described here.

## Description

SSIs are short (3-4) minute online questionnaires that students complete weekly, with for a very low percentage of course grade (<3%). Students earn points for *completing* the assessments and are not graded for the content of the responses. The inventory content varies by week at the discretion of an instructor but can be roughly separated into four categories: weekly inventory, pre-exam inventory, post-exam inventory, and essential skills. These assessment categories are described in the following paragraphs.

The Generic Inventory asks the students to reflect on their study habits and report the amount of time spent studying, the number of class periods they attended, and the number of tutoring or supplemental instruction sessions attended (with information about their offered times and dates). The generic assessment also includes questions about how the students spent their study time such as reading the text, taking notes while reading, making flashcards, solving problems, looking at solutions to problems, self-quizzing, reviewing class slides, etc... This section of the inventory should provide students with ideas about how to study effectively for the course.

The pre-exam assessment is administered in the week preceding an exam. This assessment contains some content similar to that of the generic inventory (time spent studying, class attendance) but also asks students how they plan to prepare for the exam and what exam score they expect to receive. Information about tutoring, reviews, group study strategies and self-quizzing strategies can be imbedded in the pre-assessment so that students will be exposed to these strategies before embarking on their exam preparations. For example, if a student plans to read with a high-lighter but does not plan to solve problems in a study group, then these questions may lead them to consider this option.

The post-exam assessment is provided in the days following the exam. The students are asked what grade they earned and to compare it to the grade they expected to receive. The students classify their exam preparation approach as "study over time," "cram before the exam," or "no-studying." Recall, students are graded on completion of this question, not on content, so the students may respond candidly. Students are asked to rate the efficacy of the study approach they used and if they would consider using an alternative strategy for future exams. Study strategies are described in the inventory as options for them to consider.

Essential Skills Inventories supplement the Generic Inventory. Students can be introduced to the concept of self-efficacy and informed that self-efficacy is a predictor of academic success and there are strategies students can employ to improve their self-efficacy. Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale can be used as a platform to construct the inventory. Motivation theory and motivation assessments can also be used to inform students of strategies they can employ to motivate themselves (e.g. rewarding oneself after completing a studying goal). Other essential information can be imparted such as the location and contact information of Student Counseling Center (and the fact that their services are free to students), the location and hours of the Recreation and Wellness Center (and the information that students who exercise regularly perform better academically), etc...

## Generic Study Inventory

1) About how many **minutes** did you spend studying chemistry **this week**? Type a number (example: 20) and not a word (not "twenty").

The following questions ask about your course attendance. As a reminder, attendance is NOT graded in this class and how you answer will have NO bearing on your course grade.

2) I attended [blank] out of the three lecture class periods this week.

- A) 0
- B) 1
- C) 2
- D) 3

3) I [blank1] attend the discussion/lab section this week.

- A) Did
- B) Didn't

4) I attended [blank2] SI or SARC tutoring sessions this week.

- A) 0
- B) 1
- C) 2
- D) 3 or more

The following questions ask about your time spent solving problems **this week**. As a reminder, how you answer these questions will have NO bearing on your course grade.

This week...

I [frequency6] work on homework problems this week.

- A) Did
- B) Didn't

I [frequency7] pick out difficult problems to later consult the professor, TA, or tutor.

- A) Did
- B) Didn't

I [frequency] looked at how the example problems within the chapter were solved, but didn't work them out myself.

- A) Always
- B) Generally
- C) Sometimes
- D) Never

I [frequency2] worked out how to solve the example problems that are inside the textbook chapter.

- A) Always
- B) Generally
- C) Sometimes
- D) Never

I [frequency4] worked by myself trying to solve the suggested homework problems before looking at the solutions.

- A) Always

- B) Generally
- C) Sometimes
- D) Never

I [frequency3] looked at the homework solutions without trying to solve the problems myself.

- A) Always
- B) Generally
- C) Sometimes
- D) Never

I [frequency5] worked with a study partner to solve the suggested homework problems.

- A) Always
- B) Generally
- C) Sometimes
- D) Never

This question asks about your time spent reading chemistry **this week**. As a reminder, how you answer these questions will have NO bearing on your course grade.

This week, I [frequency1] read the textbook before class.

- A) Always
- B) Generally
- C) Sometimes
- D) Never

This week, I [frequency2] read the textbook after the lecture content.

- A) Always
- B) Generally
- C) Sometimes
- D) Never

When I read the textbook, I [frequency3] also took notes on the material.

- A) Always
- B) Generally
- C) Sometimes
- D) Never

When I read the textbook, I [frequency4] made flashcards to review later.

- A) Always
- B) Generally
- C) Sometimes
- D) Never

This week, I [yesorno] read textbook material.

- A) Did
- B) Didn't

This week, I [frequency5] reviewed the PowerPoint lecture slides after each class.

- A) Always

- B) Generally
- C) Sometimes
- D) Never

This week, I [yesorno1] review the PowerPoint lecture slides.

- A) Did
- B) Didn't

This question asks about extra study resources in chemistry. How you answer these questions will have NO bearing on your course grade.

I [yesorno] get extra help from a friend, tutor, SARC or SI this week.

- A) Did
- B) Didn't

I [yesorno1] visit my professor's office hours to ask for help on concepts I didn't quite understand in class.

- A) Did
- B) Didn't

I [yesorno2] search for youtube or online help sites to explain concepts I didn't quite understand in class.

- A) Did
- B) Didn't

I [yesorno3] use an external resource, such as ClutchPrep, to help me study for this class.

- A) Did
- B) Didn't

## Pre-Exam Study Inventory

The following questions ask you about the study strategies you plan to use before the exam next week:

I will \_\_\_\_\_ re-read textbook chapters

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ review my own lecture notes

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ review PowerPoint presentations from lecture

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ test myself with questions or practice problems

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ study in groups

- A) Definitely
- B) Probably

- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ attend Supplemental Instruction session, SARC, or tutoring sessions.

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ “cram” lots of information the night before the test

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ make diagrams, charts, concept maps or pictures

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ recopy my notes

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ quiz myself with flash cards

- A) Definitely

- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ retake the quizzes from class

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

The following questions ask you about the test-taking strategies you are likely to use on the exam next week:

I will \_\_\_\_\_ read the test question and come up with an answer before looking at the possible choices.

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ read all the multiple choice options before selecting the best answer.

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ skip difficult questions that might take up too much time, making sure I answer all the questions that can be finished quickly.

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

I will \_\_\_\_\_ write on the exam to highlight key terms, draw diagrams or mark questions, or jot down mnemonics or equations.

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

If I have a good reason, I \_\_\_\_\_ change my answer on the scantron, rather than sticking with my first choice.

- A) Definitely
- B) Probably
- C) Probably not
- D) Definitely not

## Post-Exam Inventory

- 1) How many minutes did you spend studying this week? Enter a numerical value.
  
- 2) My main method for preparing for the exam was
  - A) Cramming right before the exam
  - B) Studying over time
  - C) No studying
  
- 3) I expected to receive a grade of \_\_\_\_\_ on the exam this week.
  - A) 90-100
  - B) 80-89.99
  - C) 70-79.99
  - D) 60-60.99
  - E) Less than 59%
  
- 4) I actually received a grade of \_\_\_\_\_ on the exam this week.
  - A) 90-100
  - B) 80-89.99
  - C) 70-79.99
  - D) 60-60.99
  - E) Less than 59%
  
- 5) When I had difficulty with learning certain concepts I \_\_\_\_\_ try alternative study strategies.
  - A) Did
  - B) Didn't

The following questions ask about your course attendance. As a reminder, attendance is NOT graded in this class and how you answer will have NO bearing on your course grade.

- 6) I attended \_\_\_\_\_ out of the three lecture class periods this week.
  - A) 3
  - B) 2
  - C) 1
  - D) 0

7) I \_\_\_\_\_ attend the discussion/lab section this week.

A) Did

B) Didn't

8) I attended \_\_\_\_\_ SI or SARC tutoring sessions this week.

A) 0

B) 1

C) 2

D) 3 or more

When preparing for the exam, I re-read my notes from class-\_\_\_\_\_.

A lot

Some

Not much

Not at all.

When preparing for the exam, I re-read the textbook sections \_\_\_\_\_

A lot

Some

Not much

Not at all.

When preparing for the exam, I re-read the PowerPoint presentations from class \_\_\_\_\_.

A lot

Some

Not much

Not at all.

When preparing for the exam, I tested myself using practice problems\_\_\_\_\_.

A lot

Some

Not much

Not at all.

When preparing for the exam, I studied in groups\_\_\_\_\_.

A lot

Some

Not much

Not at all.

When preparing for the exam, I attended supplemental instruction or SARC tutoring \_\_\_\_\_.

A lot

Some

Not much

Not at all.

When preparing for the exam, I made and studied flashcards with the chemistry content \_\_\_\_\_

A lot

Some

Not much

Not at all.

## Motivation Inventory

At this point in the semester, many students may feel worn out and have difficulty being motivated. Research in student success indicates that motivation is an important factor for resilience in difficult courses of study. There are strategies you can use to improve your motivation. The following are a list of motivation techniques and you can reflect on how often you use these techniques. This is meant to be a helpful tool for you - you may find a technique that will work for you. If you don't wish to answer, however, you can select the "no response" option and you can still earn credit for completing this inventory.

After making progress on an assignment, I \_\_\_\_\_ reward myself with some time on an activity I enjoy.

Always

Generally

Sometimes

Never

I \_\_\_\_\_ savor the positive feeling associated with accomplishment.

Always

Generally

Sometimes

Never

When I catch myself thinking negatively, I \_\_\_\_\_ stop the thought pattern and ask if the thought is really true.

Always

Generally

Sometimes

Never

I \_\_\_\_\_ expect that mistakes will happen but focus on how I can learn from them.

Always

Generally

Sometimes

Never

I \_\_\_\_\_ attend to my basic needs like getting enough sleep and eating healthy meals before I go to class or work on assignments.

Always

Generally

Sometimes

Never

I \_\_\_\_\_ make connections with classmates and get involved in activities.

Always

Generally

Sometimes

Never

I \_\_\_\_\_ ask for help or support when the need arises.

Always

Generally

Sometimes

Never

I \_\_\_\_\_ participate in clubs, sports teams, or other campus organizations.

Always

Generally

Sometimes

Never

I \_\_\_\_\_ go beyond my comfort zone to meet other people.

Always

Generally

Sometimes

Never

I \_\_\_\_\_ spend time with family and friends who support me and understand the demands of college.

Always

Generally

Sometimes

Never

I \_\_\_\_\_ found a professional or faculty mentor who can offer advice and guidance.

Have

Haven't

No response

I feel \_\_\_\_\_ about my ability to succeed in this class.

Very confident

Somewhat confident

Neutral

Somewhat unconfident

Very unconfident

## Self-Efficacy Inventory

**FROM** The General Self-Efficacy Scale (GSE)

Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, Measures in health psychology: A user's portfolio. Causal and control beliefs (pp. 35-37). Windsor, UK: NFER-NELSON.

In studies of student success factors, self-efficacy has been identified as an important predictor for academic success. Self-efficacy is defined as the beliefs about your ability to effectively perform a task. Even if you have low self-efficacy, it can be improved. Positive messages from others are a good start on this road to higher self-efficacy, as are positive statements you make about your own abilities. Successful experiences within the discipline can also help you improve your self-efficacy. When you're studying your homework problems, acknowledge your accomplishment when you attain mastery over a certain type of problem, even if you don't yet have mastery over all the topics in the chapter.

The following is an assessment to measure your own self-efficacy. It is meant to be a tool that is helpful to you. If you do not feel comfortable answering these questions, you can still earn the points for completing this question by selecting the "no response" option.

The statement, "I can always manage to solve difficult problems if I try hard enough," is

Not true at all

Hardly true

Moderately true

Exactly true

No response

The statement, "If someone opposes me, I can find the means and ways to get what I want," is

Not true at all

Hardly true

Moderately true

Exactly true

No response

The statement, "I am confident that I could deal efficiently with unexpected events," is

Not true at all

Hardly true

Moderately true

Exactly true

No response

The statement, "Thanks to my resourcefulness, I know how to handle unforeseen situations," is

The statement, "I can solve most problems if I invest the necessary effort," is

Not true at all

Hardly true

Moderately true

Exactly true

No response

The statement, "I can remain calm when facing difficulties because I can rely on my coping abilities," is

Not true at all

Hardly true

Moderately true

Exactly true

No response

The statement, "When I am confronted with a problem, I can usually find several solutions," is \_\_\_\_\_

Not true at all

Hardly true

Moderately true

Exactly true

No response

The statement, "It is easy for me to stick to my aims and accomplish my goals," is \_\_\_\_\_

Not true at all

Hardly true

Moderately true

Exactly true

No response

The statement, "If I am in trouble, I can usually think of a solution," is \_\_\_\_\_

Not true at all

Hardly true

Moderately true

Exactly true

No response

The statement, "I can usually handle whatever comes my way," is \_\_\_\_\_

Not true at all

Hardly true

Moderately true

Exactly true

No response

### **Coping with Stress Inventory**

Stress is unavoidable in our lives, however, there are many effective tools to help deal with stress. Some examples are:

- Build a support system (for example, join a student organization, volunteer your time with causes you believe in)
- Exercise (UCF Recreation and Wellness Center has lap pool, exercise machines, personal training and group exercise classes)
- Eat healthy
- Avoid negative coping strategies such as substance abuse, violence, self-harm.
- Get enough sleep

To what extent do you agree with the statement "I am effectively managing the stress in my life?"

Strongly agree

Agree

Neutral

Disagree

Strongly disagree